MSDS Number: **A0446** * * * * * *Effective Date:* ***09/01/09*** * * * * * *Supercedes:* ***02/01/07***

MSDS *Material Safety Data Sheet*

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS | J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-995-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

ACETONE

1. Product Identification

Synonyms: Dimethylketone; 2-propanone; dimethylketal
CAS No.: 67-64-1
Molecular Weight: 58.08
Chemical Formula: (CH3)2CO
Product Codes:
J.T. Baker: 5008, 5018, 5356, 5580, 5965, 5975, 9001, 9002, 9003, 9004, 9005, 9006, 9007, 9008, 9009, 9010, 9015, 9024, 9036, 9125, 9254, 9271, A134, V655
Mallinckrodt: 0018, 2432, 2435, 2437, 2438, 2440, 2443, 2850, H451, H580, H981

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Acetone	67-64-1	99 - 100%	Yes

3. Hazards Identification

Emergency Overview

DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate
Flammability Rating: 3 - Severe (Flammable)
Reactivity Rating: 0 - None
Contact Rating: 3 - Severe
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:
Inhalation of vapors irritates the respiratory tract. May cause coughing, dizziness, dullness, and headache. Higher concentrations can produce central nervous system depression, narcosis, and unconsciousness.
Ingestion:
Swallowing small amounts is not likely to produce harmful effects. Ingestion of larger amounts may produce abdominal pain, nausea and vomiting. Aspiration into lungs can produce severe lung damage and is a medical emergency. Other symptoms are expected to parallel inhalation.
Skin Contact:
Irritating due to defatting action on skin. Causes redness, pain, drying and cracking of the skin.
Eye Contact:
Vapors are irritating to the eyes. Splashes may cause severe irritation, with stinging, tearing, redness and pain.
Chronic Exposure:
Prolonged or repeated skin contact may produce severe irritation or dermatitis.
Aggravation of Pre-existing Conditions:
Use of alcoholic beverages enhances toxic effects. Exposure may increase the toxic potential of chlorinated hydrocarbons, such as chloroform, trichloroethane.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:
Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.
Skin Contact:
Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

5. Fire Fighting Measures

Fire:
Flash point: -20C (-4F) CC
Autoignition temperature: 465C (869F)
Flammable limits in air % by volume:
lel: 2.5; uel: 12.8
Extremely Flammable Liquid and Vapor! Vapor may cause flash fire.
Explosion:
Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can flow along surfaces to distant ignition source and flash back. Contact with strong oxidizers may cause fire. Sealed containers may rupture when heated. This material may produce a floating fire hazard. Sensitive to static discharge.
Fire Extinguishing Media:
Dry chemical, alcohol foam or carbon dioxide. Water may be ineffective. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

J. T. Baker SOLUSORB® solvent adsorbent is recommended for spills of this product.

7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
Acetone:
-OSHA Permissible Exposure Limit (PEL): 1000 ppm (TWA)
-ACGIH Threshold Limit Value (TLV): 500 ppm (TWA),
750 ppm (STEL) A4 - not classifiable as a human carcinogen
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, a half-face organic vapor respirator may be worn for up to ten times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece organic vapor respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator.
WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Clear, colorless, volatile liquid.
Odor:
Fragrant, mint-like
Solubility:
Miscible in all proportions in water.
Specific Gravity:
0.79 @ 20C/4C
pH:
No information found.
% Volatiles by volume @ 21C (70F):
100
Boiling Point:
56.5C (133F) @ 760 mm Hg
Melting Point:
-95C (-139F)
Vapor Density (Air=1):
2.0
Vapor Pressure (mm Hg):
400 @ 39.5C (104F)
Evaporation Rate (BuAc=1):
ca. 7.7

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Concentrated nitric and sulfuric acid mixtures, oxidizing materials, chloroform, alkalis, chlorine compounds, acids, potassium t-butoxide.
Conditions to Avoid:
Heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Oral rat LD50: 5800 mg/kg; Inhalation rat LC50: 50,100mg/m3; Irritation eye rabbit, Standard Draize, 20 mg severe; investigated as a tumorigen, mutagen, reproductive effector.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Acetone (67-64-1)	No	No	None

12. Ecological Information

Environmental Fate:
When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material is expected to readily biodegrade. When released to water, this material is expected to quickly evaporate. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be moderately degraded by photolysis. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.
Environmental Toxicity:
This material is not expected to be toxic to aquatic life. The LC50/96-hour values for fish are over 100 mg/l.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: ACETONE
Hazard Class: 3
UN/NA: UN1090

Packing Group: II
Information reported for product/size: 188L

International (Water, I.M.O.)

Proper Shipping Name: ACETONE
Hazard Class: 3
UN/NA: UN1090
Packing Group: II
Information reported for product/size: 188L

15. Regulatory Information

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--------\Chemical Inventory Status - Part 1\---------------------------------
Ingredient                                      TSCA  EC   Japan  Australia
------------------------------------------------ ----  ---  -----  ---------
Acetone (67-64-1)                                Yes  Yes   Yes      Yes

--------\Chemical Inventory Status - Part 2\---------------------------------
                                                       --Canada--
Ingredient                                      Korea  DSL   NDSL  Phil.
------------------------------------------------ -----  ---   ----  -----
Acetone (67-64-1)                                Yes   Yes   No     Yes

--------\Federal, State & International Regulations - Part 1\----------------
                                          -SARA 302-    ------SARA 313------
Ingredient                                RQ    TPQ     List  Chemical Catg.
----------------------------------------- ---   -----   ----  --------------
Acetone (67-64-1)                         No    No      Yes        No

--------\Federal, State & International Regulations - Part 2\----------------
                                                -RCRA-    -TSCA-
Ingredient                                CERCLA     261.33     8(d)
----------------------------------------- ------     ------    ------
Acetone (67-64-1)                         5000       U002       No


Chemical Weapons Convention:  No     TSCA 12(b):  No     CDTA:  Yes
SARA 311/312:  Acute: Yes      Chronic: No   Fire: Yes Pressure: No
Reactivity: No          (Pure / Liquid)
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Australian Hazchem Code: 2[Y]E
Poison Schedule: None allocated.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 1 Flammability: 3 Reactivity: 0
Label Hazard Warning:
DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.
Label Precautions:
Keep away from heat, sparks and flame.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Avoid breathing vapor.
Avoid contact with eyes, skin and clothing.
Label First Aid:
Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.
Product Use:
Laboratory Reagent.
Revision Information:
No Changes.
Disclaimer:
****
Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.
****
Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

CONCRETE CURATIVE SYSTEMS

CCS – S1 DATA SHEET

THE PERMANENT SOLUTION FOR EXCESSIVE WATER VAPOR & ALKALINITY

CORRECTS MOISTURE VAPOR READINGS FROM 3 TO OVER 25 LBS (ASTM F-1869) OR RH UP TO 99% (ASTM F-2170)

BLOCKS ALKALINITY UP TO PH 14 (ASTM D-1308)

MADE IN USA

DESCRIPTION:

The CCS - S1 is a one coat system which consists of a unique combination of epoxy resins and other chemical substances. It is specifically formulated to overcome the poor long-term adhesion properties of most resin-based systems when curing in an environment of extreme alkalinity (up to pH 14) and excessive water vapor drive. Due to its high density, it is capable of reducing water vapor levels acceptable for most coatings, adhesives and floor covering systems. The CCS - S1 is in full compliance with VOC regulations. The CCS - S1 has excellent chemical and abrasion resistance.

USES\BENEFITS:

The primary recommended use for the CCS - S1 is to solve the problems of alkalinity and moisture\water vapor emissions through mineral-based substrates like concrete. CCS - S1 can be used both indoors and outdoors, has low odor and is non-flammable. CCS - S1 can be applied to new concrete in 7 days minimum cure time reducing overall project timeline.

SURFACE PREPARATION:

The substrate to receive the CCS - S1, must be sound, clean, absorptive and meet acceptable industry standards. Any type of surface contamination like adhesives, coatings, curing compounds, alkaline silicates, efflorescence, dust, grease, oils, and all extraneous matter must be completely removed by shot blasting to ICRI CSP 3 finish. Acid etching is prohibited and grinding surface in not recommended.

APPLICATION INSTRUCTIONS:

The CCS - S1 is a two component material (Part A & Part B) that must be thoroughly mixed (follow instructions on container) prior to application on substrate. The CCS - S1 can be applied using a squeegee and\or short nap roller. The coverage rates for CCS - S1 depend on the surface texture and porosity of the substrate as well as, the degree of moisture level. On average, coverage of 70 to 125 sq. ft. per gallon can be expected. Contact Concrete Curative Systems for recommended spread rate based on individual project and environment.

UNDERLAYMENT APPLICATION:

If cementatious underlayments are to be used, for any reason, apply a non-porous substrate primer and then the underlayment on top of the CCS - S1. Consult with Concrete Curative Systems prior to using underlayments for recommendation based on individual project.

ENVIRONMENTAL CONDITIONS:

The CCS - S1 must be applied at ambient and substrate temperatures between 50 and 90 degrees F (10 C and 32.2 C, respectively). The relative humidity must not exceed 80%.

CONCRETE CONDITIONS, TESTING AND CONSIDERATIONS:

Prior to application of CCS - S1, all chemical treatments applied to the concrete, including, but not limited to, curing compounds, hardeners and densifiers, along with the mix design of the concrete should be documented and communicated to Concrete Curative Systems. Contamination from exterior sources like spills, leaks, or natural disasters that could introduce any number of harmful chemicals, organic or inorganic, should also be documented and communicated to Concrete Curative Systems prior to application. It is the facility owner's responsibility to communicate all information regarding the concrete's history and current status, including, but not limited to, testing for ASR and organic residue. If required, contact Concrete Curative Systems technical support for a recommendation on selecting a specialized engineering or testing firm.

CHARACTERISTICS OF PERFORMANCE:

CCS - S1 has been specially formulated to penetrate deep into the concrete substrate in order to provide an exceptional bond. Due to this penetration, the S1 may show signs of "out-gassing" by air voids being formed in the material (peaks) after application. In no way do these air voids diminish the effectiveness of the S1 because it is designed to self-seal under the voids. Once the S1 has cured these air voids can be removed with a razor scraper or using a light grit sanding disc. During the underlayment application, these voids can be filled with no effect to performance or appearance.

SAFETY PRECAUTIONS:

Component A contains epoxy resins. Component B contains amines. Avoid skin and eye contact as well as, prolonged exposure to vapors. Use safety goggles and chemical resistant gloves when handling. Ventilate the work area properly.

WARRANTY:

STANDARD WARRANTY: 10 years from installation date. Refer to Concrete Curative System's 10 Year Limited Warranty documents (can be found on web site: www.concretecurative.com) for additional information regarding warranty.

WARRANTY ON COMPLETE MITIGATION SYSTEM: Concrete Curative Systems in partnership with Combimix has developed a complete system that combines best technology in the flooring industry. The Complete Mitigation System provides a 10 year warranty covering the entire system including the underlayment. Refer to the Mitigation Complete Warranty for more information.

PACKAGING: 3 gallon premeasured kits
SHELF LIFE: 1 year in original sealed container
STORAGE: Between 50 -90 degrees F
CLEAN UP: Immediately with Xylene after use

PHYSICAL PROPERTIES		PERFORMANCE PROPERTIES	
Mixing ratio by volume:	2 PARTS A TO 1 PART B	Hardness Shore D:	80 (ASTM D-2240)
Solids Content:	100%	Adhesion to Wet: ASTM D-4145	500 psi (concrete fails before loss of bond)
Viscosity (cps 77 F)	600		
VOCs:	None	Resistance to Alkalinity:	up to 14 pH (ASTM 1308)
Pot Life (mixed)	30 minutes	Dry to touch in 6 hrs	fully cured in 8 hours
REDUCES VAPOR REDUCTION BY 94.5% (ASTM-E96)		REDUCES 19.1 LBS TO 1.06 LBS MVER* (LAB REPORT: DL15838 – DL LABS)	

CONCRETE CURATIVE SYSTEMS

MATERIAL SAFETY DATA SHEET
CCS – S1 PART A

SECTION I

Product Identification and General Information **FOR EMERGENCY CALL 1-877-227-8003**

Product Name: CCS – S1 - Part A
Product Class: Epoxy Resin
HMIS Codes: H F R P , 2 1 0 G

SECTION II

Ingredients	CAS#	OSHA PEL	ACGIH TLV
Bisphenol A Epichlorohydrin	25068-38-6	N/E	N/E
Bisphenol F Epichlorohydrin	28064-14-4	N/E	N/E

SECTION III

Physical Data

Boiling Point: N/A
Vapor Pressure: N/A
Vapor Density: N/A
Specific Gravity: 1.13
Percent Volatiles: None

Solubility in Water: Slight
Evaporation Rate: N/A
Appearance: Clear Viscous Liquid
Odor: Mild

SECTION IV

Fire and Explosion Hazard Data

Flash Point: >250F
Flammable Limits:
LEL: N/A
UEL: N/A
Extinguishing media: Water fog, "Alcohol" foam, dry chemical, CO2.
Hazardous Combustion Products: Carbon Monoxide, Aldehydes, Acids and other Organic Compounds.
Special fire fighting procedures: Wear full protective equipment including NIOSH approved Self-Contained breathing apparatus.
Fire and explosion hazards: Heating resin above 300F in the presence of air may cause slow oxidative decomposition. Above 500F Polymerization may occur. Aliphatic amines can produce strong exothermic reactions which in large masses can cause runaway polymerization and charring of the reactants. Do not breathe fumes.

SECTION V

Reactivity Data

Stability: Stable
Hazardous Polymerization: Will not occur
Incompatibility: Uncontrolled reaction with Amines

CONCRETE CURATIVE SYSTEMS

SECTION VI

Health Hazard Data

Primary Route of Entry: Dermal, Inhalation
Eye Contact: Can cause severe irritation, redness, tearing and blurred vision.
Skin Contact: Can cause skin irritation. May cause skin sensitization.
Inhalation: May cause nasal and respiratory irritation. Central nervous system effects including dizziness, weakness, nausea and headache.
Ingestion: May cause gastrointestinal irritation including nausea, vomiting and diarrhea.
Chronic Overexposure: Skin sensitization may be evidenced by rashes.

SECTION VII

Emergency First Aid Procedures

Eye Contact: Immediately flush eyes with plenty of water for at least 15 min. while holding eyelids open. Seek medical attention.
Skin Contact: Immediately remove contaminated clothing. Wipe excess from skin and flush with plenty of water. Use soap if available. Do not reuse clothing until thoroughly cleaned. Seek medical attention.
Inhalation: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Seek medical attention.
Ingestion: Do not induce vomiting. If vomiting occurs spontaneously keep head below hips to prevent aspiration of liquid into the lungs. Seek medical attention.

SECTION VIII

Special Protection Information

Ventilation: Provide ventilation to prevent build-up of vapors.
Respiratory Protection: If no ventilation, wear NIOSH approved respirator for organic vapors.
Eye Protection: Chemical splash goggles or other approved safety glasses.
Skin Protection: Wear chemical resistant gloves and other clothing as required to minimize contact.

SECTION IX

Spill or Leak Procedures

Steps to be taken if material is released or spilled:
Large Spill: Eliminate all ignition sources. Wear respirator and other protective clothing. Stop spill at source. Dike and contain spill. Pump or vacuum transfer spilled material to a clean recovery vessel. Soak up residue with absorbent material.
Small Spills: Absorbent material should be used to take up the spill.
Waste Disposal Method: Dispose of material in accordance with all federal, state and local regulations.

SECTION X

Shipping Data

D.O.T. Shipping Name: Paint Related Material
Technical Shipping Name: Epoxy Resin
UN/NA Number:

D.O.T. Hazard Class: Not Regulated
Freight Class: 55
D.O.T. Labels Required: None

CONCRETE CURATIVE SYSTEMS

MATERIAL SAFETY DATA SHEET
CCS – S1 PART B

SECTION I

Product Identification and General Information

For Emergency call 1-877-227-8003

Product Name: CCS – S1 - Part B
Product Class: Amine Blend
HMIS Codes: H F R P, 3 1 0 G

SECTION II

Ingredients	CAS#	OSHA PEL	ACGIH TLV
Ethylene Diamine	107-15-3	10 PPM	10 PPM
1,3 Cyclohexanedimrthamine	2579-20-6	N/E	N/E
Tris -2,4,6- (Dimethyaminomethyl) Phenol	90-72-2	N/E	N/E
Benzyl Alcohol	100-51-6	N/E	N/E
Bisphenol A Epichlorohydrin	25068-38-6	N/E	N/E

SECTION III

Physical Data

Boiling Point: N/A
Vapor Pressure: N/A
Vapor Density: Heavier Than Air
Specific Gravity: 1.01
Percent Volatiles: N/A

Solubility in Water: Moderate
Evaporation Rate: N/A
Appearance: Yellow to Brown Liquid
Odor: Amine

SECTION IV

Fire and Explosion Hazard Data

Flash Point: 180°F
Flammable Limits:
LEL: N/A
UEL: N/A
Extinguishing media: Water Fog, Foam, Dry Chemical or CO_2.
Hazardous Combustion Products: Ammonia, Oxides of Nitrogen, Toxic Fumes.
Special Fire Fighting Procedures: Wear full protective clothing including NIOSH approved Self-Contained breathing apparatus.
Fire and Explosion Hazards: Exposure to heat will build pressure in container. Cool with water spray.

SECTION V

Reactivity Data

Stability: Stable
Hazardous Polymerization: Will not occur
Incompatibility: Mineral acids, organic acids and strong oxidizing agents.

CONCRETE CURATIVE SYSTEMS

SECTION VI

Health Hazard Data

Primary Route of Entry: Dermal, inhalation, eye contact.
Eye Contact: Exposure to liquid or vapors may cause severe eye irritation. Symptoms include tearing, redness, burning, swelling and eye damage.
Skin Contact: May cause skin irritation. Redness, burning and skin damage.
Inhalation: Excessive inhalation of vapors can cause nasal and respiratory irritation, CNS effects include dizziness, weakness, nausea, headache and possible unconsciousness.
Ingestion: Can cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Chronic Overexposure: May cause skin sensitization.

SECTION VII

First Aid

Eyes: Immediately flush eyes with copious amounts of water for 15 minutes. Seek medical attention.
Skin: Immediately remove contaminated clothing. Wipe excess from skin. Wash with plenty of soap and water. Seek medical attention. Do not reuse clothing until thoroughly cleaned.
Ingestion: Do not induce vomiting. Give large quantities of water. Call physician immediately.
Inhalation: Remove victim to fresh air and provide oxygen if breathing is difficult. Seek medical attention.

Note to Physician: After ingestion, the patient may improve after the initial crisis, but perforation of gastrointestinal tract may occur 2-4 days later with severe abdominal pain, rigidity and tenderness of the abdomen and shock. Strictures of the esophagus may occur.

SECTION VIII

Special Protection Information

Ventilation: Provide ventilation to prevent build-up of vapors.
Respiratory Protection: If no ventilation wear NIOSH approved respirator for organic vapor.
Eye Protection: Chemical goggles and full face shield.
Skin Protection: Wear chemical resistant gloves and other clothing as required to prevent any contact with the skin.

SECTION IX

Spill or Leak Procedures

Steps to be taken if material is released or spilled: Ventilate spill area. Cover with inert, absorbent material and remove to disposal container. Observe all federal, state and local regulations. Do not flush to surface water or sanitary sewer.
Waste Disposal Method: Do not contaminate any lakes, streams, pond or underground water supply. Follow all federal, state and local regulations for disposal.

SECTION X

Shipping Data

D.O.T. Shipping Name: Amines, Liquid Corrosive N.O.S.
Technical Shipping Name: Aliphatic Amine
D.O.T. Hazard Class: 8 Corrosive Liquid
UN/NA Number: UN2735
Reportable Quantity: N/A

D.O.T Labels required
Freight Class: 55
Packing Group: II

CONCRETE CURATIVE SYSTEMS

CCS – F1 DATA SHEET

CONTROL JOINT FILLER

DESCRIPTION:
The CCS - F1 is a joint filler that is a specially formulated, non-shrinking, flexible epoxy used for filling joints and cracks in concrete that is to receive the CCS S-1 mitigation system. It is cured with a special curing agent that allows it to cure fully in the wet, alkaline environment found in concrete with moisture problems. CCS – F1 is modified with a raw material that is able to provide flexibility with no effect on the water and alkalinity resistance of the material. Color is clear and material can be used in spall areas.

CHEMICAL COMPOSITION:
Internally flexiblized with Epichiorohyprin epoxy cross-linked with a special amine curing agent.

SURFACE PREPARATION:
The joint areas to receive the CCS – F1, must be completely cleaned out, free of dirt, debris, coatings, sealers and all extraneous matter. Failure to remove all of the above will compromise adhesion. Simply raking debris out of control joints is not an acceptable cleaning method. Preferred method of joint cleaning is to use a dustless concrete saw with a diamond blade or an abrasive disk on a right angle grinder. No primer is needed. If unusual conditions are present, contact Concrete Curative Systems for technical advice.

MIXING INSTRUCTIONS:
CCS – F1 Joint Filler is a two component material (Part A & Part B) packaged in pre-measured kits (¾ gallon, 1½ gallon and 3 gallon). Proper proportioning and even consistency are absolutely critical for success. Pour the entire contents of Part B into the Part A container. Use a wooden stir stick to get all of the Part B out of the container. Mix the two components for 2 full minutes by the clock using a drill with mixing paddle. Do not attempt to hand mix. Be sure to move the drill around the mixing container scraping the sidewalls and bottom. Do not dilute or alter material, mix entire kit.

APPLICATION INSTRUCTIONS:
Control joints and cracks must be filled completely from bottom to top. Use a putty knife or mixing stick to place the material. If joint is overfilled, scrape smooth with a putty knife or flat trowel. The CCS – S1 sealer may be installed immediately afterwards as the F1 and S1 products will cure out together.

LMITATIONS:
Excessive substrate movement can cause hairline cracking

SAFETY PRECAUTIONS:
Component A contains epoxy resins. Component B contains amines. Avoid skin and eye contact as well as, prolonged exposure to vapors. Use safety goggles and chemical resistant gloves when handling. Ventilate the work area properly.

WARRANTY:
STANDARD WARRANTY: 10 years from installation date. Refer to Concrete Curative System's 10 Year Limited Warranty documents (can be found on web site: www.concretecurative.com) for additional information regarding warranty.

CONCRETE CURATIVE SYSTEMS

CCS – F1 DATA SHEET

PACKAGING: up to 3 gallon pre-measured kits
SHELF LIFE: 1 year in original sealed container
STORAGE: Between 50 -90 degrees F
CLEAN UP: Immediately with Xylene after use

TECHNICAL DATA:

Physical Properties

Mixing Ratio, by Volume .....Supplied in pre-measured kits only
Solids Content.....100%
Volatile Organic Compounds.....None
Pot Life (one quart mass at 77°F).....40 minutes
Cure Times (77°F)
Dry to touch.....6 hours
Fill with CCS - F1 only.....8 hours
Fill with CCS – F1 then coat with CCS – S1..... immediately

Performance Properties
Hardness, Shore D (ASTM D-2240) 70
Ultimate Elongation, % (ASTM D-638).....60
Ultimate Compressive Strength (ASTM D-695) 25,500
Resistance to alkalinity, (ASTM D-1308) (casting exposed to 35% solutions of potassium and sodium hydroxide for 60 days)..... no visual change, 0.14% weight gain
Adhesion to wet concrete (ASTM D-4541) ..... concrete fails before loss of bond

APPROXIMATE RECOMMENDED COVERAGE RATES	
JOINT SIZE (US)	LF PER GALLON
¼ " x 1"	90
¼" x 1 – ¼"	72
¼" x 1- ½"	60
¼" x 1 – ¾"	52
¼" x 2"	45

MATERIAL SAFETY DATA SHEET
CCS – F1 JOINT FILLER - Part A

SECTION I

Product Identification and General Information

Product Name: CCS – F1
Product Class: Epoxy Resin
HMIS Codes: H F R P
2 1 0 G

FOR EMERGENCY CALL 1-877-227-8003

SECTION II

Hazardous Ingredients	CAS#	OSHA PEL	ACGIH TLV
Epichlorohyprin - Bisphenol A	25068-38-6	N/E	N/E
Epichlorohyprin - Polyglycol	026142-30-3	N/E	N/E

SECTION III

Physical Data

Boiling Point: N/A
Vapor Pressure: N/A
Vapor Density: N/A
Specific Gravity: 1.11
Percent Volatiles: N/A

Solubility in Water: Slight
Evaporation Rate: N/A
Appearance: Clear to Light Yellow Paste
Odor: Mild

SECTION IV

Fire and Explosion Hazard Data

Flash Point: >250° F
Flammable Limits:
LEL: N/A
UEL: N/A
Extinguishing media: Water fog, "Alcohol" foam, dry chemical, CO_2.
Hazardous Combustion Products: Carbon Monoxide, Aldehydes, Acids and other Organic Compounds.
Special fire fighting procedures: Wear full protective equipment including NIOSH approved Self-Contained breathing apparatus.
Fire and explosion hazards: Heating resin above 300°F in the presence of air may cause slow oxidative decomposition. Above 500°F Polymerization may occur. Aliphatic amines can produce strong exothermic reactions which in large masses can cause runaway polymerization and charring of the reactants. Do not breathe fumes

SECTION V

Reactivity Data

Stability: Stable
Hazardous Polymerization: Will not occur
Incompatibility: Uncontrolled reaction with Amines

SECTION VI

Health Hazard Data

Primary Route of Entry: Dermal, Inhalation
Eye Contact: Can cause severe irritation, redness, tearing and blurred vision.
Skin Contact: Can cause skin irritation. May cause skin sensitization.
Inhalation: May cause nasal and respiratory irritation. Central nervous system effects including dizziness, weakness, nausea and headache.
Ingestion: May cause gastrointestinal irritation including nausea, vomiting and diarrhea.
Chronic Overexposure: Skin sensitization may be evidenced by rashes.

SECTION VII

Emergency First Aid Procedures

Eye Contact: Immediately flush eyes with plenty of water for at least 15 min. while holding eyelids open. Seek medical attention.
Skin Contact: Immediately remove contaminated clothing. Wipe excess from skin and flush with plenty of water. Use soap if available. Do not reuse clothing until thoroughly cleaned. Seek medical attention.
Inhalation: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Seek medical attention.
Ingestion: Do not induce vomiting. If vomiting occurs spontaneously keep head below hips to prevent aspiration of liquid into the lungs. Seek medical attention.

SECTION VIII

Special Protection Information

Ventilation: Provide ventilation to prevent build-up of vapors.
Respiratory Protection: If no ventilation, wear NIOSH approved respirator for organic vapors.
Eye Protection: Chemical splash goggles or other approved safety glasses.
Skin Protection: Wear chemical resistant gloves and other clothing as required to minimize contact.

SECTION IX

Spill or Leak Procedures

Steps to be taken if material is released or spilled:
Large Spill: Eliminate all ignition sources. Wear respirator and other protective clothing. Stop spill at source. Dike and contain spill. Pump or vacuum transfer spilled material to a clean recovery vessel. Soak up residue with absorbent material.
Small Spills: Absorbent material should be used to take up the spill.
Waste Disposal Method: Dispose of material in accordance with all federal, state and local regulations.

SECTION X

Shipping Data

D.O.T. Shipping Name: Paint Related Material
Technical Shipping Name: Epoxy Resin
D.O.T. Hazard Class: Not Regulated
UN/NA Number: N/A

D.O.T. Labels Required: None
Reportable Quantity: None
Freight Class: 55

MATERIAL SAFETY DATA SHEET
CCS – F1 JOINT FILLER - Part B

SECTION I

Product Identification and General Information

Product Name: CCS – F1
Product Class: Aliphatic Amine
HMIS Codes: H F R P
3 1 0 G

FOR EMERGENCY CALL 1-877-227-8003

SECTION II

Hazardous Ingredients	CAS#	OSHA PEL	ACGIH TLV
1,5 Pentanediamine, 2-Methyl	15520-10-2	N/E	N/E
Benzyl Alcohol	100-51-6	N/E	N/E
Epichlorohyprin - Bisphenol A	25068-38-6	N/E	N/E

SECTION III

Physical Data

Boiling Point: N/A
Vapor Pressure: 1.8 mm Hg.
Vapor Density: Greater Than Air
Specific Gravity: .99
Percent Volatiles: N/A

Solubility in Water: Moderate
Evaporation Rate: Less than Butyl Acetate
Appearance: Dark Yellow to Brown Liquid
Odor: Ammonial

SECTION IV

Fire and Explosion Hazard Data

Flash Point: 180°F
Flammable Limits:
LEL: N/A
UEL: N/A
Extinguishing media: Water Fog, Foam, Dry Chemical or CO_2.
Hazardous Combustion Products: Ammonia, Oxides of Nitrogen, Toxic Fumes.
Special Fire Fighting Procedures: Wear full protective clothing including NIOSH approved Self-Contained breathing apparatus.
Fire and Explosion Hazards: Exposure to heat will build pressure in container. Cool with water spray.

SECTION V

Reactivity Data

Stability: Stable
Hazardous Polymerization: Will not occur
Incompatibility: Mineral acids, organic acids and strong oxidizing agents.

SECTION VI

Health Hazard Data

Primary Route of Entry: Dermal, inhalation, eye contact.
Eye Contact: Exposure to liquid or vapors may cause severe eye irritation. Symptoms include tearing, redness, burning, swelling and eye damage.
Skin Contact: May cause skin irritation. Redness, burning and skin damage.
Inhalation: Excessive inhalation of vapors can cause nasal and respiratory irritation, CNS effects include dizziness, weakness, nausea, headache and possible unconsciousness.
Ingestion: Can cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Chronic Overexposure: May cause skin sensitization.

SECTION VII

First Aid

Eyes: Immediately flush eyes with copious amounts of water for 15 minutes. Seek medical attention.
Skin: Immediately remove contaminated clothing. Wipe excess from skin. Wash with plenty of soap and water. Seek medical attention. Do not reuse clothing until thoroughly cleaned.
Ingestion: Do not induce vomiting. Give large quantities of water. Call physician immediately.
Inhalation: Remove victim to fresh air and provide oxygen if breathing is difficult. Seek medical attention.

Note to Physician: After ingestion, the patient may improve after the initial crisis, but perforation of gastrointestinal tract may occur 2-4 days later with severe abdominal pain, rigidity and tenderness of the abdomen and shock. Strictures of the esophagus may occur.

SECTION VIII

Special Protection Information

Ventilation: Provide ventilation to prevent build-up of vapors.
Respiratory Protection: If no ventilation, wear NIOSH approved respirator for organic vapors.
Eye Protection: Chemical goggles and full face shield.
Skin Protection: Wear chemical resistant gloves and other clothing as required to prevent any contact with the skin.

SECTION IX

Spill or Leak Procedures

Steps to be taken if material is released or spilled: Ventilate spill area. Cover with inert, absorbent material and remove to disposal container. Observe all federal, state and local regulations. Do not flush to surface water or sanitary sewer.
Waste Disposal Method: Do not contaminate any lakes, streams, pond or underground water supply. Follow all federal, state and local regulations for disposal.

SECTION X

Shipping Data

D.O.T. Shipping Name: Amines, Liquid Corrosive N.O.S.
Technical Shipping Name: Aliphatic Amine
D.O.T. Hazard Class: 8 Corrosive Liquid
UN/NA Number: UN2735

D.O.T. Labels Required: Corrosive
Packing Group: III
Reportable Quantity: N/A
Freight Class: 55

CONCRETE CURATIVE SYSTEMS

CCS – S2 FAST CURE DATA SHEET

THE PERMANENT SOLUTION FOR EXCESSIVE WATER VAPOR & ALKALINITY

CORRECTS MOISTURE VAPOR READINGS FROM 3 TO OVER 25 LBS (ASTM F-1869) OR RH UP TO 99% (ASTM F-2170)

BLOCKS ALKALINITY UP TO PH 14 (ASTM D-1308)

MADE IN USA

DESCRIPTION:

The CCS – S2 is a one coat system which consists of a unique combination of epoxy resins and other chemical substances. It is specifically formulated to overcome the poor long-term adhesion properties of most resin-based systems when curing in an environment of extreme alkalinity (up to pH 14) and excessive water vapor drive. Due to its high density, it is capable of reducing water vapor levels acceptable for most coatings, adhesives and floor covering systems. The CCS – S2 is in full compliance with VOC regulations. The CCS – S2 has excellent chemical and abrasion resistance.

USES\BENEFITS:

The primary recommended use for the CCS – S2 is to solve the problems of alkalinity and moisture\water vapor emissions through mineral-based substrates like concrete. CCS – S2 can be used both indoors and outdoors, has low odor and is non-flammable. CCS – S2 can be applied to new concrete in 7 days minimum cure time reducing overall project timeline.

SURFACE PREPARATION:

The substrate to receive the CCS – S2, must be sound, clean, absorptive and meet acceptable industry standards. Any type of surface contamination like adhesives, coatings, curing compounds, alkaline silicates, efflorescence, dust, grease, oils, and all extraneous matter must be completely removed by shot blasting to ICRI CSP 3 finish. Acid etching is prohibited and grinding surface in not recommended.

APPLICATION INSTRUCTIONS:

The CCS – S2 is a two component material (Part A & Part B) that must be thoroughly mixed (follow instructions on container) prior to application on substrate. The CCS – S2 can be applied using a squeegee and\or short nap roller. The coverage rates for CCS – S2 depend on the surface texture and porosity of the substrate as well as, the degree of moisture level. On average, coverage of 70 to 125 sq. ft. per gallon can be expected. Contact Concrete Curative Systems for recommended spread rate based on individual project and environment.

UNDERLAYMENT APPLICATION:

If cementatious underlayments are to be used, for any reason, apply a non-porous substrate primer and then the underlayment on top of the CCS – S2. Consult with Concrete Curative Systems prior to using underlayments for recommendation based on individual project.

ENVIRONMENTAL CONDITIONS:

The CCS – S2 must be applied at ambient and substrate temperatures between 50 and 90 degrees F (10 C and 32.2 C, respectively). The relative humidity must not exceed 80%.

CONCRETE CONDITIONS, TESTING AND CONSIDERATIONS:

Prior to application of CCS – S2, all chemical treatments applied to the concrete, including, but not limited to, curing compounds, hardeners and densifiers, along with the mix design of the concrete should be documented and communicated to Concrete Curative Systems. Contamination from exterior sources like spills, leaks, or natural disasters that could introduce any number of harmful chemicals, organic or inorganic, should also be documented and communicated to Concrete Curative Systems prior to application. It is the facility owner's responsibility to communicate all information regarding the concrete's history and current status, including, but not limited to, testing for ASR and organic residue. If required, contact Concrete Curative Systems technical support for a recommendation on selecting a specialized engineering or testing firm.

CHARACTERISTICS OF PERFORMANCE:

CCS – S2 has been specially formulated to penetrate deep into the concrete substrate in order to provide an exceptional bond. Due to this penetration, the S2 may show signs of "out-gassing" by air voids being formed in the material (peaks) after application. In no way do these air voids diminish the effectiveness of the S2 because it is designed to self-seal under the voids. Once the S2 has cured these air voids can be removed with a razor scraper or using a light grit sanding disc. During the underlayment application, these voids can be filled with no effect to performance or appearance.

SAFETY PRECAUTIONS:

Component A contains epoxy resins. Component B contains amines. Avoid skin and eye contact as well as, prolonged exposure to vapors. Use safety goggles and chemical resistant gloves when handling. Ventilate the work area properly.

WARRANTY:

STANDARD WARRANTY: 10 years from installation date. Refer to Concrete Curative System's 10 Year Limited Warranty documents (can be found on web site: www.concretecurative.com) for additional information regarding warranty.

WARRANTY ON COMPLETE MITIGATION SYSTEM: Concrete Curative Systems in partnership with Combimix has developed a complete system that combines best technology in the flooring industry. The Complete Mitigation System provides a 10 year warranty covering the entire system including the underlayment. Refer to the Mitigation Complete Warranty for more information.

PACKAGING: 3 gallon premeasured kits
SHELF LIFE: 1 year in original sealed container
STORAGE: Between 50 -90 degrees F
CLEAN UP: Immediately with Xylene after use

PHYSICAL PROPERTIES		PERFORMANCE PROPERTIES	
Mixing ratio by volume:	2 PARTS A TO 1 PART B	Hardness Shore D:	80 (ASTM D-2240)
Solids Content:	100%	Adhesion to Wet: ASTM D-4145	500 psi (concrete fails before loss of bond)
Viscosity (cps 77 F)	600		
VOCs:	None	Resistance to Alkalinity:	up to 14 pH (ASTM 1308)
Pot Life (mixed)	15 minutes	Dry to touch in 2 hrs	fully cured in 4 hours
REDUCES VAPOR REDUCTION BY 94.5% (ASTM-E96)		REDUCES 19.1 LBS TO 1.06 LBS MVER* (LAB REPORT: DL15838 – DL LABS)	

CONCRETE CURATIVE SYSTEMS

MATERIAL SAFETY DATA SHEET
CCS – S2 FAST CURE - PART A

SECTION I

Product Identification and General Information

FOR EMERGENCY CALL 1-877-227-8003

Product Name: CCS – S2 - Part A
Product Class: Epoxy Resin
HMIS Codes: H F R P , 2 1 0 G

SECTION II

Ingredients	CAS#	OSHA PEL	ACGIH TLV
Bisphenol A Epichlorohydrin	25068-38-6	N/E	N/E
Bisphenol F Epichlorohydrin	28064-14-4	N/E	N/E

SECTION III

Physical Data

Boiling Point: N/A
Vapor Pressure: N/A
Vapor Density: N/A
Specific Gravity: 1.13
Percent Volatiles: None

Solubility in Water: Slight
Evaporation Rate: N/A
Appearance: Clear Viscous Liquid
Odor: Mild

SECTION IV

Fire and Explosion Hazard Data

Flash Point: >250F
Flammable Limits:
LEL: N/A
UEL: N/A
Extinguishing media: Water fog, "Alcohol" foam, dry chemical, CO_2.
Hazardous Combustion Products: Carbon Monoxide, Aldehydes, Acids and other Organic Compounds.
Special fire fighting procedures: Wear full protective equipment including NIOSH approved Self-Contained breathing apparatus.
Fire and explosion hazards: Heating resin above 300F in the presence of air may cause slow oxidative decomposition. Above 500F Polymerization may occur. Aliphatic amines can produce strong exothermic reactions which in large masses can cause runaway polymerization and charring of the reactants. Do not breathe fumes.

SECTION V

Reactivity Data

Stability: Stable
Hazardous Polymerization: Will not occur
Incompatibility: Uncontrolled reaction with Amines

CONCRETE CURATIVE SYSTEMS

SECTION VI

Health Hazard Data

Primary Route of Entry: Dermal, Inhalation
Eye Contact: Can cause severe irritation, redness, tearing and blurred vision.
Skin Contact: Can cause skin irritation. May cause skin sensitization.
Inhalation: May cause nasal and respiratory irritation. Central nervous system effects including dizziness, weakness, nausea and headache.
Ingestion: May cause gastrointestinal irritation including nausea, vomiting and diarrhea.
Chronic Overexposure: Skin sensitization may be evidenced by rashes.

SECTION VII

Emergency First Aid Procedures

Eye Contact: Immediately flush eyes with plenty of water for at least 15 min. while holding eyelids open. Seek medical attention.
Skin Contact: Immediately remove contaminated clothing. Wipe excess from skin and flush with plenty of water. Use soap if available. Do not reuse clothing until thoroughly cleaned. Seek medical attention.
Inhalation: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Seek medical attention.
Ingestion: Do not induce vomiting. If vomiting occurs spontaneously keep head below hips to prevent aspiration of liquid into the lungs. Seek medical attention.

SECTION VIII

Special Protection Information

Ventilation: Provide ventilation to prevent build-up of vapors.
Respiratory Protection: If no ventilation, wear NIOSH approved respirator for organic vapors.
Eye Protection: Chemical splash goggles or other approved safety glasses.
Skin Protection: Wear chemical resistant gloves and other clothing as required to minimize contact.

SECTION IX

Spill or Leak Procedures

Steps to be taken if material is released or spilled:
Large Spill: Eliminate all ignition sources. Wear respirator and other protective clothing. Stop spill at source. Dike and contain spill. Pump or vacuum transfer spilled material to a clean recovery vessel. Soak up residue with absorbent material.
Small Spills: Absorbent material should be used to take up the spill.
Waste Disposal Method: Dispose of material in accordance with all federal, state and local regulations.

SECTION X

Shipping Data

D.O.T. Shipping Name: Paint Related Material
Technical Shipping Name: Epoxy Resin
UN/NA Number:

D.O.T. Hazard Class: Not Regulated
Freight Class: 55
D.O.T. Labels Required: None

CONCRETE CURATIVE SYSTEMS

MATERIAL SAFETY DATA SHEET
CCS – S2 FAST CURE - PART B

SECTION I

Product Identification and General Information

For Emergency call 1-877-227-8003

Product Name: CCS – S2 - Part B
Product Class: Modified Bisphenol F Epoxy Resin
HMIS Codes: H F R P, 3 1 0 G

SECTION II

Ingredients

	CAS#	OSHA PEL	ACGIH TLV
Ethylene Diamine	107-15-3	10 PPM	10 PPM
1,3 Cyclohexanedimrthamine	2579-20-6	N/E	N/E
Tris -2,4,6- (Dimethyaminomethyl) Phenol	90-72-2	N/E	N/E
Benzyl Alcohol	100-51-6	N/E	N/E
Bisphenol A Epichlorohydrin	25068-38-6	N/E	N/E

SECTION III

Physical Data

Boiling Point: 300+F
Vapor Pressure: 1.3 mm Hg
Vapor Density: Heavier Than Air
Specific Gravity: 1.15
Percent Volatiles: 5

Solubility in Water: Moderate
Evaporation Rate: N/A
Appearance: Clear Light Liquid
Odor: Mild Odor

SECTION IV

Fire and Explosion Hazard Data

Flash Point: 200°F
Flammable Limits:
LEL: N/A
UEL: N/A
Extinguishing media: Water Fog, Foam, Dry Chemical or CO_2.
Hazardous Combustion Products: Carbon Monoxide, Carbon Dioxide and misc Hydrocarbons
Special Fire Fighting Procedures: Wear full protective clothing including NIOSH approved Self-Contained breathing apparatus.
Fire and Explosion Hazards: Exposure to heat will build pressure in container. Cool with water spray.

SECTION V

Reactivity Data

Stability: Stable
Hazardous Polymerization: Will not occur
Incompatibility: Mineral acids, organic acids and strong oxidizing agents.

CONCRETE CURATIVE SYSTEMS

SECTION VI

Health Hazard Data

Primary Route of Entry: Dermal, inhalation, eye contact.
Eye Contact: Exposure to liquid or vapors may cause severe eye irritation. Symptoms include tearing, redness, burning, swelling and eye damage.
Skin Contact: May cause skin irritation. Redness, burning and skin damage.
Inhalation: Excessive inhalation of vapors can cause nasal and respiratory irritation, CNS effects include dizziness, weakness, nausea, headache and possible unconsciousness.
Ingestion: Can cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Chronic Overexposure: May cause skin sensitization.

SECTION VII

First Aid

Eyes: Immediately flush eyes with copious amounts of water for 15 minutes. Seek medical attention.
Skin: Immediately remove contaminated clothing. Wipe excess from skin. Wash with plenty of soap and water. Seek medical attention. Do not reuse clothing until thoroughly cleaned.
Ingestion: Do not induce vomiting. Give large quantities of water. Call physician immediately.
Inhalation: Remove victim to fresh air and provide oxygen if breathing is difficult. Seek medical attention.

Note to Physician: After ingestion, the patient may improve after the initial crisis, but perforation of gastrointestinal tract may occur 2-4 days later with severe abdominal pain, rigidity and tenderness of the abdomen and shock. Strictures of the esophagus may occur.

SECTION VIII

Special Protection Information

Ventilation: Provide ventilation to prevent build-up of vapors.
Respiratory Protection: If no ventilation wear NIOSH approved respirator for organic vapor.
Eye Protection: Chemical goggles and full face shield.
Skin Protection: Wear chemical resistant gloves and other clothing as required to prevent any contact with the skin.

SECTION IX

Spill or Leak Procedures

Steps to be taken if material is released or spilled: Ventilate spill area. Cover with inert, absorbent material and remove to disposal container. Observe all federal, state and local regulations. Do not flush to surface water or sanitary sewer.
Waste Disposal Method: Do not contaminate any lakes, streams, pond or underground water supply. Follow all federal, state and local regulations for disposal.

SECTION X

Shipping Data

D.O.T. Shipping Name: Amines, Liquid Corrosive N.O.S.
Technical Shipping Name: Aliphatic Amine
D.O.T. Hazard Class: 8 Corrosive Liquid
UN/NA Number: UN2735
Reportable Quantity: N/A

D.O.T Labels required
Freight Class: 55
Packing Group: II

PP600 Primer™

Premium Quality, Solvent-Free, Concentrated Styrene Acrylate Primer for Self Leveling Underlayments and Toppings

ecofriendly™
Improving indoor air quality.

description

COMBIMIX PP600 Primer™ is a premium quality, concentrated styrene acrylate primer for use over various substrates including concrete, light-weight concrete, PVC, well bonded VCT/VAT, Cutback, adhesive residue, gypsum, terrazzo, resinous floor coatings, wood, steel, copper, lead, stainless steel, quarry and ceramic tile. **PP600 Primer™ is the only primer you will need to install COMBIMIX leveling and topping compounds no matter what substrate you are covering with COMBIMIX products.** Creates an extremely tenacious bond to the substrate and reduces surface porosity.

installation features

- Easy to apply with broom
- Creates the strongest bonds available
- Reduces substrate porosity
- Versatile – one product for use on all substrates and with all COMBIMIX leveling and topping compounds

eco-friendly features

- Solvent-free formula, low TVOC's
- Use with a COMBIMIX leveling or topping compound to dramatically improve indoor air quality compared to applications of Portland cement-based products
- LEED compliant product – contributes points to LEED Certified Projects

uses

- Use to prime various substrates for increased bond of COMBIMIX leveling and topping compounds
- Use for interior or exterior applications
- Use for Green Building projects requiring strict environmental and indoor air quality requirements

limitations

- Substrate temperature should be a minimum 43°F (6°C) and air temperature maintained between 50 - 77°F (10 - 25°C) during and up to 72 hours after application

recommended substrates

Combimix products can be installed directly over most substrates, including gypsum-based surfaces, provided they have at least a tensile bond strength of 72 psi (0.5 MPa) for COMBIMIX Low Prep underlayments or 217 psi (1.5 MPa) for COMBIMIX Low Prep Industrial toppings).

- All grade levels of concrete, including relatively fresh concrete, up to 90% RH depending on the type of floor covering to be installed over Combimix, with virtually no scarifying or shotblasting required
- Well-bonded gypsum and light-weight concrete
- Exterior-grade and engineer-approved plywood and wood subfloors
- Well bonded ceramic tile and quarry tile
- Metal such as steel, stainless steel, aluminum, copper or lead
- Well bonded VCT, VAT and non-cushioned sheet vinyl
- Resin-based coatings (i.e. epoxy, urethane, polyurethane, polyurea, MMA)
- Adhesive residue such as water soluble and asphaltic cutback adhesives
- Cement and epoxy terrazzo floors
- Exterior concrete and quarry tile

preparing the surface

The substrate shall be clean and free from dust, oil or any contaminants which may contribute to decreased bond. A tensile pull test should be taken in order to determine surface bond strength on the substrate. If a tensile bond test is not performed or fails to meet the minimum of 72 psi (0.5 Mpa) for COMBIMIX Low Prep underlayments or 217 psi (1.5 Mpa) for COMBIMIX Low Prep Industrial toppings, mechanical removal of weak surfaces must be completed to clean the surface down to a sound and solid substrate by shot-blasting, scarifying or similar method. Remove any loose particles and then vacuum. Surface should be primed with COMBIMIX PP600 primer and allowed to dry. The substrate temperature should be a minimum 43°F (6°C) during application and air temperature maintained between 50-77°F (10-25°C). Adequate ventilation should be provided to ensure uniform drying. Moisture content of the substrate should be RH 90% or less prior to application of COMBIMIX Low Prep underlayment and toppings. Please consult with the individual floor covering manufacturer for acceptable moisture levels affecting their product(s). If Calcium Chloride moisture testing of the substrate is to be performed, it must be done prior to the application of COMBIMIX products as a false high reading will occur due to the tests being inaccurate over leveling compounds. Relative Humidity testing may occur after the installation of COMBIMIX products.

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Combimix®

mixing

PP600 Primer™ is prepared in a mixing vessel. Read the primer guide on the packaging to make the correct mixture. The solution of water and primer is easily mixed by stirring. Always ensure good ventilation when doing priming work, since it promotes drying.

When used with Underlayments:

Substrate	Dilution (PP600 : Water)	Coverage per ft² / mixed gal of water
Burnished concrete	**1 : 3**	**275 ft²**
Wood, Linoleum	**5 : 1**	**160 ft²**
VCT, VAT, PVC, Adhesive residues, and other low porosity substrates	**1 : 1***	**205 ft²**
Ceramic/Quarry tile, Paint, Steel	**1 : 1 : 1** (PP600 : Water : Combimix Final Finish™)	**300 ft²**
Highly absorbant surface	**1 : 5 + 1 : 3****	**285 ft²** (1st coat) ; **300 ft²** (2nd coat)

When used with Wear Surfaces:

Substrate	Dilution (PP600 : Water)	Coverage per ft² / mixed gal of water
Concrete, Light weight concrete	**1 : 3**	**275 ft²**
Porous surfaces	**1 : 5 + 1 : 3****	**285 ft²** (1st coat) ; **300 ft²** (2nd coat)

* *Dilute Combimix PP600 primer and water in a mixing pail, then add some powder and mix properly. Finally, apply the slurry to the substrate.*

** *Should be primed twice, please allow the first coat to become dry to touch before application of the second coat.*

application

PP600 Primer™ can be used on most types of common commercial and residential substrates. Follow individual Combimix underlayment or topping data sheets for approved substrates for those products. Priming must always be done between the layers of Combimix leveling compounds when applying in two layers. Double priming of extremely absorbent substrates, such as gypsum leveling compounds, mud beds, etc., where the first priming should be thinned 1:5 and the second 1:3. The first priming doesn't need to dry before the second priming is done. One priming normally suffices on normal concrete surfaces, where the primer is thinned 1:3. On substrates that are not of the absorbent type such as paint, epoxy, ceramic tiles, marble or cement mosaic the primer is thinned 1:1 and dilute Combimix PP600 Primer™ and water in a mixing pail, then add some powder and mix properly. Finally, apply the slurry to the substrate.

The primer solution should be distributed evenly over the floor surface and then brushed into the substrate with a soft bristled push broom. Avoid pudding of primer. When applying with a pump sprayer, make sure to cover the substrate with an even coat to ensure proper penetration and follow immediately behind to work into the surface with a push broom. Tools and equipment can be cleaned with water. Note that dried PP600 Primer™ is very difficult to dissolve and any spills should immediately be cleaned up with water. The primer must dry before filling work begins. Drying time is 1 to 3 hours depending upon climate conditions.

curing and protection

Protect COMBIMIX leveling and topping compounds from excessive heat or draft conditions during their curing process. Turn off all forced ventilation and radiant heating systems. Protect for up to 24 hours after completed installation. Reference respective product technical data sheets for walkable and curing times. Protect from freezing.

cleaning

Clean hands and tools with water before material hardens. Material hardened will need to be mechanically removed.

technical information

Based on 73°F (23°C) and 50% relative humidity

Drying Time ..... 1-3 hours
Coverage ..... reference charts under mixing
Packaging ... 0.26 gal (1 L); 1.3 gal (5 L), 6.6 gal (25 L); 256 gal (1,000 L) units
Shelf Life .... >24 months when stored unopened. Protect from freezing.
Health and Safety ..... reference product MSDS

notice

Information contained herein or otherwise administered by COMBIMIX or its affiliates is based on current and present knowledge of products when used under normal circumstances and according to COMBIMIX recommendations. Before using product, user will determine suitability of product for its intended use and assumes all related risks, responsibility and liability.

Combimix Inc.
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Combimix®

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

HEMICAL PRODUCT IDENTIFICATION:
PRODUCT ID . . . . . : WC75G
PRODUCT CLASS . . . . . : SOLVENT BASED AEROSOL ADHESIVE
TRADE NAME . . . . . : AEROSOL ADHESIVE

MSDS prepared for:

PLUNKETT DISTRIBUTION
1010 SOUTH Y STREET

FT SMITH AR 72901

Attn:

MANUFACTURER IDENTIFICATION:
NAME . . . . . : IMPERIAL ADHESIVES, INC
ADDRESS . . . . . : 6315 WIEHE ROAD
CINCINNATI OH 45237
TELEPHONE . . . . . : 513-351-1300
EMERGENCY CONTACT . . . . . : CHEMTREC
EMERGENCY TELEPHONE . . . . . : 1-800-424-9300

SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

1 Hydrocarbon Propellant
CAS# 68476-86-8
iquified Petroleum Gas
Propane/Isobutane mixture
PCT BY WT: 30-40 VAPOR PRESSURE: 3620.000 MMHG @ 68F LEL 1.80
EXPOSURE LIMIT:
ACGIH TLV-TWA 1000 ppm
OSHA PEL-TWA 1000 ppm
NIOSH REL-TWA 1000 ppm
OTHER LIMITS:
Exposure Limits as for Liquified Petroleum Gas (L.P.G.) CAS No. 68476-85-7
Isobutane 800ppm NIOSH REL-TWA
Propane 1000 ppm OSHA PEL-TWA

2 Propylene Oxide
CAS# 75-56-9
1,2-Epoxypropane
PCT BY WT: .2370
EXPOSURE LIMIT:
ACGIH TLV-TWA 2 ppm
OSHA PEL-TWA 100 ppm
NIOSH REL-TWA lowest feasible conc.; (LOQ 8.4 ppm)
OTHER LIMITS:
Hazardous Air Pollutant (HAP)
Carcinogen: IARC-2A, NTP-2B, NIOSH-X

3 Methylene Chloride
CAS# 75-09-2
Dichloromethane

PRODUCT ID: WC75G TRADE NAME: AEROSOL ADHESIVE

PCT BY WT: 47.2060 VAPOR PRESSURE: 355.000 MMHG @ 68F LEL 13.00

EXPOSURE LIMIT:

ACGIH TLV-TWA	50 ppm
OSHA PEL-TWA	25 ppm
OSHA PEL-STEL	125 ppm
NIOSH REL-TWA	lowest feasible conc.

OTHER LIMITS:
Hazardous Air Pollutant (HAP)
Carcinogen: IARC-2B, NTP-2B,
OSHA-X, NIOSH-X

****
This product contains one or more reported Carcinogens or suspected Carcinogens which are noted NTP, IARC, or OSHA in the OTHER LIMITS column above.
****
****
This product contains one or more components that are classified as Hazardous Air Pollutants (HAP) and are noted as such in the OTHER LIMITS column above.
****

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:
DANGER! Compressed flammable gas. Vapors can cause flash fire. Product is a solvent based aerosol adhesive containing highly flammable propellant under pressure. Container may explode if exposed to heat or flame. Spray mist may ignite. Keep away from heat, flames, and other sources of ignition (e.g. static electricity, pilot lights, mechanical/electrical equipment). Can cause eye, skin, and respiratory tract irritation. Overexposure can cause central nervous system depression. Exposure to liquid propellant may cause frostbite. Use ventilation adequate to keep exposures below legal and recommended exposure limits (see section 2). Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Wash thoroughly after handling. Toxic fumes are released in fire situations. Contain spilled liquid to prevent contamination of soil, surface water or ground water.

POTENTIAL HEALTH EFFECTS:
For short term overexposure

EYE:
Can cause irritation. Symptoms may include stinging, burning, tearing, redness, and swelling.

SKIN:
Can cause irritation. Symptoms may include redness, burning, drying, inflammation (dermatitis), and burns. Material may be absorbed through the skin from prolonged contact.

INHALATION:
Can cause irritation of nose, throat, airways. High concentrations may cause central nervous system depression with symptoms of dizziness, headache, nausea, confusion.

INGESTION:
Can cause irritation of the mouth, throat, and gastrointestinal tract. Symptoms may include abdominal pain, nausea, vomiting, diarrhea. Aspiration of material into the lungs may cause chemical pneumonitis which can be fatal.

TARGET ORGAN/CHRONIC EFFECTS:
For repeated overexposure

Reports have associated repeated and prolonged occupational overexposure to organic solvents with various neurotoxic effects including permanent brain and nervous system damage. Symptoms include loss of memory,loss of intellectual ability and loss of coordination. Chronic skin exposure to solvents may cause similar effects. Intentional misuse by deliberately concentrating and inhaling the contents of this product may be harmful or fatal.

Overexposure to methylene chloride can raise the level of carbon monoxide in the blood causing cardiovascular stress.
Overexposure to methylene chloride has been suggested as a cause of the following effects in laboratory animals: kidney damage,liver damage. Pre-existing disorders of the following organs (or organ systems) may be aggravated by exposure to methylene chloride: liver, kidney and any pre-existing condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemias. Methylene chloride has been shown to cause harm to the fetus in laboratory animal studies. Harm to the fetus occurs only a exposure levels that harm the pregnant animal. The relevance of these findings to humans is uncertain.

Chronic exposure to hydrocarbon propellant (propane/isobutane mixture) may cause dizziness, weakness, peripheral numbness, and nervousness.

CARCINOGENICITY:
This product contains the following components in quantities greater than or equal to 0.1% by weight that are listed as proven or suspect carcinogens by IARC, NTP, or OSHA:

Methylene chloride has been shown to cause cancer in laboratory animals and has been listed as a possible human carcinogen (Group 2B) by IARC and as a substance that "may reasonably be anticipated to be a carcinogen" by NTP.

Propylene oxide has been listed as a probable human carcinogen (Group 2A) by the IARC based upon sufficient evidence from laboratory animal test data. The NTP has listed propylene oxide as a substance that "may reasonably be anticipated to be a carcinogen."

other ignition source. This can occur at vapor concentrations ranging from 13% to 23% by volume in air.

Flammability Classification	1A DOT: Flammable Gas
Flashpoint.	-156F (Propellant)
Flame extension and Flashback	>24 inches, No Flashback
Flammable/Explosive Limits.	Lower 1.8 % Volume in Air
	Upper 23.0 % Volume in Air
Auto-ignition Temperature	761F (Propellant)

EXTINGUISHING MEDIA:
Water fog, carbon dioxide, dry chemical

FIRE-FIGHTING PROCEDURES AND EQUIPMENTS:
Wear a self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment.

Water may be used to keep fire-exposed containers cool to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat. Avoid spreading burning liquids with water used for cooling purposes. In case of container rupture, ventilate area to prevent propellant vapor concentrations from reaching flammable levels. Fire protection and fire response strategy should be planned through consultation with local fire protection authorities or appropriate specialists.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

CONTAINMENT AND CLEAN-UP:
Eliminate all ignition sources such as flames (including pilot lights), electrical sparks, etc. Stop spill at source. Contain spilled liquid with sand, earth, vermiculite or other inert absorbent material. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and other bodies of water. If run-off occurs notify authorities as required.

Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Depending on the size of the spill, pump or vacuum transer spilled product to clean container for recovery and transfer contaminated absorbent to appropriately marked waste container for disposal.

SECTION 7 - HANDLING AND STORAGE

HANDLING:
Handle with reasonable care. Avoid breathing vapors and spray mist. Avoid eye contact and repeated or prolonged skin contact. Do not spray near heat, sparks or open flames. Do not smoke while

PRIMARY ROUTE(S) OF ENTRY:
Inhalation, eye contact, skin contact

SECTION 4 - FIRST AID MEASURES

EYE CONTACT:
Flush eyes gently with water for at least 15 minutes while holding eyelids apart. Get medical attention.

SKIN CONTACT:
Wash exposed skin area with soap and water. Consult physican if irritation persists. Launder contaminated clothing before reuse.

INHALATION:
Remove individual to fresh air. If breathing is difficult administer oxygen. If breathing has stopped begin artificial respiration. Seek immediate medical attention.

INGESTION:
Do not induce vomiting. Seek immediate medical attention.

NOTE TO PHYSICIAN:
Any treatment that might be required for overexposure should be directed at the control of symptoms and the clinical condition.

Exposure may increase "myocardial irritability." Do not administer sympathomimetic drugs unless absolutely necessary.

SECTION 5 - FIRE FIGHTING MEASURES

FIRE AND EXPLOSIVE PROPERTIES OF THE CHEMICAL:
This product contains non-flammable chlorinated solvent and extremely flammable propellant. Material is highly volatile and vapors are heavier than air. Vapors will accumulate readily and propellant vapors may ignite explosively. Vapors may travel along the ground or may be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electric motors, static discharge or other ignition sources at locations distant from material handling point. Container contents under pressure. Exposure of container to high temperatures may cause container to burst releasing the highly flammable propellant. Exposure of container to fire conditions may cause the container to explode with product ignition.

This product should not be used where inadequate ventilation is likely or where vapor concentrations may become flammable.

Although methylene chloride has no flash point or fire point when tested by conventional means, vapors concentrated in a confined or poorly ventilated area can be ignited upon contact with a spark, flame or

using product. Keep work area ventilated during use and until vapors are all gone. Do not transfer product to unmarked container. Keep out of the reach of children. For industrial use only.

Vapors of this product are heavier than air and will collect in low areas such as pits, degreasers, storage tanks, and other confined areas. Do not enter these areas where vapors of this product are suspected unless special breathing apparatus is used and an observer is present for assistance.

Containers of this material may be hazardous when emptied. Because emptied containers retain product residues (vapor, liquid and/or solid), all hazard precautions given in the data sheet must be observed. Do not dispose of empty container in trash compactor.

STORAGE:

Keep product containers cool, dry, and away from sources of ignition. Use and store this product with adequate ventilation. Keep product containers tightly closed when not in use. Contents under pressure. Do not store above 120 Deg.F. Exposure to excessive heat could cause bursting of container. Avoid prolonged exposure to sunlight or heat from radiators, stoves, hot water and other heat sources.

Containers should be stored in a flammable liquid area in accordance with OSHA (29 CFR 1910.106 and 29 CFR 1910.110) and NFPA (NFPA 30 and 30B). Do not puncture or incinerate container. Do not use deformed containers as they may explode with violent force. Cool overheated containers if possible.

Product may corrode, degrade, or otherwise react with some metals and plastics upon prolonged contact. Consult with equipment supplier for proper construction materials for storage tanks, mixers, fittings, pipes and other storage and handling equipment.

SPECIAL COMMENTS:

Practice safe working procedures and good personal hygiene. Use protective equipment when necessary. Wash thoroughly after handling and before eating, drinking, smoking, or using toilet facilities.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

EYE PROTECTION:

Chemical splash goggles are advised. Consult with safety representative. Readily accessible eyewash stations and safety showers in work areas are recommended.

SKIN PROTECTION:

The use of chemical resistant gloves is recommended (consult with safety equipment supplier). If necessary, wear impervious clothing and boots.

RESPIRATORY PROTECTION:

If the TLV or PEL for the product or any component is exceeded in the workplace air (see Section 2), a NIOSH/OSHA approved respirator is advised. Engineering controls should be implemented to reduce exposure. See 29 CFR 1910.1052 for specific OSHA requirements for employee exposure to methylene chloride.

ENGINEERING CONTROLS:
Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure limit(s).

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Color	Green
Vapor Pressure	70.00 psig @ 70F
Vapor Density	2.93 Air = 1
Boiling Range	Lower 44.5- F Higher 104.0 F
Water Solubility	Negligible
Specific Gravity	.843
Density	7.0152 LB/GL
Evaporation Rate	14.500 (n-Butyl Acetate = 1)
Volatile (% Weight)	82.4539
Volatile (% Volume)	85.2681
VOC (% Weight)	35.2466
VOC (% Volume)	55.2796
VOC (less water and exempt solvent)	3.532 LB/GL
VOC (less water and exempt solvent)	423.23 GM/L
Static Electricity Explosion	Yes

SECTION 10 - STABILITY AND REACTIVITY

INCOMPATIBILITIES:
Avoid contact with:
- Strong acids (mineral acids)
- Strong bases (alkalies, caustics)
- Strong oxidizing agents
- Amines
- Reactive metals such as aluminum powders, magnesium powders, zinc powders, alkali metals such as sodium and potassium

DECOMPOSITION:
Hazardous combustion and decomposition products:
- Carbon monoxide and carbon dioxide
- Acrid (choking) smoke and fumes
- Hydrogen chloride, small amounts of phosgene and chlorine
- Various hydrocarbons
- Other unidentified organic compounds and toxic substances

CONDITIONS TO AVOID:
Avoid open flames, welding arcs, or other high temperature sources which induce thermal decomposition to irritating and corrosive hydrogen bromide from solvent vapor. High energy sources such as welding arcs can cause degradation generating bromine, hydrogen bromide and should be avoided.

Avoid contamination with water which can cause hydrolysis, producing corrosive hydrochloric acid. Prolonged contact with water while in the container may result in corrosion of the container.
Avoid prolonged contact with or storage in aluminum or its alloys.

POLYMERIZATION:
Product will not undergo hazardous polymerization.

STABILITY:
Stable under normal conditions of temperature and pressure.

SECTION 11 - TOXICOLOGICAL INFORMATION

No data for product.

For Methylene chloride:
Methylene chloride depresses the central nervous system. Vapor concentrations in the range of 500-1000 ppm may cause minimal anesthetic or narcotic effects. Progressively higher levels over 1000 ppm can cause dizziness and drunkenness. Nausea, headache, and vomiting can occur at concentrations above 2000 ppm. At 7000 ppm, numbness and tingling in arms and legs and rapid heartbeat have occurred. Loss of consciousness and death have occurred at levels above 9000 ppm, if exposure is prolonged.
Inhalation LC50: 14400 ppm - 7 hours (mouse)
Dermal LD50: Not determined
Oral LD50: 1600 mg/kg (rats)

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:
AQUATIC TOXICITY: No information is available for product.
DO NOT DISCHARGE TO STREAMS, LAKES, PONDS OR SEWERS.

ENVIRONMENTAL FATE:
No data for product.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:

MATERIAL SAFETY DATA SHEET

PRODUCT ID: WC75G TRADE NAME: AEROSOL ADHESIVE

Do not flush to sewer. Dispose of in accordance with all applicable federal, state or provincial, and local laws and regulations. RCRA hazardous material 40 CFR PART 260 et.seq.

SECTION 14 - TRANSPORT INFORMATION

DOT HAZARD CLASS: 2.1
DOT PACKAGING GROUP:

SECTION 15 - REGULATORY INFORMATION

FEDERAL REGULATIONS:
TSCA (U.S. Toxic Substances Control Act) Status:
The intentional ingredients of this product are listed.

SARA 313 INFORMATION:
This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

1,2-Epoxypropane
CAS# 75-56-9 PCT BY WT: .2370

Dichloromethane
CAS# 75-09-2 PCT BY WT: 47.2060

STATE REGULATIONS:
The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986:

WARNING: This product contains a chemical(s) known to the state of California to cause cancer.

INTERNATIONAL REGULATIONS:
No data available for product.

SECTION 16 - OTHER INFORMATION

Regulatory Manager. . . . . : Joseph Salib
MSDS Prepared by. . . . . : Dennis Sanders
MSDS Print Date . . . . . : 02/05/2002
MSDS Revision Number : 3
MSDS Revision Date. . . . . : 01/11/2002

HMIS Information:
Health- 2*
Flammability- 4
Reactivity- 0

MATERIAL SAFETY DATA SHEET

PRODUCT ID: WC75G TRADE NAME: AEROSOL ADHESIVE

DISCLAIMER OF WARRANTY AND OTHER COMMENTS:

This document has been prepared in accordance with the requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200. The information contained herein is, to the best of our knowledge and belief, accurate. However, because the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all federal, state, and local laws and regulations.

The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and to develop work practice procedures for a safe work environment.

ABBREVIATIONS:

ACGIH:	American Conference of Governmental & Industrial Hygienists.
OSHA:	Occupational Safety & Health Administration
NIOSH:	National Institute for Occupational Safety and Health
IARC:	International Agency for Research on Cancer
NTP:	National Toxicology Program
TLV:	Threshold Limit Value (ACGIH)
PEL:	Permissible Exposure Limit (OSHA)
TWA:	Time Weighted Average
STEL:	Short Term Exposure Limit
ppm:	parts per million
mg/cum:	milligrams per cubic meter of air
N/D	Not Determined
N/A:	Not Applicable
HMIS:	Hazardous Materials Identification System

Material Safety Data Sheet

Prefinished Hardwood Plywood Wall Panel - Chesapeake

#4

1 PRODUCT IDENTIFICATION

Manufacturer Name and Address

Product Name: Prefinished Hardwood Plywood Wall Panel
Synonym(s): Decorative Wall Furnishings, Wall Coverings

Date MSDS Prepared: 4/28/95
Supersedes MSDS Date: 7/21/95
MSDS Prepared By: Technical Services

2 HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Chemical or Common Name/CAS#	Percent	Exposure Limits
Hardwood Ply Veneers (a) CAS# None	88-96	OSHA PEL-TWA 5 mg/m³ (a) OSHA PEL-STEL 10 mg/m³ (a) OSHA PEL-TWA 1.5 mg/m³ (b) ACGIH TLV-TWA 5 mg/m³ (c) ACGIH TLV-STEL 10 mg/m³ (c) ACGIH TLV-TWA 1 mg/m³ (d)
Resin Solids Urea-formaldehyde CAS# 50-0-0	3 - 7	OSHA PEL-TWA 0.75 mg/m³ (e) OSHA PEL-STEL 2.00 mg/m³ (e) ACGIH TLV-TWA 0.30mg/m³ (e)
Inert Filler - Wheat CAS# None	3 - 4	OSHA PEL-TWA None ACGIH TLV-TWA None
Water-based Acrylic Latex CAS# None	<1	OSHA PEL-TWA None ACGIH TLV-TWA None

(a) softwood or hardwood total dust
(b) western red cedar total dust
(c) softwood total dust
(d) selected hardwood total dust beech, oak
(e) free gaseous formaldehyde

The wood components may consist of alder, aspen, beech, birch, cottonwood, fir, gum, hemlock, hickory, lauan, maple, oak, pecan, pine, poplar, spruce, walnut, western red cedar, meranti, lauan and/or Philippine mahogany.

Appearance and Odor:
Three ply veneer plywood product with slightly aromatic odor.

3 PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT (F or C):	NA
VAPOR PRESSURE (mm Hg):	NA
VAPOR DENSITY (AIR = 1)	NA
SPECIFIC GRAVITY (H_2O = 1)	0.46 - 0.80
MELTING POINT (F or C):	NA
EVAPORATION RATE (BUTYL ACETATE = 1)	NA
SOLUBILITY IN WATER:	<0.1%
% VOLATILE BY VOLUME @ 75°F	NA

4 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: NA
FLAMMABLE LIMITS:
LEL: See below "Unusual Fire and Explosion Hazards"
UEL: NA

EXTINGUISHING MEDIA: Water, carbon dioxide, sand.

AUTOIGNITION TEMPERATURE: 400-500°F

SPECIAL FIREFIGHTING PROCEDURES: Use water to wet down wood dust to reduce dusty conditions. Remove burned, charred, or wet dust in open secure area after fire is extinguished.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Depending on moisture content and, more importantly, particle diameter, wood dust may explode. An airborne concentration of 40 grams (40,000 mg) of dust per cubic meter of air is often used as the LEL for wood dust.

5 REACTIVITY DATA

Stability:
( ) Unstable (x) Stable
Conditions To Avoid: NA

Incompatibility (Materials to Avoid):
Avoid contact with oxidizing agents. Avoid open flame. Product may ignite at temperatures in excess of 400°F.
Hazardous Decomposition or By-products:
Thermal decomposition products include carbon monoxide, carbon dioxide, aliphatic aldehydes, resin acids, terpenes, and polycyclic aromatic hydrocarbons.
Hazardous Polymerization:
( ) May Occur (x) Will Not Occur
Conditions To Avoid: NA

6 PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled:
Not applicable for product in purchased form. Wood dust generated from sawing, sanding, drilling, or routing of this product may be vacuumed or shoveled for recovery or disposal. Avoid dusty conditions and provide good ventilation. Use NIOSH/MSHA-approved respirator and goggles where ventilation is not possible.

Waste Disposal Method:
If disposed of or discarded in its purchased form, incineration is preferable. Dry land disposal is acceptable in most states. It is however, the user's responsibility to determine at the time of disposal whether your product meets RCRA criteria for hazardous waste. Follow applicable federal, state, or local regulations.

Precautions to be Taken in Handling and Storage:
No special handling precautions are required. Keep in cool, dry place away from open flame. This product may release small amounts of gaseous formaldehyde. Store in a well ventilated area.
where the allowable exposure limits may be exceeded.

Other Precautions:
A NIOSH/MSHA approved respirator and goggles should be worn when the allowable exposure limits may be exceeded.

7 HEALTH HAZARD DATA

Routes of Entry:
(1) Ingestion
(2) Skin: Dust
(3) Inhalation: Dust, gas

Acute Health Hazards: Signs and symptoms of exposure, emergency and first aid procedures:
INGESTION: Not applicable under normal use.
EYE CONTACT:
Wood dust may cause mechanical irritation.
Treat dust in eye as foreign object. Flush with water to remove dust particle. Get medical attention if irritation persists.
SKIN CONTACT:
Gaseous formaldehyde or wood dust of certain species may cause allergic contact dermatitis in sensitized individuals. Wood dust may also mechanically irritate the skin and cause erythema and rash.
Get medical help if rash, irritation, or dermatitis persists.
SKIN ABSORPTION
Not known to occur under normal use.
INHALATION:
Gaseous formaldehyde may cause temporary irritation to the nose or throat. Wood dust may cause nasal passage obstruction in nasal passages, resulting in dryness of nose, dry cough and hoarseness. Remove to fresh air. Get medical help if persistent irritation, severe coughing, or breathing difficulty occurs.

Medical Conditions Generally Aggravated by Exposure:
Gaseous formaldehyde or wood dust may aggravate pre-existing respiratory conditions or allergies.

Chronic Health Hazards:
Gaseous formaldehyde has been shown to cause cancer in certain laboratory animals when long-term exposure to very high concentrations (10+ppm) far above those normally find in the workplace with this Wood product, depending on the species (for example, rats, mice, hamsters), may cause allergic contact dermatitis with prolonged exposure to elevated dust levels (for example, western cedar). Wood dust has been alleged to cause nasal/paranasal sinus cancer (certain European hardwoods: oak and beech).

Carcinogenicity Listing:
(1) National Toxicology Program — Formaldehyde
(2) IARC Monographs — Formaldehyde
(3) OSHA Regulated — Formaldehyde

8 CONTROL MEASURES

Personal Protective Equipment:
RESPIRATORY PROTECTION:
Not applicable for product in purchased form. A NIOSH/MSHA approved respirator and goggles are recommended when the allowable exposure limits may be exceeded.
PROTECTIVE GLOVES:
Not required. However, cloth, canvas, or leather gloves are recommended to minimize potential mechanical irritation from handling product.
EYE PROTECTION:
Not applicable for product in purchased form. Goggles or safety glasses are recommended when machining this product.
OTHER PROTECTIVE CLOTHING OR EQUIPMENT:
Not applicable for product in purchased form. Outer garments may be desirable in extremely dusty areas.
WORK/HYGIENIC PRACTICES:
Follow good hygienic and housekeeping practices. Clean up areas where dust settled to avoid excessive accumulation of this combustible material. Minimize blowdown or other practices which generate high airborne dust concentrations.
Ventilation:
LOCAL EXHAUST:
Provide local exhaust as needed so that exposure limits are met.
MECHANICAL (GENERAL):
Provide general ventilation in processing and storage areas as needed so that exposure limits are met.
SPECIAL:
Self-contained breathing apparatus (SCBA) recommended when fighting fire.
OTHER: NA

9 USER'S RESPONSIBILITY

This may be an imported product for which [illegible] has been unable to obtain an MSDS from the manufacturer, and the above information was prepared from current available information and based on the manufacturing processes and physical properties of similar materials manufactured in this country. The information provided comes from sources believed to be accurate or otherwise technically correct. There is no reason, at this time, to believe that the imported product contains any other materials than those listed above.
It is the user's responsibility to determine if this information is suitable for their applications and to follow safety procedures as may be necessary. The user has the responsibility to make sure that this sheet is the most up-to-date issue.

10 ADDITIONAL INFORMATION

Definition of Common Terms:
ACGIH = American Conference of Gov. Industrial Hygienists
CAS# = Chemical Abstracts Service number
IARC = International Agency for Research on Cancer
LEL/UEL = Lower/Upper Explosion Limit
MSHA = Mining Safety and Health Administration
NA = Not Available/Not Applicable
NIOSH = National Institute for Occupational Safety and Health
OSHA = Occupational Safety and Health Administration
PEL = Permissible Exposure Limits
RCRA = Resource Conservation and Recovery Act (1976)
STEL = Short-Term Exposure Limit
TLV = Threshold Limit Value
TWA = Time-Weighted Average

#2

COLOR RITE™
INCORPORATED

Material Safety Data Sheet

Complies with OSHA'S Hazard Communication
Standard 29 CFR 1910.1200 / HMIS: 0 E: 0 R: 0 P: 0
Identity: Color Rite Sealant Adhesive Caulk

Section I

Color Rite, Inc.
600 S. Ranchwood Blvd.
Yukon, OK. 73099
(405) 354 -3644
Date Prepared: Sept. 2, 1997

Section II - Hazardous Ingredients / Identity Information

Component: ACGIH TLV/OSHA PEL less than % CAS number

This product contains toxic chemicals, marked by an asterisk (*), subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372
*Ethylene glycol 50ppm/NE 2% 107-21-1

Section III - Physical / Chemical Characteristics

Boiling Point (deg F): >212 degrees F
Specific Gravity (Water-1): 1.06
Vapor Pressure (mm Hg): n/a
Vapor Density (Air =1): n/a
Melting Point (deg F): Unknown
pH: 7.9
Evaporation Rate (Butyl Acetate-1): Slower than.
Solubility in Water: Soluble.
Appearance and Odor: Colored semi-solid, slight ammonia odor.

Section IV - Fire and Explosion Hazards

Flash Point (Method Used) (deg F): Unknown
Flammable Limits LEL: Unknown UEL: Unknown
Extinguishing Media: Carbon dioxide, foam, dry chemical, water.

Special Fire Fighting Procedures: Self-contained breathing apparatus in positive pressure mode and full protective gear should be worn.

Unusual Fire and Explosion Hazards: Irritating or toxic gases and aerosols may be produced during burning.

Section V - Reactivity Data

Stability: Stable.
Conditions to avoid: None
Incompatability (Materials to Avoid): None
Hazardous Decomposition or Byproducts: Carbon dioxide, CO.
Hazardous Polymerization Risk: None
Conditions to Avoid: None

Section VI - Health Hazard Data

Route(s) of Entry: Skin, inhalation, ingestion.
Symptoms of Exposure: Dizziness, breathlessness, drowsiness, nausea.

Emergency First Aid Procedures: Do not ingest. If swallowed, do not induce vomiting. If product comes in contact with eyes, flush with water for 15 minutes. Contact physician. Avoid prolonged skin contact. Wash affected areas with soap and water.

Medical Conditions Aggravated by Exposure: None known.
Carcinogenicity: Not carcinogenic.

Section VII - Precautions for Safe Handling and Use

Steps To Be Taken In Case Material is Spilled or Released: Scrape into containers and dispose of in accordance with local, state, and federal regulations.

Waste Disposal Method: Sanitary landfill.

Handling and Storage Precautions: Do not store near heat sources, sparks, or flame. Store between 40 deg and 120 deg F. Do not freeze.

Other Precautions: Do not ingest. Keep away from children. Wash skin and hands after use.

NOT FOR UNDERWATER USE.

Section VIII - Control Measures

Respiratory Protection: NIOSH approved cartridge respirator required if vapors exceed TLV. Use only in well ventilated areas.

Local Exhaust: At level adequate to keep vapor below TLV.
Protective Gloves: Not required.
Eye Protection: Normal precaution.
Hygenic Practices: Wash skin and hands after use. **VOC:** 5 grams/liter

Concrete

MATERIAL SAFETY DATA SHEET
For
CONCRETE/CONCRETE PRODUCTS
(Wet unhardened concrete and dry hardened concrete products such as block, pipe, and precast concrete)

Chandler Concrete Company, Inc.

Section 1: PRODUCT AND COMPANY INFORMATION

Product Name(s):	Ready Mixed Concrete (Concrete)
Product Identifiers:	Ready Mixed Concrete, Concrete Ready Mix, Portland Cement Concrete, Ready Mix Grout, Permeable Concrete, Shotcrete, Gunite, Colored Concrete, Flowable Fill, Roller-Compacted Concrete, Fiber Reinforced Concrete
Manufacturer:	**Information Telephone Number:**
Chandler Concrete Company, Inc.	336-226-1181 (8am to 5pm EST)
1006 S Church St.	**Emergency Telephone Number:**
Burlington, NC 27216	336-260-2416
Product Use:	Concrete is widely used as a structural component in construction applications.
Note:	This MSDS covers many types of Concrete. Individual composition of hazardous constituents may vary between types of Concrete.

Section 2: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components (Chemical Identity / Common Names)	CAS No.	OSHA PEL	ACGIH TLV	MSHA PEL	%
Portland Cement	65997-15-1	15mg/m³ (Total) 5mg/m³ (Respirable)	10mg/m³ (Total)	10mg/m³ (Total)	10-30%
Granite *North Carolina Product*	None	N/A	N/A	N/A	0-65%
Limestone – *Virginia Product* (CaCo3) (Calcium carbonate, present, if limestone aggregates are used)	1317-653	15 mg/m³ (Total)	10 mg/m³ (Total)	10 mg/m³	0-65%
Crystalline Silica (Quartz) (Concrete aggregates may contain silica)	14808-60-7	30 (%SiO^2+2)mg/m³ (Total Particulate) 10/(%SiO^2+2)mg/m³ (Respirable Particulate)	0.1mg/m³ (Total) (Respirable quartz)	30 (%SiO^2+2)mg/m³ (Total) 10/(%SiO^2+2)mg/m³ (Respirable)	0.5-80%
Water	N/A	N/A	N/A	N/A	15-25%
Fly Ash which contains:	68131-74-8	N/A	N/A	N/A	1-4%
Aluminum Oxide (Al_2O_3)	1344-28-1	15mg/m³ (Total) 5mg/m³ (Respirable)	10mg/m³	10mg/m³	0.1-2%
Amorphous Silica	61790-53-2	80mg/m³ /(%SiO^2)	10mg/m³ (Total) 3mg/m³ (Respirable)	20mppcf	0.01-3%
Calcium Oxide (CaO)	1305-78-8	5mg/m³	2mg/m³	5mg/m³	0-1%
Iron Oxide (as Fe_2O_3)	1309-37-1	10mg/m³	10mg/m³	10mg/m³	0.1-2%

Note: Chemical admixtures may be present in quantities less than 1%. Information on specific aggregates, cementitious materials and admixtures will be provided by the supplier upon request.

Section 3: HAZARD IDENTIFICATION

WARNING

Corrosive-Causes severe burns.

Toxic-Harmful by inhalation.

(Contains crystalline silica)

Use proper engineering controls, work practices, and personal protective equipment to prevent exposure to wet or dry product.

Read MSDS for details.

Emergency Overview:	Unhardened concrete is an odorless semi-fluid, flowable, granular paste of varying color and texture. It is not combustible or explosive. Exposure of sufficient duration to wet concrete can cause serious, potentially irreversible tissue (skin, eye, respiratory tract) damage due to chemical (caustic) burns, including third degree burns.
Potential Health Effects:	
Eye Contact (acute):	Concrete may cause immediate or delayed irritation or inflammation. Eye contact with wet concrete can cause moderate eye irritation, chemical burns and blindness. Eye exposures require immediate first ad and medical attention to prevent significant damage to the eye. Direct contact can cause irritation before mechanical abrasion.
Skin contact (acute):	Wet unhardened concrete and concrete dust may cause dry skin, discomfort, irritation, severe burns, and dermatitis.
Burns:	Exposure of sufficient duration to wet unhardened concrete can cause serious, potential irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns. A skin exposure may be hazardous even if there is no pain or discomfort.
Dermatitis:	Wet unhardened concrete is capable of causing dermatitis by irritation and allergy. Skin affected by dermatitis may include symptoms such as redness, itching, rash, scaling, and cracking.
Sensitization:	Allergic contact dermatitis is caused by sensitization to hexavalent chromium (chromate) present in concrete. The reaction can range from a mild rash to severe skin ulcers. Persons already sensitized may react to the first contact with wet unhardened concrete. Others may develop allergic dermatitis after years of repeated contact with wet concrete.
Ingestion:	Expected to be practically non-toxic. Ingestion of large amounts may cause gastrointestinal irritation and blockage.
Inhalation (general):	May result, depending on the degree of the exposure, from exposure to dust generated from cutting, grinding, crushing, or driving hardened concrete.
Inhalation (acute):	Breathing dust may cause nose, throat lung or mucous membrane irritation, including choking. Inhalation of high levels of dist can cause chemical burns to the nose, throat and lungs.
Inhalation (chronic):	Risk of injury depends on duration and level of exposure.
Silicosis:	This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica from this product can cause silicosis, and other seriously disabling and fatal diseases.
Carcinogenicity:	Concrete is not listed as a carcinogen by IARC or NTP; however, concrete contains trace amounts of crystalline silica and hexavalent chromium which are classified by IARC and NTP as known human carcinogens.
Autoimmune Disease:	Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys.
Medical conditions Aggravated by Exposure:	Individuals with lung disease (e. g. bronchitis, emphysema, COPD, pulmonary disease) can be aggravated by exposure to concrete dust.

Section 4: FIRST AID MEASURES

Eye Contact:	Rinse eyes thoroughly with water for at least 15 minutes, including under lids, to remove all particles. Seek medical attention for abrasions and burns.
Skin Contact:	Wash with cool water and a pH neutral soap or a mild skin detergent. Seek medical attention for rash, burns, irritation, dermatitis, and prolonged unprotected exposures to wet concrete.
Inhalation:	Move person to fresh air. Seek medical attention for discomfort or if coughing or other symptoms do not subside.
Ingestion:	Do not induce vomiting. If conscious, have person drink plenty of water. Seek medical attention or contact poison control center immediately.

Section 5: FIREFIGHTING MEASURES

Flashpoint & Method:	Non-combustible, concrete poses no fire related hazard.
Combustion Products:	None.

Section 6: ACCIDENTAL RELEASE MEASURES

General:	Place spilled material into a contained area and then allow material to dry or solidify before disposal. Avoid contact with skin. Wear appropriate protective equipment as described in Section 8. Do not wash concrete down sewage and drainage systems or into bodies of water (e.g. lakes, streams, wetlands, etc.).
Waste Disposal Method:	Dispose of concrete according to Federal, State, Provincial and Local regulations.

Section 7: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Handling:	When cutting, grinding, crushing or drilling hardened concrete, use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits.
Engineering Controls:	Supplemental controls are not required when working with wet/unhardened concrete.
Personal Protective Equipment (PPE):	
Respiratory Protection:	When working with wet, unhardened concrete under ordinary conditions, no respiratory protection is required. When working with hardened concrete, wear a NIOSH approved respirator that is properly fitted and is in good condition when exposed to dust above exposure limits.
Eye Protection:	Wear ANSI approved glasses with side shields or safety goggles when handling concrete to prevent contact with eyes. Wearing contact lenses is not recommended.
Skin Protection:	Wear gloves, boot covers and protective clothing impervious to water to prevent skin contact. Do not rely on barrier creams, in place of impervious gloves.
Clothing:	Remove clothing and protective equipment that becomes saturated with wet concrete and immediately wash exposed areas.

Section 8: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Semi-fluid, Flowable, granular substance	**Evaporation Rate:**	NA.
Appearance:	Variety of Color (usually gray)	**PH (in water):**	12-13
Odor:	Slight to none	**Boiling Point:**	NA
Vapor Pressure:	NA.	**Freezing Point:**	<32°F (unhardened)
Vapor Density:	NA.	**Viscosity:**	Varies.
Specific Gravity:	1.9-2.4	**Solubility in Water:**	Slightly (0.1-1.0%)

Section 9: STABILITY AND REACTIVITY

Stability:	Hardened concrete is stable. Wet unhardened concrete is alkaline
Incompatibility:	Wet unhardened concrete is alkaline and is incompatible with acids, ammonium salts and aluminum, copper and some other metals (verify compatibility prior to incorporating with product). Concrete dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement in concrete reacts with water to form silicates and calcium hydroxide. These silicates react with powerful oxidizers.
Hazardous Polymerization:	**Hazardous Decomposition**: None.

Section 10 and 11: TOXICALOGICAL AND ECOLOGICAL INFORMATION

For questions regarding toxicological and ecological information refer to contact information in Section 1.

Section 12: DISPOSAL CONSIDERATIONS

Dispose of excess material in compliance with applicable Federal, State, Provincial and Local regulations.

Section 13: TRANSPORT INFORMATION

This product is not classified as a Hazardous Material under U.S. DOT or Canadian TDG regulations.

Section 14: REGULATORY INFORMATION

OSHA/MSHA Hazard Communication:	This product is considered by OSHA/MSHA to be a hazardous material and should be included in the employer's hazard communication program.
CERCLA/SUPERFUND:	This product is not listed as a CERCLA hazardous substance.
EPCRA SARA Title III:	This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 and is considered a hazardous and a delayed health hazard.
EPCRA SARA Section 313:	This product contains none of the substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
RCRA	If discarded in its hardened form, this product would not be a hazardous waste either by listing characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.
TSCA:	Portland Cement and crystalline silica are exempt from reporting under the inventory update rule.
California Proposition 65:	Crystalline silica (airborne particulates of respirable size) and Chromium (hexavalent compounds) are substances known by the State of California to cause cancer.
WHMIS/DSL:	Products containing crystalline silica and calcium carbonate are classified as D2A, E and are subject to WHMIS requirements.

Section 15: OTHER INFORMATION

Abbreviations:

<	Less than	NFPA	National Fire Protection Association
ACGIH	American Conference of Governmental Industrial Hygienists	NIOSH	National Institute for Occupational Safety and Health
CAS no	Chemical Abstract Service number	NTP	National Toxicology Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	OSHA	Occupational Safety and Health Administration
CFR	Code for Federal Regulations	PEL	Permissible Exposure Limit
CL	Ceiling Limit	pH	Negative log of hydrogen ion
DOT	US Department of Transportation	PPE	Personal Protective Equipment
EST	Eastern Standard Time	RCRA	Resource Conservation and Recovery Act
HEPA	High-Efficiency Particulate Air	SARA	Superfund Amendments and Reauthorization Act
HMIS	Hazardous Materials Identification System	TDG	Transportation of Dangerous Goods
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
MG/M^3	Milligrams per cubic meter	TWA	Time Weighted Average (8 hour)
MSHA	Mine Safety and Health Administration	WHMIS	Workplace Hazardous Materials Information System
NA	Not Applicable		

This MSDS (Sections 1-15) was revised on June 10, 2008.

An electronic version of this MSDS is available at: www.chandlerconcrete.com under the MSDS Section.

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The information set forth herein is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside the concrete/concrete products producer CCCI control, the producer makes no warranties, expressed or implied, and assumes no liability in connection with any use of this information.

National Gypsum

Drywall

Material Safety Data Sheet

MSDS No: **GB-1003**

Gold Bond® BRAND XP® Gypsum Board

Date: July 1, 2009
Supersedes Date: May 22, 2006

1. PRODUCT AND COMPANY INFORMATION

Manufacturer Information:
National Gypsum Company
2001 Rexford Road
Charlotte, NC 28211

For Emergency Product Information Call:
Director Quality Services
(704) 551-5820 - 24 Hour Emergency Response
Website: www.nationalgypsum.com

Product Name: **XP® Gypsum Board ½" Regular**
XP® Gypsum Board ½" FSC
XP® Gypsum Board 5/8" FS

Use: Interior building walls, elevator shaft construction, Area Separation Wall Systems

Generic Descriptions: Article composite. XP Gypsum Board products consist of a fire resistant, moisture resistant gypsum core encased in a heavy moisture/mold/mildew resistant 100% recycled purple paper on face side and heavy mold/mildew-resistant liner paper on the back side.

2. HAZARDS IDENTIFICATION

Appearance and Odor: A gypsum core wrapped with paper. Composite material provides mildew protection. Surface finish will vary with product, no odor.

Contains no asbestos. HMIS Hazard Class No. 1, 0, 0.

Emergency Overview

Gold Bond® BRAND XP® Gypsum Board products do not present an inhalation, ingestion, or contact health hazard unless subjected to operations such as sawing, sanding or machining which result in the generation of airborne particulate. This product contains quartz (crystalline silica) as a naturally occurring contaminant. It is recommended that a NIOSH approved particulate respirator be worn whenever working with this product results in airborne dust exposure exceeding the prescribed limits.
(See Section 11 - Toxicological Information)

OSHA Regulatory Status

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

2. HAZARDS IDENTIFICATION (CONTINUED)

Potential Health Effects

Primary Routes of Entry: Inhalation, Dermal contact

Target Organs: Respiratory system, skin, eyes.

Inhalation: Acute exposure to airborne dust concentrations in excess of the PEL/TLV may result in coughing, dyspnea, wheezing, general irritation of the nose, throat, and upper respiratory tract, and impaired pulmonary function. Chronic exposures may result in lung disease (silicosis and/or lung cancer). (See Section 11 - Toxicological Information)

Exposures to respirable crystalline silica have not been documented during normal use of this product. However, good housekeeping practices and industrial hygiene monitoring is recommended when the potential for significant exposure exists.

Skin Contact: Continued and prolonged contact may result in dry skin. Contact with dust or glass fibers may produce itching, rash and/or redness. Repeated or prolonged exposure may result in dermatitis.

Eye Contact: Direct contact may cause mechanical irritation.

Ingestion: No known adverse effects. May result in obstruction or temporary irritation of the digestive tract.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-Number	Weight Percent
Calcium Sulfate Dihydrate (Gypsum)	10101-41-4	>85
Crystalline Silica (Quartz)	14808-60-7	<5
Cellulose (Paper Fiber)	9004-34-6	<10
Proprietary Additives	NA	<1

4. FIRST AID MEASURES

- **Inhalation:** Remove exposed individual to fresh air immediately. If breathing difficulty persists, seek medical attention.
- **Skin:** Flush and wash skin with soap and water. Utilize lotions to alleviate dryness if present. Seek medical attention if irritation persists.
- **Eye:** Immediately flush eyes with water for 15 minutes. Remove contact lenses (if applicable). Seek medical attention if irritation persists.
- **Ingestion:** Gypsum is non-hazardous and no harmful effects are expected upon ingestion of small amounts. Larger amounts may cause abdominal discomfort or possible obstruction of the digestive tract. Seek medical attention if problems persist.

5. FIRE FIGHTING MEASURES

Flammable Properties
- Not flammable or combustible
- NFPA Hazard Class No: 1/0/0

Extinguishing media
- Dry chemical, foam, water, fog or spray

Protection of firefighters
- Standard protective equipment and precautions

Fire and Explosion Hazards
- None

Hazardous Combustion Products
- None
- Above 1450°C, material can decompose and release sulfur dioxide (SO_2) and oxides of carbon.

6. ACCIDENTAL RELEASE MEASURES

Not applicable, as product is an article composite.

General recommendations:

- Wear appropriate Personal Protective Equipment. (See Section 8)
- Maintain proper ventilation.
- Pick-up larger pieces to avoid a tripping hazard. Return large pieces of damaged/scraped material for recycling. Sweep or vacuum remaining material into a waste container for disposal. Use a light water spray to minimize dust generation.
- Waste material is not a hazardous waste. Dispose of in accordance with applicable federal, state, and local regulations.

7. HANDLING AND STORAGE

- Avoid contact with eyes, skin and clothing.
- Wear recommended personal protective equipment when handling. (See Section 8)
- Avoid breathing dust.
- Minimize generation of dust.
- Utilize proper lifting techniques when moving product and employ mechanical/ergonomic assistance when possible (i.e. move with forklifts, hold in place with lifts) to minimize the risk of back injury.
- Store material in a cool, dry, ventilated area.
- Store panels flat to minimize damage and warping.
- Do not stack panels too high when storing to minimize the risk of falling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

	Exposure Limits	
Component	OSHA PEL (mg/m3)	ACGIH TLV (mg/m3)
Calcium Sulfate Dihydrate (Gypsum)	15 (T) 5 (R)	10 (T)
Crystalline Silica (Quartz)	0.1 (R)	0.025 (R)
Cellulose (Paper Fiber)	15 (T) 5 (R)	10 (T)
Proprietary Additives	NE	NE

T- Total Dust
R- Respirable Dust
NE- Not established

Engineering Controls

- Work/Hygiene Practices: The score and snap method of cutting is recommended. Sawing, drilling or machining will produce dust.
- Ventilation: Provide local and general exhaust ventilation to maintain a dust level below the PEL/TLV.
- Utilize wet methods, when appropriate, to reduce generation of dust.

Personal Protective Equipment

- Respiratory Protection: A NIOSH approved particulate respirator is recommended in poorly ventilated areas or if the PEL/TLV is exceeded. OSHA's 29 CFR 1910.134 (Respiratory Protection Standard) must be followed whenever work conditions require respirator use.
- Eye Protection: Safety glasses or goggles.
- Skin: Gloves, protective clothing and/or barrier creams may be utilized if conditions warrant.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: paper faced gypsum boards with white/gray core
Odor: None
Physical State: Solid
Ph: ~7
Solubility (H2O): 2.1 g/L @ 20°C
Boiling, Freezing, Melting Point: Not Applicable
Decomposition Temperature: 1450°C
Vapor pressure: Not Applicable
Vapor density: Not Applicable
Volatile organic compounds (VOC) content: Not applicable

Flammability: Not Applicable
Flash Point: Not Applicable
Upper/Lower explosive limits: Not applicable
Auto-ignition temperature: Not Applicable
Partition coefficient: n-octanol/water: Not applicable
Evaporation rate: Not Applicable
Molecular weight: 172.2 grams
Molecular formula: $CaSO_4.2H_2O$
Specific Gravity: 2.31 g/cc
Bulk Density: ~55 lb/ft3

10. STABILITY AND REACTIVITY

Chemical stability: Stable in dry environments.
Conditions to avoid: Contact with strong acids may result in generation of carbon dioxide.
Incompatibility: None
Hazardous decomposition: Above 1450°C gypsum will decompose to calcium oxide (CaO), with releases of sulfur dioxide (SO_2) and various oxides of carbon.
Hazardous polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Data presented is for the major component of this product: Gypsum (calcium sulfate dihydrate)

Human Data
There is no information on toxicokinetics, metabolism and distribution.

There have been reports of irritation to mucus membranes of the eyes and respiratory tract upon acute exposure to dusts in excess of the recommended limits.

Chronic exposure to crystalline silica (a naturally occurring contaminant in gypsum) in the respirable size has been shown to cause silicosis, a debilitating lung disease. In addition, the International Agency for Research on Cancer (IARC) classifies crystalline silica inhaled in the form of quartz or cristobalite from occupational sources as carcinogenic to humans, Group 1. The National Toxicology Program (NTP) classifies respirable crystalline silica as a substance which may be reasonably anticipated to be a carcinogen. OSHA does not regulate crystalline silica as a human carcinogen. Industrial hygiene monitoring to date has not identified any detectable respirable crystalline silica in dust sampling conducted during gypsum panel installation utilizing recommended procedures.

Animal Data
The acute oral toxicity study [OECD TG 420, Fixed dose procedure] of calcium sulfate dihydrate showed that this chemical did not cause any changes even at 2,000 mg/kg b.w. Therefore, the oral LD_{50} value was more than 2,000-mg/kg b.w. for female rats (Sprague-Dawley).

Calcium sulfate, dihydrate was not irritating to the skin of rabbits at 1, 24, 48 and 72 hours after removal of test patches [OECD TG 404]. There is no indication of skin sensitization in guinea pigs [OECD TG 406].

Invivo and *Invitro* studies for mutagenicity were negative.

Reproduction/Developmental Toxicity Screening Tests were negative.

12. ECOLOGICAL INFORMATION

This product does not present an ecological hazard to the environment.

Ecotoxicological Information
Toxicity studies performed with fish, aquatic invertebrates and aquatic plants showed no toxic effect.

Environmental Fate
Gypsum is a naturally occurring mineral. Biodegradation and/or bioaccumulation potential is not applicable.

13. DISPOSAL CONSIDERATIONS

- Dispose of according to Local, State, Federal, and Provincial Environmental Regulations.
- Recycle if possible.

14. TRANSPORTATION INFORMATION

- This product is not a DOT hazardous material
- Shipping Name: Same as product name
- ICAO/IATA/IMO: Not applicable

15. REGULATORY INFORMATION

All ingredients are included on the TSCA inventory.

Federal Regulations

SARA Title III: Not listed under Sections 302, 304, and 313
CERCLA: Not listed
RCRA: Not listed
OSHA: Dust and potential respirable crystalline silica generated during product use may be hazardous.

State Regulations
California Prop 65: Respirable crystalline silica is known to the state of California to cause cancer. Industrial hygiene monitoring during recommended use of this product failed to identify any respirable crystalline silica.

Canada WHMIS
All components of this product are included in the Canadian Domestic Substances List (DSL).
Crystalline silica: WHMIS Classification D2A

16. OTHER INFORMATION

MSDS Revision Summary

Effective Date Change:	5/22/06	Supersedes: 1/15/03
Format Changes:	ANSI Z400.1-2004	

Key/Legend

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Services Number
CFR	Code of Federal Regulations
DOT	Department of Transportation
EPA	Environmental Protection Agency
HEPA	High Efficiency Particulate Air
HMIS	Hazardous Material Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMO	International Maritime Organization
NIOSH	National Institute for Occupational Safety and Health
NFPA	National Fire Protection Association
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PPE	Personal Protective Equipment
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA	Time Weighted Average
WHMIS	Workplace Hazardous Materials Information System

16. OTHER INFORMATION (CONTINUED)

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind expressed or implied is made with respect to the information contained herein. This material safety data sheet was prepared to comply with the OSHA Hazard Communication Standard (29 CFR 1910.1200) and with the Workplace Hazardous Materials Information System (WHMIS).

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COMBUSTIBLE DUST

INTRODUCTION

This document provides fundamental background information on the risks associated with the overall combustibility of dust. The risks and precautionary actions required are unique to the materials handled and processes used by individual facilities. It is the responsibility of the facility owner to identify and address any issues as well as ensure compliance with all applicable rules and regulations.

This bulletin provides a brief overview of the risks associated with combustible dust and methods of addressing that risk. It is not intended to provide advice or recommendations regarding a particular facility. This bulletin is not intended as a comprehensive source of information. In many cases, it is advisable to contract skilled professionals to characterize any hazards, design and install proper equipment and ensure compliance with local regulations.

OVERVIEW

There is a growing awareness of the hazards of combustible dust. Fine dusts of many materials such as metal, wood, coal, plastic, biosolids, sugar, flour, paper, soap, and textiles can be ignited under the proper conditions. In general, the finer the particle size, the more ignitable. Solid surface fabrication operations such as cutting, routing, drilling, and sanding or dust collection systems used to collect fabrication waste may create particles that are small enough to be combustible. Other materials, in particular wood products, used in the fabrication of solid surface or commonly used in facilities that fabrication also may contribute to the presence of combustible dust.

A combustible dust explosion requires five elements: the presence of combustible dust, an ignition source, oxygen, dispersion of the combustible dust in sufficient quantity, and confinement of the dust cloud. A significant risk associated with dust explosions is that a small primary explosion can create a shockwave that disturbs a dust layer in the facility. The dust may become airborne, triggering a second, much larger explosion. Housekeeping is a primary component of any combustible dust control program.

Combustible dusts may be handled safely, either by making the dust noncombustible or by use of proper equipment.

COMBUSTIBLE DUST SAFETY PROGRAM

Dust Hazard Assessment

The first step is understanding what risk is present. Each facility is unique in regard to design and dust characteristics. Dust combustibility can vary widely, even for the same material, as size, shape and moisture content are all important in addition to composition. Different processes create different dust size distributions. Even dust from a single process such as sanding can vary based on grade of sand paper. As each facility is unique, it is important that the dust be sampled appropriately and tested for each facility. There are companies that specialize in this field that can provide dust sampling, testing, and dust handling equipment.

The facility design and equipment also affect the risk as processes, areas where dust can build up, collection devices, potential ignition sources, etc. all vary widely.

Dust Control

Key elements of dust control include collection methods that either make the dust noncombustible (wet or inert addition) or include design elements to safely manage combustible dust. Dust collection systems can be local to the equipment or a central system for a facility. Proper engineering is critical to prevent explosions and to control explosive energy in the case of an explosion.

Housekeeping is a key element. An inspection process should be implemented to check all places dust may accumulate, including floors, equipment, lighting. rafters, etc. Even vertical surfaces may accumulate a dust layer. Hidden locations such as suspended ceilings must also be inspected. The guideline for dust thickness is no more than $^{1}/_{32}$" (0.8 mm). This is about the thickness of a paper clip or pencil lead.

A quick method of evaluation is surface appearance. If dust hides the color of an object, it is likely that the dust exceeds thickness guidelines.

Once it has been determined that dust is present, it must be removed in a safe manner. Avoid methods that disperse dust, such as high-pressure air, as they may create an ignitable dust cloud.

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COMBUSTIBLE DUST

Ignition Control

Proper equipment and processes must be installed to eliminate ignition sources. Class II wiring and equipment may be required. Open flames, smoking and sources of sparks must be controlled. Heated surfaces and heating systems are also a potential source of ignition.

Training

Train employees to recognize and prevent hazards associated with combustible dust. Conduct periodic refresher training. Reassess the training content if hazards or processes change.

Management

In addition to training in the recognition and prevention of combustible hazards, management should conduct a facilities analysis as well as develop and implement a prevention and protection program. As many facilities may not have the appropriate knowledge, it is often advisable to contract companies that specialize in combustible dust to perform hazard analyses and develop prevention and protection systems.

It is important that changes to products, equipment, personnel, and processes be managed so that any new or modified hazards are identified and addressed.

Retain all documentation regarding hazard analysis, training, equipment design, etc. Regulatory bodies and insurance companies may request this information.

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Solid Surface Tops

Material Safety Data Sheet

Corian® Solid Surface Material

Version 2.0

Revision Date 04/26/2011 Ref. 130000000804

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Corian® Solid Surface Material
MSDS Number	:	130000000804
Manufacturer	:	DuPont Building Innovations 1007 Market Street Wilmington, DE 19898
Product Information	:	1-302-774-1000
Medical Emergency	:	1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency	:	CHEMTREC: 1-800-424-9300 (outside the U.S. 1-703-527-3887)
Other information	:	OSHA Hazard Communication Standard (29 CFR 1910.1200) requirements for Material Safety Data Sheets do not apply to this product. This product is excluded as an article. Information on potential hazards associated with product fabrication and/or installation are discussed in this datasheet.

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

The product as such is not hazardous. The hazards of this product are associated mainly with its processing. Operations such as sawing, routing, drilling and sanding can generate dust. WARNING! May form combustible dust concentrations in air (during processing). High concentrations of dust can irritate eyes, nose and respiratory system and cause coughing and sneezing. Corian® Solid Surface material does not emit gas at room temperature. At higher temperatures, small amounts of methyl methacrylate and butyl acrylate can be released. The amounts are dependent upon temperature, time and other variables.

Potential Health Effects

Additives in this product do not present a respiration hazard unless the product is ground to a powder of respirable size and the dust is inhaled. All dusts are potentially injurious to the respiratory tract if respirable particles are generated and inhaled.

Carcinogenicity

Material	IARC	NTP	OSHA

Titanium dioxide	2B
Carbon black	2B

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Solid Surface Material		100 %

Exposure limits may be applicable for the following :

Dust (inhalable and respirable fraction)		
Methyl methacrylate	80-62-6	
Butyl acrylate	141-32-2	

SECTION 4. FIRST AID MEASURES

Skin contact : No hazards which require special first aid measures.

Eye contact : Rinse thoroughly with plenty of water, also under the eyelids.

Inhalation : If large amounts of dust are inhaled, or if exposed to fumes from overheating or combustion, move to fresh air.

Ingestion : No hazards which require special first aid measures.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable Properties
Flash point : not applicable

Fire and Explosion Hazard : Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Hazardous combustion products Carbon monoxide Carbon dioxide (CO2) Methyl methacrylate monomer Aldehydes Butyl acrylate

Suitable extinguishing media : Water spray, Dry chemical, Carbon dioxide (CO2), Foam

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel) : No special precautions required.

Spill Cleanup : Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Nonsparking tools should be used.

Accidental Release Measures : No special environmental precautions required.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel) : Do not breathe dust. Do not breathe vapours or fumes that may be evolved during processing. Wash hands before breaks and at the end of workday. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.

Storage : No special storage conditions required.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required. Dust safety masks are recommended when the dust concentration is more than 10 mg/m3.

Hand protection : Additional protection: Wear leather or cotton gloves when grinding, sawing, routing, drilling or sanding.

Eye protection : Safety glasses

Exposure Guidelines

Exposure Limit Values

Dust (inhalable and respirable fraction)

PEL:	(OSHA)	5 mg/m3	8 hr. TWA Respirable fraction.
		Remarks	All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3.
PEL:	(OSHA)	15 mg/m3	8 hr. TWA Total dust.
TLV	(ACGIH)	10 mg/m3	TWA Inhalable particles.
TLV	(ACGIH)	3 mg/m3	TWA Respirable particles.

Methyl methacrylate

PEL:	(OSHA)	100 ppm	410 mg/m3	8 hr. TWA
PEL:	(OSHA)	100 ppm	410 mg/m3	8 hr. TWA
TLV	(ACGIH)	50 ppm	TWA	
TLV	(ACGIH)	100 ppm	STEL	
Butyl acrylate				
TLV	(ACGIH)	2 ppm	TWA	
AEL *	(DUPONT)	2 ppm	8 & 12 hr. TWA, Skin	

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: solid
Color	: various
Odor	: odourless
Density	: 1.6 - 1.8 g/cm3
Water solubility	: insoluble

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	: None reasonably foreseeable. Stable under normal conditions.
Hazardous decomposition products	: Methyl methacrylate monomer, n-Butyl acrylate , Butyl acrylate

SECTION 11. TOXICOLOGICAL INFORMATION

Corian® Solid Surface Material

Further information : This product has no known adverse effect on human health.

SECTION 12. ECOLOGICAL INFORMATION

Additional ecological information : This product has no known eco-toxicological effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal : Can be landfilled or incinerated, when in compliance with local regulations.

SECTION 14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA Status : On the inventory, or in compliance with the inventory

DSL Status : This product contains one or several components listed in the Canadian NDSL list.

California Prop. 65 : The State of California, under Proposition 65, regulates Carbon Black - airborne, unbound particles of respirable size as a carcinogen. In this product, carbon black is not supplied in the form regulated in California.

PA Right to Know Regulated Chemical(s) : Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Methyl methacrylate , Butyl acrylate

NJ Right to Know Regulated Chemical(s) : Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Methyl methacrylate , Butyl acrylate

WHMIS Classification : - Not WHMIS controlled.

SECTION 16. OTHER INFORMATION

Corian is a registered trademark of E. I. duPont de Nemours and Company
Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.
Before use read DuPont's safety information.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.

Formica

Material Safety Data Sheet

Henkel

Revision Number: 001.1

Issue date: 02/20/2009

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **FORMICA F160 NATURAL**
Product use: Adhesive

IDH number: 749278

Region: Canada

Company address:
Henkel Canada Corporation
2225 Meadowpine Boulevard
Mississauga, Ontario L5N 7P2

Contact information:
Telephone: 905.814.6511
Emergency telephone: 905.814.6511
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Physical state: Liquid
Color: White
Odor: Slight

WHMIS hazard class: D.2.B

WARNING: MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.
MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS.
MAY CAUSE ALLERGIC SKIN REACTION.

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects

Inhalation: Inhalation of high vapor concentrations may produce respiratory irritation, and may cause central nervous system (CNS) depression. Inhalation of high levels of zinc compounds may cause tightness of chest, metallic taste, cough, dizziness, fever, chills, headache, nausea, and dry throat.

Skin contact: May cause skin irritation. May cause skin sensitization.

Eye contact: May cause irritation.

Ingestion: May cause gastrointestinal tract irritation if swallowed.

Existing conditions aggravated by exposure: Respiratory disorders.

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Rosin modified resin	Proprietary	1 - 5
Zinc oxide	1314-13-2	1 - 5
Phenol, 4-methyl-, reaction products with dicyclopentadiene and isobutylene	68610-51-5	1 - 5

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If symptoms develop and persist, get medical attention.

Skin contact: Wash affected area immediately with soap and water. Remove contaminated clothing and footwear. If symptoms develop and persist, get medical attention.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get immediate medical attention.

Ingestion:	Get immediate medical attention. DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Flash point:	Not applicable
Autoignition temperature:	Not available
Flammable/Explosive limits - lower:	Not available
Flammable/Explosive limits - upper:	Not available
Extinguishing media:	None necessary. Use media appropriate for surrounding material.
Special firefighting procedures:	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.
Unusual fire or explosion hazards:	None expected.
Hazardous combustion products:	Smoke. Oxides of carbon. Oxides of zinc.
Sensitivity to Mechanical Impact:	Not sensitive to mechanical impact.
Sensitivity to static discharge:	None

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Prevent further leakage or spillage if safe to do so. Prevent contamination of soil and water.
Clean-up methods:	Wear suitable protective clothing, gloves and eye/face protection. Avoid skin contact and inhalation of vapors during disposal of spills. Confine in small area; use absorbent to clean up. Place in container for disposal with accordance with federal, state and local regulations.

7. HANDLING AND STORAGE

Handling:	Wear suitable protective clothing, safety glasses and gloves. Do not inhale vapors and fumes. Avoid skin and eye contact.
Storage:	For safe storage, store at or above 3 °C (37.4 °F) Protect from freezing.

For information on product shelf life contact Henkel Canada Customer Service at (905) 814-6511.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Rosin modified resin	None	None	None	None
Zinc oxide	2 mg/m3 TWA Respirable fraction. 10 mg/m3 STEL Respirable fraction.	5 mg/m3 TWA Fume. 5 mg/m3 TWA Respirable fraction. 15 mg/m3 TWA Total dust.	None	None
Phenol, 4-methyl-, reaction products with dicyclopentadiene and isobutylene	None	None	None	None

Engineering controls: Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

Respiratory protection: Use NIOSH approved respirator if there is potential to exceed exposure limit(s). Observe OSHA regulations for respiratory use (29 CFR 1910.134).

Eye/face protection: Safety goggles or safety glasses with side shields. Wear face shield as necessary when spraying.

Skin protection: Use impermeable gloves and protective clothing as necessary to prevent skin contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: White
Odor: Slight
Odor threshold: Not available
pH: 9.5 - 11.5
Vapor pressure: Not determined
Boiling point/range: 100 - 112 °C (212°F - 233.6 °F)
Melting point/ range: Not available
Specific gravity: 1.08 - 1.28
Vapor density: Not available
Flash point: Not applicable
Flammable/Explosive limits - lower: Not available
Flammable/Explosive limits - upper: Not available
Autoignition temperature: Not available
Evaporation rate: Not available
Solubility in water: Miscible
Partition coefficient (n-octanol/water): Not available
VOC content: 5 g/l less water
Viscosity: 600 - 1,500 mpa.s

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions of storage and use.

Hazardous reactions: Will not occur.

Hazardous decomposition products: Oxides of carbon. oxides of zinc

Incompatible materials: None known

Conditions to avoid: Do not freeze.

11. TOXICOLOGICAL INFORMATION

Toxicologically synergistic products: Not available

Refer to the following for Irritancy of Product, Sensitization to Product, Carcinogenicity, Reproductive Toxicity, Teratogenicity, and Mutagenicity.

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)	ACGIH Carcinogen
Rosin modified resin	No	No	No	No
Zinc oxide	No	No	No	No
Phenol, 4-methyl-, reaction products with dicyclopentadiene and isobutylene	No	No	No	No

Hazardous components	LD50s and LC50s	Health Effects/Target Organs
Rosin modified resin	None	No Data
Zinc oxide	None	Blood, Gastrointestinal, Immune system, Irritant, Kidney, Metabolic, Nervous System, Pancreas, Respiratory, Skin
Phenol, 4-methyl-, reaction products with dicyclopentadiene and isobutylene	None	Blood, Central nervous system, Corrosive, Irritant, Kidney, Liver

12. ECOLOGICAL INFORMATION

Ecological information: Not available

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Legal disposition of wastes is the responsibility of the owner/generator of the waste. Applicable federal, state and/or local regulations must be followed during treatment, storage, or disposal of waste containing this product.

14. TRANSPORT INFORMATION

Canada Transportation of Dangerous Goods - Ground

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: New Material Safety Data Sheet format.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR), and the MSDS contains all the information required by the CPR.

Prepared by: Carrie Oswald, Regulatory Affairs Specialist

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#7

Franklin International
MATERIAL SAFETY DATA SHEET

MSDS Name: Franklin Solvent Free FRP Adhesive
MSDS Number: 4457

Revision Date: 112000

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Franklin Solvent Free FRP Adhesive
CAS Number:	none
HMIS Hazard Rating:	Health: 1 Fire: 1 Reactivity: 0
Company Identification:	Franklin International 2020 Bruck Street Columbus OH 43207
Contact:	Franklin Technical Services
Telephone/Fax:	(800) 877-4583 (614) 445-1493
Emergency Phone (24 Hour):	Franklin Security (614) 445-1300
Chemtrec (24 Hour):	(800) 424-9300
Chemtrec International:	(703) 527-3887
Product Class	solvent free
Product Use:	adhesive
Product Code:	3432
Division:	Construction Adhesives & Sealants

SECTION 2 - COMPOSITION AND INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS Number	Percent
vinyl acetate	108-05-4	0.10

OSHA PELs & ACGIH TLVs are listed in Section 8 where applicable.

SECTION 3 - HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:
Light brown colored mastic. Slippery in the wet state. Do not ingest. Avoid prolonged exposure to skin or vapors. KEEP OUT OF REACH OF CHILDREN.

ROUTES OF ENTRY:

Ingestion:	Yes
Inhalation:	Yes
Skin:	Yes
Eye:	Yes

INHALATION:
No reported incidents of adverse health affects resulting from inhalation of vapors at room temperature.

INGESTION:
Ingestion is not a probable route of exposure. Harmful if swallowed.

SKIN:
Prolonged or repeated skin contact can cause irritation.

EYE:
Mildly irritating to eyes.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
Under conditions of normal use chronic affects are not expected. Possible aggravation of pre-exsisting skin conditions.

CARCINOGENICITY:
IARC: Yes, 2B (vinyl acetate). See Section 2.
NTP: No
OSHA: No
The International Agency for Research on Cancer has determined vinyl acetate to be carcinogenic in experimental animals.
Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans.

REPRODUCTIVE TOXICITY:
None currently known.

TARGET ORGANS:
Eyes and skin.

SECTION 4 - FIRST AID MEASURES

INHALATION:
Remove to fresh air. If difficulty persists, seek medical attention.
INGESTION:
Call poison control center immediately. Follow their specific instructions. Do not induce vomiting.
SKIN:
Wash with soap and water. Contact a physician if irritation develops or persists.
EYE:
Hold eyelids apart and flush with plenty of water for at least 15 minutes. Seek medical attention.

SECTION 5 - FIRE-FIGHTING MEASURES

Flammability Class (OSHA)	IIIB
Flash Point:	> 200 F Setaflash
Explosive Range:	Not Applicable

EXTINGUISHING MEDIA:
Water, water fog, CO_2, dry chemical, foam, ABC dry chemical.
HAZARDOUS COMBUSTION PRODUCTS:
Oxides of carbon.
FIRE FIGHTING PROCEDURES:
Wear a NIOSH approved self-contained breathing apparatus.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

CONTAINMENT TECHNIQUES:
Use inert absorbent to dike the spill. Keep away from drains.
CLEAN-UP:
If possible pump liquid into an approved container or spread absorbent over spill and shovel product/absorbent mixture into an approved container. If product has dried scrape up and place in an approved container.

SECTION 7 - HANDLING AND STORAGE

HANDLING:
Do not get material in eyes.
Avoid prolonged or repeated contact with the skin.
STORAGE:
Keep from freezing.
PRECAUTIONARY STATEMENT:
Keep out of the reach of children.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Occupational Exposure Limits

	ACGIH TLV	ACGIH TLV-C	ACGIH STEL	OSHA STEL	OSHA PEL
vinyl acetate	10.00 PPM	N/est	15.00 PPM	N/est	N/est

ENGINEERING CONTROLS:
Use local exhaust as needed to maintain occupational exposure limits.
OTHER:
Facilities storing or utilizing any chemical should be equipped with an eyewash facility and a safety shower.
RESPIRATORY PROTECTION:
Where exposure limits may be exceeded select a NIOSH approved respirator with appropriate Protection Factor and cartridge for the specific contaminents. Follow requirements for respiratory protection in OSHA 1910.134.
EYE PROTECTION:

Wear chemical safety glasses if splashing or misting of product may occur.
SKIN PROTECTION:
Where skin contact can occur, wear impervious gloves.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Form:	Mastic
Appearance/Color:	Light brown
Odor:	Mild
Solubility (in water):	Miscible
pH Value:	5.
Boiling Range/Point:	212.°F
Evaporation Rate:	Slower than n-Butyl Acetate
% Volatile:	33.%
Specific Gravity:	1.41
VOC:	2.6 g/l

SECTION 10 - STABILITY AND REACTIVITY

Stability:	This product is stable
Hazardous Polymerization:	Hazardous polymerization will not occur

CONDITIONS TO AVOID:
None.
INCOMPATIBLITY:
Strong acids and bases.
HAZARDOUS DECOMPOSITION PRODUCTS:
Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

Two year animal tests (inhalation) at 50, 200 and 600 ppm of vinyl acetate monomer have shown that some animals in the 600 ppm group developed tumors. There is no evidence of human carcinogenicity.

SECTION 12 - ECOLOGICAL INFORMATION

This formulation has not been tested for environmental effects.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:
Disposal of this product must comply with all applicable federal, state and local regulations.
CONTAINER DISPOSAL:
Disposal of this container should comply with all applicable federal, state and local regulations.

SECTION 14 - TRANSPORT INFORMATION

UN Number	none
UN Pack Group	N/A
UN Class	Nonhaz
ICAO/IATA Class	Nonhazardous
IMDG Class	Nonhazardous
Shipping Name	Nonhazardous

Packaging may not be approved for shipping by air. Please contact Franklin International for further information.

SECTION 15 - REGULATORY INFORMATION

SARA TITLE III SECTION 313:
This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act of 1986 and of 40 CFR 372:

Chemical Name	CAS Number	Percent

---

vinyl acetate	108-05-4	0.10

TSCA (Toxic Substances Control Act Inventory):
All components of this product are listed on the TSCA inventory except as exempted.
PENNSYLVANIA:
Hazardous components required to be listed at 1% or more:
calcium carbonate; limestone; 1317-65-3
kaolin clay; kaolin; 1332-58-7
Non-hazardous components required to be listed at 3% or more:
urea 57-13-6; dipropylene glycol dibenzoate 27138-31-4; polyvinyl acetate emulsion 24980-61-8; water 7732-18-5
NEW JERSEY:
polyvinyl acetate emulsion 24980-61-8; water 7732-18-5; clay 1332-58-7; calcium carbonate 1317-65-3; dipropylene glycol dibenzoate 27138-31-4

SECTION 16 - OTHER INFORMATION

DISCLAIMER:
While the information and recommendations set forth herein are believed to be accurate as of the data hereof, Franklin International makes no warranty, express or implied, with respect thereto and disclaims all liability from reliance thereon.

#6

Franklin International
MATERIAL SAFETY DATA SHEET

MSDS Name: Titebond Solvent Free Cove Base Adhesive
MSDS Number: 3402

Revision Date: 110600

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Titebond Solvent Free Cove Base Adhesive
CAS Number:	none
HMIS Hazard Rating:	Health: 1 Fire: 1 Reactivity: 0
Company Identification:	Franklin International 2020 Bruck Street Columbus OH 43207
Contact:	Franklin Technical Services
Telephone/Fax:	(800) 877-4583 (614) 445-1493
Emergency Phone (24 Hour):	Franklin Security (614) 445-1300
Chemtrec (24 Hour):	(800) 424-9300
Chemtrec International:	(703) 527-3887
Product Class	Solvent Free adhesive
Product Use:	cove base adhesive
Product Code:	3620
Division:	Construction Adhesives & Sealants

SECTION 2 - COMPOSITION AND INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS Number	Percent

Product contains no hazardous ingredients or they are below reportable levels.

OSHA PELs & ACGIH TLVs are listed in Section 8 where applicable.

SECTION 3 - HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:
CAUTION: IRRITANT. Contains ethylene glycol. Light beige colored mastic with mild odor. Slippery in the wet state.
ROUTES OF ENTRY:

Inhalation:	yes
Ingestion:	yes
Skin:	no
Eye:	yes

INHALATION:
No hazard in normal industrial use.
INGESTION:
Ingestion is not a probable route of exposure. Harmful if swallowed.
SKIN:
Prolonged or repeated skin contact can cause irritation.
EYE:
Mildly irritating to eyes.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
Pre-existing skin disorders.
CARCINOGENICITY:
IARC: Yes, 2B (vinyl acetate). See Section 2.
NTP: No
OSHA: No
The International Agency for Research on Cancer has determined vinyl acetate to be carcinogenic in experimental animals.
Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans.
REPRODUCTIVE TOXICITY:
None anticipated based on product formula. Ethylene glycol may cause birth defects based on tests with laboratory animals.
TARGET ORGANS:
Eyes and skin.

SECTION 4 - FIRST AID MEASURES

INHALATION:

Franklin International
MATERIAL SAFETY DATA SHEET

Remove to fresh air. If difficulty persists, seek medical attention.
INGESTION:
Call poison control center immediately. Follow their specific instructions.
SKIN:
Wash with soap and water. Contact a physician if irritation develops or persists.
EYE:
Hold eyelids apart and flush with plenty of water for at least 15 minutes. Seek medical attention.

SECTION 5 - FIRE-FIGHTING MEASURES

Flammability Class (OSHA)	IIIB
Flash Point:	> 200 F
	97.°F - -97.°F
	S
Explosive Range:	Not Applicable

EXTINGUISHING MEDIA:
Water, water fog, CO2, dry chemical, foam, ABC dry chemical.
HAZARDOUS COMBUSTION PRODUCTS:
Oxides of carbon may be released during combustion.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SECTION 7 - HANDLING AND STORAGE

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Occupational Exposure Limits

ACGIH TLV	ACGIH TLV-C	ACGIH STEL	OSHA STEL	OSHA PEL

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Form:	mastic
Appearance/Color:	light beige
Odor:	mild
Solubility (in water):	miscible
pH Value:	5.
Boiling Range/Point:	212.°F
Evaporation Rate:	Slower than n-Butyl Acetate
% Volatile:	29.%
Specific Gravity:	1.44
VOC:	3.0 g/l

SECTION 10 - STABILITY AND REACTIVITY

Stability:	This product is stable
Hazardous Polymerization:	Hazardous polymerization will not occur

SECTION 11 - TOXICOLOGICAL INFORMATION

SECTION 12 - ECOLOGICAL INFORMATION

SECTION 13 - DISPOSAL CONSIDERATIONS

SECTION 14 - TRANSPORT INFORMATION

UN Number	none
UN Pack Group	N/A
UN Class	Nonhaz

ICAO/IATA Class	Nonhazardous
IMDG Class	Nonhazardous
Shipping Name	Nonhazardous

SECTION 15 - REGULATORY INFORMATION

SECTION 16 - OTHER INFORMATION

FRP-Panels #3

MATERIAL SAFETY DATA SHEET

Lasco Panel Products
Division of Tomkins Ind., Inc.
3015 Dixon Drive
Florence, KY. 41042
Telephone: (606) 371-7720

Essentially similar to OSHA Form 20

Issue date: 5/15/92
Revision date:

SECTION I IDENTIFICATION

Trade name and synonym .....LASCOLITE; LASCOBOARD + skylites, fiberated also.
Chemical name and synonym.....Reinforced plastic panels (FRP)
Chemical family.....Polymerized Polyesters
DOT Hazard Classification.....Not applicable

SECTION II HAZARDOUS INGREDIENTS

LASCO FRP PANELS are solid sheets which are composed of fiberglass, calcium carbonate, titanium dioxide, hydrated alumina and pigments embedded in a cured polymerized styrenated/acrylated polyester.
Not listed in NTP, IARC or OSHA.

SECTION III PHYSICAL DATA

Boiling Point.....N/A
Vapor Pressure.....N/A
Vapor Density (Air=1).....N/A
Specific Gravity (H2O=1)..... 1.3 - 1.9
% Volatile by Volume.....N/A
Solubility in Water.....Insoluble
Appearance and Odor: Solid, rigid sheet; no odor.

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point.....>500 F.
Extinguishing Medium.....Water; CO 2; dry chemical.
Special Fire Fighting Procedures and Precautions: Use medium best suited for the fire environment. Use self-contained breathing apparatus for large scale fire.
Unusual Fire and Explosion Hazards: Combustion may yield CO; CO 2; aliphatic and aromatic hydrocarbons and halogenated compounds. Tests show combustion gases to be less toxic than those from wood.

SECTION V REACTIVITY DATA

Stability.....Stable
Incompatibility.....Alkalai, hydrofluoric acid, strong mineral acids.
Hazardous decomposition products.....Combustion may yield CO; CO 2; aliphatic and aromatic hydrocarbons and halogenated compounds.
Hazardous Polymerization.....Will not occur.

over →

SECTION VI SPILL OR LEAK PROCEDURE

Steps to be taken in case of material release or spill.....N/A
Waste Disposal Methods.....Dispose of as solid waste in accordance with all applicable local, state and federal authorities.

SECTION VII HEALTH HAZARD INFORMATION

Threshold limit value.....Fabricating, drilling, cutting, etc. of fiberglass reinforced plastic panels may produce dust. Dust should be controlled. Particulate level not to exceed 30Mppcf.
Primary route(s) of entry.....Inhalation of dust.
Effects of overexposure.....Inhalation of dust in excess of the TLV may result in irritation of the upper respiratory tract.
Medical conditions generally aggravated by exposure: Any condition generally aggravated by mechanical irritants in the air or on skin.
Emergency First Aid procedures:
Prolonged skin contact: To reduce itching, wash with warm water and soap.
Eye contact: Flush eyes with running water for at least 15 minutes.
Inhalation: None required.
Ingestion: None required.
If irritation persists, seek medical attention.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiratory protection: When dust is present, cover nose and mouth with mask - NIOSH/OSHA approved as 3M8710.
Ventilation: Use adequate mechanical ventilation to control dust.
Protective gloves: Use when handling FRP sheets.
Eye protection: Use goggles when fabricating with FRP sheets.

SECTION IX SPECIAL PRECAUTIONS

Precautions to be taken in handling and storage: Store away from open flame or torch. Wash skin after handling. Wash dusty clothes separately.
Other precautions: Eating or drinking should not be done in fabricating areas.

The information contained herein is believed to be accurate and represents the best information currently available to us. However, since the conditions of use or misuse are beyond our control, Lasco Panel Products makes no warranty, either expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

National Gypsum

Gridstone Ceiling Panels

Material Safety Data Sheet

MSDS No: **GB-12430**

Gridstone® BRAND Products

Date: July 1, 2009
Supersedes Date: May 22, 2006

1. PRODUCT AND COMPANY INFORMATION

Manufacturer Information:
National Gypsum Company
2001 Rexford Road
Charlotte, NC 28211

For Emergency Product Information Call:
Director Quality Services
(704) 551-5820 - 24 Hour Emergency Response
Website: www.nationalgypsum.com

Product Name	**Gridstone Ceiling Panels**	**Gridstone Cleanroom Ceiling Panels**	**Gridstone Hi-Strength Ceiling Panels**

Use: 2'x4' and 2'x2' panels used for interior or exterior ceiling grid systems

Generic Descriptions: Article composite. Gridstone Ceiling Panels consist of a non-combustible Fireshield® C gypsum core encased in a 100% recycled paper on face and back sides. A 2-mil. washable white stipple vinyl with high light reflectance is laminated to the face side.

2. HAZARDS IDENTIFICATION

Appearance and Odor: A gypsum core encased in paper with vinyl laminate. No Odor.

Contains no asbestos. HMIS Hazard Class No. 1, 0, 0.

Emergency Overview

Gridstone® BRAND Products do not present an inhalation, ingestion, or contact health hazard unless subjected to operations such as sawing, sanding or machining which result in the generation of airborne particulate. This product contains quartz (crystalline silica) as a naturally occurring contaminant. It is recommended that a NIOSH approved particulate respirator be worn whenever working with this product results in airborne dust exposure exceeding the prescribed limits.
(See Section 11 - Toxicological Information)

OSHA Regulatory Status

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

2. HAZARDS IDENTIFICATION (CONTINUED)

Potential Health Effects

Primary Routes of Entry: Inhalation, Dermal contact

Target Organs: Respiratory system, skin, eyes.

Inhalation: Acute exposure to airborne dust concentrations in excess of the PEL/TLV may result in coughing, dyspnea, wheezing, general irritation of the nose, throat, and upper respiratory tract, and impaired pulmonary function. Chronic exposures may result in lung disease (silicosis and/or lung cancer). (See Section 11 - Toxicological Information)

Exposures to respirable crystalline silica have not been documented during normal use of this product. However, good housekeeping practices and industrial hygiene monitoring is recommended when the potential for significant exposure exists.

Skin Contact: Continued and prolonged contact may result in dry skin. Contact with dust or glass fibers may produce itching, rash and/or redness. Repeated or prolonged exposure may result in dermatitis.

Eye Contact: Direct contact may cause mechanical irritation.

Ingestion: No known adverse effects. May result in obstruction or temporary irritation of the digestive tract.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-Number	Weight Percent
Calcium Sulfate Dihydrate (Gypsum)	10101-41-4	>85
Crystalline Silica (Quartz)	14808-60-7	<5
Cellulose (Paper Fiber)	9004-34-6	<10
Polyester	NA	<1

4. FIRST AID MEASURES

- **Inhalation:** Remove exposed individual to fresh air immediately. If breathing difficulty persists, seek medical attention.
- **Skin:** Flush and wash skin with soap and water. Utilize lotions to alleviate dryness if present. Seek medical attention if irritation persists.
- **Eye:** Immediately flush eyes with water for 15 minutes. Remove contact lenses (if applicable). Seek medical attention if irritation persists.
- **Ingestion:** Gypsum is non-hazardous and no harmful effects are expected upon ingestion of small amounts. Larger amounts may cause abdominal discomfort or possible obstruction of the digestive tract. Seek medical attention if problems persist.

5. FIRE FIGHTING MEASURES

Flammable Properties
- Not flammable or combustible
- NFPA Hazard Class No: 1/0/0

Extinguishing media
- Dry chemical, foam, water, fog or spray

Protection of firefighters
- Standard protective equipment and precautions

Fire and Explosion Hazards
- None

Hazardous Combustion Products
- None
- Above 1450°C, material can decompose and release sulfur dioxide (SO_2) and oxides of carbon.

6. ACCIDENTAL RELEASE MEASURES

Not applicable, as product is an article composite.

General recommendations:

- Wear appropriate Personal Protective Equipment. (See Section 8)
- Maintain proper ventilation.
- Pick-up larger pieces to avoid a tripping hazard. Return large pieces of damaged/scraped material for recycling. Sweep or vacuum remaining material into a waste container for disposal. Use a light water spray to minimize dust generation.
- Waste material is not a hazardous waste. Dispose of in accordance with applicable federal, state, and local regulations.

7. HANDLING AND STORAGE

- Avoid contact with eyes, skin and clothing.
- Wear recommended personal protective equipment when handling. (See Section 8)
- Avoid breathing dust.
- Minimize generation of dust.
- Store material in a cool, dry, ventilated area.
- Store panels flat to minimize damage and warping.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

	Exposure Limits	
Component	OSHA PEL (mg/m3)	ACGIH TLV (mg/m3)
Calcium Sulfate Dihydrate (Gypsum)	15 (T) 5 (R)	10 (T)
Crystalline Silica (Quartz)	0.1 (R)	0.025 (R)
Cellulose (Paper Fiber)	15 (T) 5 (R)	10 (T)
Polyester	NE	NE

T- Total Dust
R- Respirable Dust
NE- Not established

Engineering Controls

- Work/Hygiene Practices: The score and snap method of cutting is recommended. Sawing, drilling or machining will produce dust.
- Ventilation: Provide local and general exhaust ventilation to maintain a dust level below the PEL/TLV.
- Utilize wet methods, when appropriate, to reduce generation of dust.

Personal Protective Equipment

- Respiratory Protection: A NIOSH approved particulate respirator is recommended in poorly ventilated areas or if the PEL/TLV is exceeded. OSHA's 29 CFR 1910.134 (Respiratory Protection Standard) must be followed whenever work conditions require respirator use.
- Eye Protection: Safety glasses or goggles.
- Skin: Gloves, protective clothing and/or barrier creams may be utilized if conditions warrant.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Vinyl, paper faced gypsum boards with white/gray core
Odor: None
Physical State: Solid
Ph: ~7
Solubility (H2O): 2.1 g/L @ 20°C
Boiling, Freezing, Melting Point: Not Applicable
Decomposition Temperature: 1450°C
Vapor pressure: Not Applicable
Vapor density: Not Applicable
Volatile organic compounds (VOC) content: None

Flammability: Not Applicable
Flash Point: Not Applicable
Upper/Lower explosive limits: Not applicable
Auto-ignition temperature: Not Applicable
Partition coefficient: n-octanol/water: Not applicable
Evaporation rate: Not Applicable
Molecular weight: 172.2 grams
Molecular formula: $CaSO_4.2H_2O$
Specific Gravity: 2.31 g/cc
Bulk Density: ~55 lb/ft3

10. STABILITY AND REACTIVITY

Chemical stability: Stable in dry environments.
Conditions to avoid: Contact with strong acids may result in generation of carbon dioxide.
Incompatibility: None
Hazardous decomposition: Above 1450°C gypsum will decompose to calcium oxide (CaO), with releases of sulfur dioxide (SO_2) and various oxides of carbon.
Hazardous polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Data presented is for the major component of this product: Gypsum (calcium sulfate dihydrate)

Human Data
There is no information on toxicokinetics, metabolism and distribution.

There have been reports of irritation to mucus membranes of the eyes and respiratory tract upon acute exposure to dusts in excess of the recommended limits.

Chronic exposure to crystalline silica (a naturally occurring contaminant in gypsum) in the respirable size has been shown to cause silicosis, a debilitating lung disease. In addition, the International Agency for Research on Cancer (IARC) classifies crystalline silica inhaled in the form of quartz or cristobalite from occupational sources as carcinogenic to humans, Group 1. The National Toxicology Program (NTP) classifies respirable crystalline silica as a substance which may be reasonably anticipated to be a carcinogen. OSHA does not regulate crystalline silica as a human carcinogen. Industrial hygiene monitoring to date has not identified any detectable respirable crystalline silica in dust sampling conducted during gypsum panel installation utilizing recommended procedures.

Animal Data
The acute oral toxicity study [OECD TG 420, Fixed dose procedure] of calcium sulfate dihydrate showed that this chemical did not cause any changes even at 2,000 mg/kg b.w. Therefore, the oral LD_{50} value was more than 2,000-mg/kg b.w. for female rats (Sprague-Dawley).

Calcium sulfate, dihydrate was not irritating to the skin of rabbits at 1, 24, 48 and 72 hours after removal of test patches [OECD TG 404]. There is no indication of skin sensitization in guinea pigs [OECD TG 406].

Invivo and *Invitro* studies for mutagenicity were negative.

Reproduction/Developmental Toxicity Screening Tests were negative.

12. ECOLOGICAL INFORMATION

This product does not present an ecological hazard to the environment.

Ecotoxicological Information
Toxicity studies performed with fish, aquatic invertebrates and aquatic plants showed no toxic effect.

Environmental Fate
Gypsum is a naturally occurring mineral. Biodegradation and/or bioaccumulation potential is not applicable.

13. DISPOSAL CONSIDERATIONS

- Dispose of according to Local, State, Federal, and Provincial Environmental Regulations.
- Recycle if possible.

14. TRANSPORT INFORMATION

- This product is not a DOT hazardous material
- Shipping Name: Same as product name
- ICAO/IATA/IMO: Not applicable

15. REGULATORY INFORMATION

All ingredients are included on the TSCA inventory.

Federal Regulations

SARA Title III: Not listed under Sections 302, 304, and 313
CERCLA: Not listed
RCRA: Not listed
OSHA: Dust and potential respirable crystalline silica generated during product use may be hazardous.

State Regulations
California Prop 65: Respirable crystalline silica is known to the state of California to cause cancer. Industrial hygiene monitoring during recommended use of this product failed to identify any respirable crystalline silica.

Canada WHMIS
All components of this product are included in the Canadian Domestic Substances List (DSL).
Crystalline silica: WHMIS Classification D2A

16. OTHER INFORMATION

MSDS Revision Summary

Effective Date Change:	5/22/06	Supersedes: 1/26/04
Format Changes:	ANSI Z400.1-2004	

Key/Legend

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Services Number
CFR	Code of Federal Regulations
DOT	Department of Transportation
EPA	Environmental Protection Agency
HEPA	High Efficiency Particulate Air
HMIS	Hazardous Material Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMO	International Maritime Organization
NIOSH	National Institute for Occupational Safety and Health
NFPA	National Fire Protection Association
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PPE	Personal Protective Equipment
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA	Time Weighted Average
WHMIS	Workplace Hazardous Materials Information System

16. OTHER INFORMATION (CONTINUED)

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind expressed or implied is made with respect to the information contained herein. This material safety data sheet was prepared to comply with the OSHA Hazard Communication Standard (29 CFR 1910.1200) and with the Workplace Hazardous Materials Information System (WHMIS).

Disclaimer of Liability:
As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of the material. Information contained herein is believed to be true and accurate, but all statements or suggestions are made without any warranty, express or implied, regarding accuracy of the information, the hazards connected with the use of the material, or the results to be obtained for the use thereof.

FACTS Faxed FAST! SM

OSHA-Required Health And Safety Information!

This Material Safety Data Sheet (MSDS) was requested moments ago from Hercules Automated Fax Information System. Please forward it immediately to the person in charge of MSDS's, or retain it at the machine until claimed.

Section 1

MATERIAL SAFETY DATA SHEET # 92

Hercules PVC Cement-Clr, Med Body, Med Set, "LOW VOC"

Date Prepared: 11/4/1996 **Last Reviewed:** 8/27/2007

Meets OSHA 29 CFR 1910.1200

HERCULES® MATERIAL SAFETY INFORMATION SERVICE

Hercules Chemical Company Inc.
111 South Street
Passaic NJ 07055
Phone (800) 221-9330
Fax (800) 333-3456

Section 2 - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s), CAS Numbers)	OSHA PEL	ACGIH TLV	Other Limits	Upper Bound Limit if SARA Reportable
This MSDS is for LOW VOC Product (As shown on label) ONLY. For regular product see MSDS #52.				
Tetrahydrofuran (109-99-9)	200 PPM	200 PPM	N/A	--
Methyl Ethyl Ketone (78-93-3)	200 PPM	200 PPM	N/A	--
Cyclohexanone (108-94-1)	50 PPM	20 PPM	N/A	--
Acetone (67-64-1)	750 PPM	750 PPM	N/A	--
N-Methyl Pyrrolidone (872-50-4)	None	None	N/A	15%

HMIS Hazard Rating: Health: 3 Flammability: 4 Reactivity: 1 Personal Protection: G

Section 3 - Physical/Chemical Characteristics

Boiling Point (°F):	Specific Gravity (H2O = 1):	Vapor Density (Air = 1):	Vapor Pressure (mm Hg):
133 Based on first boiling component-Acetone	0.910 ± 0.03	2.0 to 2.5	190 Based on first boiling component-Acetone

Melting Point (° F):	Evaporation Rate: (Butyl Acetate = 1)	Solubility in Water:
N/A	7-11	55% to 75%

Appearance And Color: Clear Viscous Liquid **Odor:** Ethereal & Acetone-like

Section 4 - Fire And Explosion Hazard Data

Flash Point:	Flammable Limits: LEL:	UEL:
0-6° F (T.C.C.) (Based on Acetone)	2%	13%

Extinguishing Media: Dry chemical. Foam. Carbon dioxide

Special Firefighting Procedures:
Handle as flammable liquid. Wear self-contained breathing apparatus & chemical goggles. Water may be ineffective, but should be used to keep fire-exposed containers cool.

Unusual Fire And Explosion Hazards:
Vapor is heavier than air and travels considerable distance to source of ignition and flashback. On long standing may form peroxides which may cause violent reaction especially upon evaporation to dryness.

Continued on Next Page

Section 5 - Reactivity Data

Stability: Stable **Conditions To Avoid:** Keep in closed containers away from sparks and open flame.

Incompatability (Materials To Avoid): Strong oxidizing materials, Lithium Aluminum Hydride, Sodium Aluminum Hydroxide, Sodium and Potassium Hydroxides.

Hazardous Decomposition: CO2 and CO are formed. Irritating peroxide fumes form when heated to decomposition.

Hazardous Polymerization: Avoid excessive exposure to air and cationic initiators like Lewis Acids.

Section 6 - Health Hazard Data

Routes of Entry: **Inhalation** Yes/Primary **Skin** Yes/Primary **Ingestion** Yes/Secondary

Health Hazards:

Corrosive to eyes and skin irritant. Severe overexposure can cause headache, dizziness and narcosis. May cause dermatosis with prolonged repeated contact.

Carcinogenicity: **NTP** NO **IARC** NO **OSHA Regulated** NO

Signs And Symptoms of Exposure:

INGESTION: No effects of exposure expected. INHALATION: Will cause irritation of mucous membranes, nose, eyes & throat, coughing, difficulty of breathing. Exposure to high vapor concentration may cause headache, dizziness, nausea, narcosis. SKIN CONTACT: Prolonged contact causes common solvent defatting effect. EYE CONTACT: Vapors slightly uncomfortable, splashes irritating. Will cause painful burning or stinging of eyes and lids, watering of eyes and inflammation of conjunctiva.

Medical Conditions Generally Aggravated By Exposure:

No data found.

Emergency And First Aid Procedures:

INGESTION: Do not induce vomiting. If conscious, dilute by giving 2 glasses of water. Call a physician immediately. INHALATION: Remove to fresh air. If not breathing give artificial respiration preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician. SKIN CONTACT: Wash affected areas with soapy water. Remove contaminated clothing. EYE CONTACT: Immediately flush eyes with plenty of water for 15 minutes. Consult a physician.

Continued on Next Page

Section 7 - Precautions For Safe Handling And Use:

Steps To Be Taken In Case Material Is Released Or Spilled:

Eliminate sources of ignition. Absorb with sand or inert absorbing material and dispose of with solid waste according to Federal, State and local regulations. Flush spill area with water, avoid flushing into confined areas.

Waste Disposal Method:

Incinerate in accordance with Federal, State and local regulations.

Precautions To Be Taken In Handling And Storing:

Store in cool place, well-ventilated area. Keep away from open flame and sources of ignition.

Other Precautions:

Use normal good personal hygiene.

Section 8 - Control Measures:

Respiratory Protection:

In confined spaces or other circumstances where adequate ventilation cannot be assured use NIOSH-approved respirator, positive pressure airline mask, or self contained breathing apparatus.

Ventilation: **Local Exhaust** As required.

Mechanical All ventilating devices must be located so they do not provide a source of ignition.

Special When using cements in an area of limited ventilation, use a ventilation device such as a fan or air mover to maintain a safe air concentration.

Other: N/A

Gloves: PVA gloves.

Eye Protection: Chemical safety goggles.

Other Protective Clothing: Apron, boots, eye bath, safety shower.

Work/Hygienic Practices: Wash thoroughly after handling. Avoid ingestion of the cements. Do not eat or drink when using cements or in the vicinity where such cements are being used.

HERCULES® MATERIAL SAFETY INFORMATION SERVICE

FACTS Faxed FAST!

For Hercules Material Safety Data Sheets by fax anytime, day or night, just call 1-800-942-INFO (1-800-942-4636) from any Touch-Tone phone. Have your fax number ready. Checking the product label for the correct MSDS # will save time.

Joint Tape

National Gypsum

Material Safety Data Sheet

MSDS No: **GB-1204**

Gypsum Board Paper and Joint Tape

Date: July 1, 2009
Supersedes Date: May 22, 2006

1. PRODUCT AND COMPANY INFORMATION

Manufacturer Information:
National Gypsum Company
2001 Rexford Road
Charlotte, NC 28211

For Emergency Product Information Call:
Director Quality Services
(704) 551-5820 - 24 Hour Emergency Response
Website: www.nationalgypsum.com

Product Name: **Gypsum Board Paper, 250'Joint Tape, 500' Joint Tape**

Use: Gypsum Board paper used for face and back of gypsum board to incase various gypsum cores. Joint tape used to reinforce gypsum board joints.

Chemical Family: Polysaccharide
Chemical Name: Cellulose (Paper Fibers)
Formula: $[C_6H_{10}O_5]n$

2. HAZARDS IDENTIFICATION

Appearance and Odor: White/gray paper with no odor.

Contains no asbestos. HMIS Hazard Class No. 1, 0, 0.

Emergency Overview

This product is not expected to produce any hazards during normal use. Dust generated during mechanical manipulation (sanding, cutting) may cause eye, nose or upper respiratory irritation with prolonged exposure.

OSHA Regulatory Status

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

2. HAZARDS IDENTIFICATION (CONTINUED)

Potential Health Effects

Primary Routes of Entry: Inhalation, Dermal contact

Target Organs: Respiratory system, skin, eyes.

Inhalation: Acute exposure to high airborne dust concentrations may result in coughing, dyspnea, wheezing, or general irritation of the nose, throat, and upper respiratory tract.

Skin Contact: Continued and prolonged contact may cause some skin irritation.

Eye Contact: Direct contact of fibers or dust may cause mechanical irritation.

Ingestion: No known adverse effects. May result in obstruction or temporary irritation of the digestive tract if ingested.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-Number	Weight Percent
Cellulose	9004-34-6	>95

4. FIRST AID MEASURES

- **Inhalation:** Remove exposed individual to fresh air immediately. If breathing difficulty persists, seek medical attention.
- **Skin:** Flush and wash skin with soap and water. Utilize lotions to alleviate irritation, if present.
- **Eye:** Do not rub eyes. Immediately flush with water for 15 minutes. Remove contact lenses (if applicable). Seek medical attention if irritation persists.
- **Ingestion:** Not expected to occur. Seek medical attention if injested.

5. FIRE FIGHTING MEASURES

General Fire Hazards
- None known

Extinguishing media
- Dry chemical, foam, water, fog or spray

Protection of firefighters
- Standard protective equipment and precautions

Fire and Explosion Hazards
- None

Hazardous Combustion Products
- None

6. ACCIDENTAL RELEASE MEASURES

No special precautions.

General recommendations:

- Pick up to avoid tripping hazard.
- Waste material is not a hazardous waste. Dispose of in accordance with applicable federal, state, and local regulations.

7. HANDLING AND STORAGE

- Avoid contact with eyes, skin and clothing.
- Wear recommended personal protective equipment when handling. (See Section 8)
- Minimize generation of dust.
- Keep dry to preserve usefulness.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

	Exposure Limits	
Component	OSHA PEL (mg/m3)	ACGIH TLV (mg/m3)
Cellulose	5 (R)	10 (T)

T- Total Dust
R- Respirable Dust

Engineering Controls

- Work/Hygiene Practices: Avoid generating dust.
- Ventilation: Provide local and general exhaust ventilation to maintain a dust level below the PEL/TLV.

Personal Protective Equipment

- Respiratory Protection: A NIOSH approved particulate respirator is recommended in poorly ventilated areas or if the PEL/TLV is exceeded. OSHA's 29 CFR 1910.134 (Respiratory Protection Standard) must be followed whenever work conditions require respirator use.
- Eye Protection: Safety glasses or goggles.
- Skin: Gloves, protective clothing and/or barrier creams may be utilized if conditions warrant.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White/gray paper
Odor: None
Physical State: Solid
Ph: Not Applicabale
Solubility (H2O): Not Applicable
Boiling, Freezing, Melting Point: Not Applicable
Decomposition Temperature: Not Applicable
Vapor pressure: Not Applicable
Vapor density: Not Applicable
Volatile organic compounds (VOC) content: None

Flammability: Not Applicable
Flash Point: Not Applicable
Upper/Lower explosive limits: Not applicable
Auto-ignition temperature: Not Applicable
Partition coefficient: n-octanol/water: Not applicable
Evaporation rate: Not Applicable
Molecular weight: Not Applicable
Molecular formula: Not Applicable
Specific Gravity: Not Applicable
Bulk Density: Not Applicable

10. STABILITY AND REACTIVITY

Chemical stability: Stable in dry environments.
Conditions to avoid: None
Incompatibility: None
Hazardous decomposition: None known.
Hazardous polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Direct prolonged contact may cause eye or skin irritation.

LD_{50}, LC_{50}: Not available

12. ECOLOGICAL INFORMATION

This product does not present an ecological hazard to the environment.

13. DISPOSAL CONSIDERATIONS

- Dispose of according to Local, State, Federal, and Provincial Environmental Regulations.
- Recycle if possible.

14. TRANSPORT INFORMATION

- This product is not a DOT hazardous material
- Shipping Name: Same as product name
- ICAO/IATA/IMO: Not applicable

15. REGULATORY INFORMATION

All ingredients are included on the TSCA inventory.

Federal Regulations

SARA Title III: Not listed under Sections 302, 304, and 313
CERCLA: Not listed
RCRA: Not listed
OSHA: Not listed

15. REGULATORY INFORMATION (CONTINUED)

Canada WHMIS
All components of this product are included in the Canadian Domestic Substances List (DSL).

16. OTHER INFORMATION

MSDS Revision Summary
Effective Date Change: 5/22/06 Supersedes: 1/26/04
Format Changes: ANSI Z400.1-2004

Key/Legend

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Services Number
CFR	Code of Federal Regulations
DOT	Department of Transportation
EPA	Environmental Protection Agency
HEPA	High Efficiency Particulate Air
HMIS	Hazardous Material Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMO	International Maritime Organization
NIOSH	National Institute for Occupational Safety and Health
NFPA	National Fire Protection Association
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PPE	Personal Protective Equipment
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA	Time Weighted Average
WHMIS	Workplace Hazardous Materials Information System

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind expressed or implied is made with respect to the information contained herein. This material safety data sheet was prepared to comply with the OSHA Hazard Communication Standard (29 CFR 1910.1200) and with the Workplace Hazardous Materials Information System (WHMIS).

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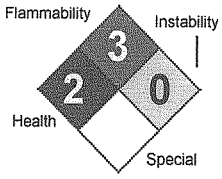
MATERIAL SAFETY DATA SHEET

Klean-Strip Lacquer Thinner

HEALTH	2
FLAMMABILITY	2
PHYSICAL HAZ.	1
PPE	G



Printed: 03/30/2006
Revision: 03/15/2006

Date Created: 12/13/2005

1. Product and Company Identification

Product Code: QML170
Product Name: Klean-Strip Lacquer Thinner
Reference #: 1605.34
Manufacturer Information
Company Name: W. M. Barr
2105 Channel Avenue
Memphis, TN 38113
Phone Number: (901)775-0100
Emergency Contact: 3E 24 Hour Emergency Contact (800)451-8346
Information: W.M. Barr Customer Service (800)398-3892
Web site address: www.wmbarr.com
Preparer Name: W.M. Barr and Company, Inc. (901)775-0100

2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA TWA	ACGIH TWA	Other Limits
1. Methanol	67-56-1	20.0 -25.0 %	200 ppm	200 ppm	
2. Toluene	108-88-3	5.0 -10.0 %	200 ppm	50 ppm	
3. Acetone	67-64-1	5.0 -20.0 %	1000 ppm	500 ppm	
4. Acetic acid, Ethyl ester	141-78-6	5.0 -15.0 %	400 ppm	400 ppm	
5. Hexane, Light aliphatic naptha	64742-89-8	30.0 -50.0 %			
6. Methyl ethyl ketone	78-93-3	5.0 -10.0 %	200 ppm	200 ppm	
7. Ethanol, 2-Butoxy-	111-76-2	1.0 -5.0 %	50 ppm	20 ppm	

Hazardous Components (Chemical Name)	CAS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
1. Methanol	67-56-1			250 ppm	
2. Toluene	108-88-3	500 ppm/(10min)	300 ppm		
3. Acetone	67-64-1			750 ppm	
4. Acetic acid, Ethyl ester	141-78-6				
5. Hexane, Light aliphatic naptha	64742-89-8				
6. Methyl ethyl ketone	78-93-3			300 ppm	
7. Ethanol, 2-Butoxy-	111-76-2				

3. Hazards Identification

Emergency Overview

Danger! Extremely flammable. Keep away from heat, sparks, flame and all other sources of ignition. Vapors may cause flash fire or ignite explosively. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and all other sources of ignition during use and until all vapors are gone. Beware of static electricity that may be generated by synthetic clothing and other sources.

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

Potential Health Effects (Acute and Chronic)

Inhalation Acute Exposure Effects:
Vapor harmful. May cause dizziness; headache; watering of eyes; irritation of respiratory tract; weakness; drowsiness; nausea; numbness in fingers, arms and legs; depression of central nervous system; loss of appetite; fatigue; hallucinations; light headedness; visual disturbances; giddiness and intoxication; sleepiness; cough and dyspnea; cold, clammy extremities; diarrhea; vomiting; dilation of pupils; spotted vision. Severe overexposure may cause convulsions; unconsciousness; coma; and death. Intentional misuse of this product by deliberately concentrating and inhaling can be harmful or fatal.

Skin Contact Acute Exposure Effects:
May be absorbed through the skin. May cause irritation; numbness in the fingers and arms; drying of skin; and dermatitis. May cause increased severity of symptoms listed under inhalation.

Eye Contact Acute Exposure Effects:
This material is an eye irritant. May cause irritation; burns; conjunctivitis of eyes; and corneal ulcerations of the eye. Vapors may irritate eyes.

Ingestion Acute Exposure Effects:
Poison. Cannot be made non-poisonous. May be fatal or cause blindness. May cause dizziness; headache; nausea; vomiting; burning sensation in mouth, throat, and stomach; loss of coordination; depression of the central nervous system; narcosis; stupor; gastrointestinal irritation; liver, kidney, and heart damage; diarrhea; loss of appetite; coma and death. May produce symptoms listed under inhalation.

Chronic Exposure Effects:
Reports have associated repeated and prolonged overexposure to solvents with neurological and other physiological damage. Prolonged or repeated contact may cause dermatitis. Prolonged skin contact may result in absorption of a harmful amount of this material. May cause conjunctivitis; gastric disturbances; insomnia; dizziness; headache; weakness; fatigue; nausea; heart palpitations; skin irritation; numbness in hands and feet; permanent central nervous system changes; some loss of memory; pancreatic damage; giddness; visual impairment or blindness; kidney or liver damage; and death. May cause symptoms listed under inhalation.

Signs and Symptoms Of Exposure

Medical Conditions Generally Aggravated By Exposure

Diseases of the skin, eyes, liver, kidneys, central nervous system and respiratory system.

4. First Aid Measures

Emergency and First Aid Procedures

Inhalation:
If user experiences breathing difficulty, move to air free of vapors, Administer oxygen or artificial medical assistance can be rendered.

Skin Contact:
Wash with soap and large quantities of water and seek medical attention if irritation from contact persists.

Eye Contact:
Flush with large quantities of water for at least 15 minutes and seek immediate medical attention.

Ingestion:
Call your local poison control center, hospital emergency room or physician immediately for instructions to induce vomiting.

Note to Physician

Poison. This product contains methanol. Methanol is metabolized to formaldehyde and formic acid. These metabolites may cause metabolic acidosis, visual disturbances and blindness. Since metabolism is required for these toxic symptoms, their onset may be delayed from 6 to 30 hours following ingestion. Ethanol competes for the same metabolic pathway and has been used as an antidote. Methanol is effectively removed by hemodialysis. Call your local poison control center for further information.

5. Fire Fighting Measures

Flammability Classification:	Class IB
Flash Pt:	4.00 F Method Used: TOC
Explosive Limits:	LEL: 1.00 UEL:

Fire Fighting Instructions

Self-contained respiratory protection should be provided for fire fighters fighting fires in buildings or confined areas. Storage containers exposed to fire should be kept cool with water spray to prevent pressure build-up. Stay away from heads of containers that have been exposed to intense heat or flame.

Flammable Properties and Hazards

Extinguishing Media

Use carbon dioxide, dry powder, or foam.

Unsuitable Extinguishing Media

6. Accidental Release Measures

Steps To Be Taken In Case Material Is Released Or Spilled

Clean up:

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind, out of low areas, and ventilate closed spaces before entering. Shut off ignition sources; keep flares, smoking or flames out of hazard area.

Small spills:

Take up with sand, earth or other noncombustible absorbent material and place in a plastic container where applicable.

Large spills:

Dike far ahead of spill for later disposal.

Waste Disposal:

Dispose in accordance with applicable local, state and federal regulations.

7. Handling and Storage

Precautions To Be Taken in Handling

Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to all regulations. Do not reuse this container.

Precautions To Be Taken in Storing

Keep container tightly closed when not in use. Store in a cool, dry place. Do not store near flames or at elevated temperatures.

8. Exposure Controls/Personal Protection

Respiratory Equipment (Specify Type)

For OSHA controlled work place and other regular users. Use only with adequate ventilation under engineered air control systems designed to prevent exceeding appropriate TLV. For occasional use, where engineered air control is not feasible, use properly maintained and properly fitted NIOSH approved respirator for organic solvent vapors. A dust mask does not provide protection against vapors.

Eye Protection

Safety glasses, goggles or face shields are recommended to safeguard against potential eye contact, irritation, or injury. Contact lenses should not be worn while working with chemicals.

Protective Gloves

Wear impermeable gloves. Gloves contaminated with product should be discarded. Promptly remove clothing that becomes soiled with product.

Other Protective Clothing

Various application methods can dictate use of additional protective safety equipment, such as impermeable aprons, etc., to minimize exposure. A source of clean water should be available in the work area for flushing eyes and skin. Do not eat, drink, or smoke in the work area. Wash hands thoroughly after use. Before reuse, thoroughly clean any clothing or protective equipment that has been contaminated by prior use. Discard any clothing or other protective equipment that cannot be decontaminated, such as gloves or shoes.

Engineering Controls (Ventilation etc.)

Use only with adequate ventilation to prevent build-up of vapors. Open all windows and doors. Use only with a cross ventilation of moving fresh air across the work area. If strong odor is noticed or you experience slight dizziness, headache, nausea, or eye-watering - Stop - ventilation is inadequate. Leave area immediately.

9. Physical and Chemical Properties

Physical States:	[ ] Gas [X] Liquid [ ] Solid
Flash Pt:	4.00 F Method: TOC
Explosive Limits:	LEL: 1.00 UEL:
Specific Gravity (Water = 1):	0.7642 - 0.7829
Percent Volatile:	100.0 % by weight.
VOC / Volume:	697.0000 G/L

Appearance and Odor

Water White / Free and Clear

10. Stability and Reactivity

Stability: Unstable [ ] Stable [X]

Conditions To Avoid - Instability

Incompatibility - Materials To Avoid

Incompatible with strong oxidizing agents, strong caustics, hydrogen peroxide, and nitrates.

Hazardous Decomposition Or Byproducts

Decomposition may produce carbon monoxide; carbon dioxide; formaldehyde; and unidentified organic compounds in black smoke.

Hazardous Polymerization: Will occur [ ] Will not occur [X]

Conditions To Avoid - Hazardous Polymerization

11. Toxicological Information

Toxicological Information

Carcinogenicity/Other Information

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

12. Ecological Information

Ecological Information

13. Disposal Considerations

Waste Disposal Method

14. Transport Information

LAND TRANSPORT (US DOT)

DOT Proper Shipping Name

Additional Transport Information

For DOT information, contact W.M. Barr Technical Services.

15. Regulatory Information

No data available.

16. Other Information

Company Policy or Disclaimer

The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.

Lam glue

Henkel Corporation
1345 Gasket Drive
Elgin, IL 60120
Contact Information:
Telephone: 847-468-9200
Emergency Telephone: 860-571-5100

H.M.I.S.
HEALTH 3*
FLAMMABILITY 4
REACTIVITY 1
These ratings should be used only as part of full implemented H.M.I.S. program.

M A T E R I A L S A F E T Y D A T A S H E E T

SECTION 1 - PRODUCT INFORMATION

DATE OF PREPARATION 9/01/05

TRADE NAME..... BONDRITE WC75 GREEN

PHYSICAL FORM: SOLVENT

MANUFACTURER CODE I.D. WC75G-038 (Formerly a Sovereign Specialty Chemical Inc Product)

SOVEREIGN MANUFACTURER CODE I.D. WC75G 038

SECTION 2 - HAZARDOUS INGREDIENTS/COMPOSITION INFORMATION

INGREDIENT	% BY WGT	CAS NO.		ALLOWABLE EXPOSURE LEVEL PPM	MG/CU.M.	SKIN	SARA 313	VP mm Hg @ 20 DEG.C
ISOBUTANE		75-28-5		NONE ESTABLISHED				
			LFL	1.9	UFL	8.5		
PROPANE		74-98-6	OSHA-PEL	1000	1800			760
			LFL	2.2	UFL	9.5		
METHYLENE CHLORIDE	50	75-09-2	TLV-TWA	50	174		X	350
			OSHA-PEL	25	87			
			OSHA-STEL	125	437	15 MIN		
			LFL	16.0	UFL	66.0		

LFL = LOWER FLAMMABILITY LIMIT PERCENT
UFL = UPPER FLAMMABILITY LIMIT PERCENT
SKIN = SKIN ABSORPTION MUST BE CONSIDERED AS A ROUTE OF EXPOSURE
C-CEILING= ALLOW. EXPOSURE LEVEL SHOULD NOT BE EXCEEDED FOR ANY TIME PERIOD
MFR = MANUFACTURER RECOMMENDED EXPOSURE LIMIT
STEL = SHORT TERM EXPOSURE LIMIT
X-SARA 313 = CHEMICAL IS SUBJECT TO REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF S.A.R.A. 40 CFR PART 372

SECTION 3 - HAZARDS IDENTIFICATION

EFFECTS OF SHORT TERM OVEREXPOSURE

SWALLOWING

Can cause gastrointestinal irritation, nausea, and vomiting. Aspiration of material into lung may cause chemical pneumonitis which can be fatal.

INHALATION

Propane is considered to be a simple asphyxiant by A.C.G.I.H.. Inhalation of excessive amounts may indirectly cause a health hazard by limiting oxygen availability.

Prexisting heart conditions may be aggravated by exposure to Methylene Chloride.

May cause narcotic effects.

Exposure to chlorinated solvents may result in liver and kidney, and heart sensitization.

Overexposure may cause unconsciousness and possible death.

VAPORS MAY DISPLACE OXYGEN AND CAUSE DIZZINESS UNCONSCIOUSNESS AND DEATH.

SECTION 3 - HAZARDS IDENTIFICATION (Continued)

INHALATION

May cause nose or throat irritation. High concentrations may cause acute central nervous system depression characterized by headaches, dizziness, nausea and confusion.

Reduces the blood's oxygen-carrying capacity by the formation of carboxy-hemoglobin. Reduced blood oxygen levels may be harmful to users, especially those with existing heart disease.

EYE

May cause severe eye irritation.

SKIN

May be absorbed through the skin in harmful amounts.

Skin contact with material exiting cylinder may cause frostbite. Eye and respiratory system contact will cause irritation and possible thermal(cold-frostbite) tissue damage.

May cause severe skin irritation.

EFFECTS OF REPEATED OVEREXPOSURE

None currently known

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH.

Methylene Chloride has been identified as a potential carcinogen by the International Agency For Reseacrh on Cancer (IARC Group 2B - Probable Human Carcinogen) and as a substance "Reasonably Anticipated To Be A Carcinogen" by the National Toxicology program (NTP Group 2). These classifications are based on animal studies (mice & rats) which indicated a dose related incidences in lung, liver and mammary tumors. Human epidemolgical studies indicate that the potential carcinogenic effect of methylene chloride is dose dependent. This is supported by the observation of an increased incidence of liver cancer subsequent to high exposure (140 -470 ppm) in a film production plant. Workers in another facility who were exposed to a much lower concentration (26 ppm) showed no increase in cause specific death.

SECTION 4 - FIRST-AID MEASURES

SWALLOWING

If swallowed immediately give 1 or 2 glasses of water and call a Poison Control Center, Hospital Emergency Room, or Physician for way to induce vomiting. (Never give anything by mouth to an unconscious person).

INHALATION

Remove to fresh air immediately. If breathing has stopped, give artificial respiration. Keep warm and quiet. Get medical attention immediately.

EYE

Flush with large amounts of water, lifting upper and lower lids occasionally. Continue for at least 15 minutes. Get medical attention.

SKIN

Remove contaminated clothing. Wash affected area with soap and water. Obtain medical attention if irritation persists.

NOTES TO PHYSICIAN

Do not give stimulants. Epinephrine or ephedrine may adversely affect the heart with fatal results.

SECTION 5 - FIRE-FIGHTING MEASURES

NFPA FLAMMABILITY CLASSIFICATION FLAMMABLE LIQUID - CLASS IA

FLASHPOINT -156 DEG.F,SFCC (-104 DEG.C,)

EXTINGUISHING MEDIA

Use NFPA Class B Fire extinguishers (carbon dioxide, all purpose dry chemical or alcohol foam) designed to extinguish flammable liquid fires. Polymer foam is preferred for large fires.

UNUSUAL FIRE AND EXPLOSION HAZARDS

During emergency conditions, overexposure to decompostion products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

This product contains halogenated hydrocarbons; contact with aluminum

SECTION 5 - FIRE-FIGHTING MEASURES (Continued)

UNUSUAL FIRE AND EXPLOSION HAZARDS

may cause violent reaction and or explosion.
Properly designed and installed "explosion proof" electrical equipment is required. Refer to NFPA 30, NFPA 49, 29 CFR 1910.106 and 29CFR 1910.110. Manufacturer's of Methylene Chloride report no flash point using the TOC, TCC, and COC methods. However, it is known that methylene chloride does have a flammable range 14% (LFL) and 22% (UFL) at 25 deg C. These represent very high concentrations that would present very serious employee exposures relative to OSHA and ACGIH standards. Due to the lack of a typical flashpoint some confusion exists regarding the assignment of HMIS flammability ratings. Some suppliers have suggested that a flammability rating of 1 should be assigned to methylene chloride. Others suggest that the lack of a true flashpoint requires that a zero flammbility rating be assigned. Prevent circumstances which would result in methylene chloride concentrations within the flammable range as well as exposure of liquid or vapor to sources of ignition. Please keep in mind that the presence of other flammable substances in this or other product mixtures may alter the flashpoint and increase the flash fire risk and the HMIS flammability rating.
DANGER! EXTREMELY FLAMMABLE. VAPORS MAY CAUSE FLASH FIRE.
VAPOR OR CONTAINER MAY EXPLODE IF EXPOSED TO FLAME, HEAT, OR OTHER IGNITION SOURCE.
Isolate from heat, electrical equipment, sparks and flame. Containers may explode when exposed to extreme heat. Store in separate and enclosed area that will contain cans if they should explode at elevated temperatures.
Do not apply to very hot surfaces.

SPECIAL FIRE FIGHTING PROCEDURES

Firefighters should wear self-contained breathing apparatus.
Water may be ineffective, but may be used to cool exposed containers to prevent pressure build-up and possible auto-ignition or explosion when exposed to extreme heat. If water is used, fog nozzles are preferable.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

The use of a NIOSH/MSHA approved, TC19C, air-supplied breathing apparatus may be required. Consult with a qualified occupational health and /or safety professional.
Wear respirators, eye, hand, and body protection appropriate for the size of the spill and the exposures encountered.
Keep spectators away. Eliminate all ignition sources (flames, hot surfaces, and sources of electrical, static or frictional sparks).
Dike and contain spill with inert material (e.g. sand, earth). Transfer liquids to covered metal containers for recovery or disposal, or remove with inert absorbent. Use only non-sparking tools. Place absorbent diking materials in covered metal containers for disposal. Prevent contamination of sewers, streams, and groundwater with spilled material or used absorbent.

WASTE DISPOSAL

Dispose in accordance with federal, state and local regulations.
Observe precautions for disposal of flammable materials.

RCRA CLASSIFICATION

This product, if discarded directly, would be classified a hazardous waste based on its ignitability characteristic, i.e. has a flash point of 140 deg. F.(60 deg.C) or less. The proper RCRA classification would be D001.

ENVIRONMENTAL HAZARDS

None known

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

DO NOT INCINERATE, PUNCTURE OR MISHANDLE CONTAINER VALVES OR HOSES. ALL ATTACHMENTS MUST BE IN GOOD CONDITION AND PROPERLY DESIGNED FOR USE WITH THIS CONTAINER.

SECTION 7 - HANDLING AND STORAGE (Continued)

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Do not store above 115 deg.F (46 deg.C) store large quantities in compliance with OSHA 29CFR1910.106.

Exposure to direct sunlight or other sources of heat may cause container to rupture or explode.

OTHER PRECAUTIONS

THIS PRODUCT IS INTENDED TO BE USED ONLY BY THE PROFESSIONAL (INDUSTRIAL) APPLICATOR UNDER PROPERLY CONTROLLED CONDITIONS. A QUALIFIED OCCUPATIONAL HEALTH PROFESSIONAL SHOULD EVALUATE EXPOSURES TO THIS PRODUCT.

THE USE OF THIS PRODUCT IN CONFINED AREAS MAY RESULT IN DANGEROUS AIRBORNE CONCENTRATIONS. THIS MAY CAUSE THE SERIOUS HEALTH EFFECTS DESCRIBED IN SECTION III OF THIS MSDS.

If cylinder is returnable do not dispose. Read canister/cylinder label for additional information. Return via authorized agent, ensuring the canister/cylinder is properly labeled with valve outlet, plugs or caps secured and valve protection in place. Protect cylinders from physical damage. Non-returnable cylinders/canisters must be disposed of in accordance with local, state and federal regulations. Store in cool dry, well ventilated area.

Do not puncture or incinerate. Do not spray near flame or hot surfaces. Avoid breathing vapor or spray mist. Keep out of reach of children.

SECTION 8 - EXPOSURE CONTROLS

RESPIRATORY PROTECTION

Proper selection of respiratory protection depends upon many factors including duration/level of exposure and conditions of use. In general exposure to organic chemicals such as those contained in this product may not require the use of respiratory protection if used in well ventilated areas. In restricted ventilation areas a NIOSH approved chemical cartridge respirator may be required. Under certain conditions, such as spraying, a mechanical prefilter may also be required. In confined areas use a NIOSH/MSHA approved air supplied respirator. If the TLV's listed in Section II are exceeded use a properly fitted NIOSH/MSHA approved respirator with an appropriate protection factor. Refer to OSHA 29 CFR 1910.134 "Respiratory Protection", and "Respiratory Protection A Manual And Guideline, American Industrial Hygiene Assoc."

VENTILATION

SUPPLIED AIR RESPIRATORS MAY BE REQUIRED. CONSULT WITH AN INDUSTRIAL HYGIENE OR SAFETY PROFESSIONAL FOR INFORMATION REGARDING RESPIRATOR USE AND VENTILATION DESIGN.

Provide general dilution and local exhaust ventilation in sufficient volume and pattern to keep concentrations of hazardous ingredients listed in Section II below the lowest exposure limit stated. Remove decomposition products that are generated when welding, cutting, or brazing objects coated with this product. Refer to "Industrial Ventilation - A Manual of Recommended Practice " ACGIH .

HAND PROTECTION

Wear appropriate impermeable gloves (North- Silver Shield).

EYE PROTECTION

Wear safety glasses meeting the specifications of ANSI Z87.1 where no contact with the eye is anticipated. Chemical safety goggles meeting the specifications of ANSI Z87.1 should be worn whenever there is a possibility of splashing or other contact with the eyes.

OTHER PROTECTIVE EQUIPMENT

Eyewash facility, safety shower.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE -44 DEG.F. (-42 DEG.C.) TO 106 DEG.F.(41 DEG.C.)

VAPOR DENSITY Heavier than air. % VOLATILE BY VOLUME 85

EVAPORATION RATE VOC 3.56 lb/gal less water& NPRS* 427 g/l less water CALCULATED
Slower than diethyl ether.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES (Continued)

WEIGHT LB./GAL. 7.0 VOC 16.91 lb/gal solids 2029 g/l solids CALCULATED
SPECIFIC GRAVITY 0.8

All Physical data determined at 68 DEG. F. (20 DEG. C.) 760 mm Hg
* Negligibly Photochemically Reactive Materials

SECTION 10 - STABILITY AND REACTIVITY

STABILITY
Avoid open flames, welding arcs or other high temperature sources which induce thermal decomposition.
CONDITIONS TO AVOID
Avoid excessive heat (>115 F (46 C) and sources of ignition.
INCOMPATABILITY (MATERIALS TO AVOID)
Aluminum
Strong acids or alkaline materials.
Oxidizing materials.
This product contains halogenated hydrocarbons which may react with aluminum. Avoid contact with aluminum in situations in which pressures may be elevated or in which reactions may be enclosed. Do not use spray equipment systems containing aluminum parts.
HAZARDOUS DECOMPOSITION PRODUCTS
Burning, including when heated by welding or cutting, will produce smoke, carbon monoxide and carbon dioxide.In addition, phosgene,formaldehyde ,hydrogen chloride,chlorine,may be generated.
HAZARDOUS POLYMERIZATION
Will not occur
CONDITIONS TO AVOID
This product contains halogenated hydrocarbons which may decompose to form hydrogen chloride, chlorine, and phosgene when in contact with hot surfaces, open flames, and U.V. radiation. Do not use this material near welding operations.

SECTION 11 - TOXICOLOGICAL INFORMATION

No information available.

SECTION 12 - ECOLOGICAL INFORMATION

No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

See Section 6.

SECTION 14 - TRANSPORT INFORMATION

ITEM: WC75G-038 DESC/SIZE: BONDRITE WC75 GREEN

MODE	PROPER SHIPPING NAME	CLASS	I.D.#	PKG GRP

NOTE! The assignment of Proper Shipping Names is in part a function of the size of the product container and the transport mode. For example, the Proper Shipping Name for a bulk container can differ significantly from the Proper Shipping Name for the same product packaged in a non-bulk container. This can also be true for products shipped via different modes of transportation (i.e. ground, air, ocean). The descriptions provided above are intended to provide some guidance. However, these descriptions may not apply to your package size or mode of shipment.
The U.S. Code of Federal Regulations, 49 CFR - Transportation, regulations, and the policies established by some transporters, require that the shipper

SECTION 14 - TRANSPORT INFORMATION (Continued)

properly classify and assign a Proper Shipping Name, and label, mark and package the material properly. Therefore, the user of this information is cautioned to consult with applicable regulations, and with qualified advisors prior to the repackaging and or reshipment of this or other any product which contain this product.

SECTION 15 - REGULATORY INFORMATION

All ingredients in this product are listed on the US TSCA Inventory.

WARNING: This product contains
METHYLENE CHLORIDE;
a chemical known to the State of California to cause cancer.

INGREDIENT	CAS NO.	DETAIL INVENTORY LIST INFORMATION
ISOBUTANE	75-28-5	DSL
PROPANE	74-98-6	DSL
METHYLENE CHLORIDE	75-09-2	TSCA(8a CAIR) TSCA(8a PAIR) TSCA(8d) DSL

DETAIL INVENTORY LIST DESCRIPTION

TSCA/Toxic Substances Control Act
(8a CAIR)Comprehensive Assessment Information Rules
(8a PAIR)Preliminary Assesment Information Rules
(8d)Health and Safety Reporting Rules
DSL/Canadian Domestic Substance List

SECTION 16 - OTHER INFORMATION

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For Safety and Regulatory Information contact:
Product Safety and Regulatory Affairs,
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860-571-5204

ıkel Corporation
15 Gasket Drive
gin, IL 60120
ıtact Information:
lephone: 847-468-9200
ergency Telephone: 860-571-5100

H.M.I.S.
HEALTH 3*
FLAMMABILITY 4
REACTIVITY 1
These ratings should be used only as part of full implemented H.M.I.S. program.

M A T E R I A L S A F E T Y D A T A S H E E T

SECTION 1 - PRODUCT INFORMATION

DATE OF PREPARATION 9/06/06

TRADE NAME..... BONDRITE WC75 GRN CANISTR/177# PHYSICAL FORM: SOLVENT

MANUFACTURER CODE I.D. WC75G-177 (Formerly a Sovereign Specialty Chemical Inc Product)

SOVEREIGN MANUFACTURER CODE I.D. WC75G 177

SECTION 2 - HAZARDOUS INGREDIENTS/COMPOSITION INFORMATION

INGREDIENT	% BY WGT	CAS NO.		ALLOWABLE EXPOSURE LEVEL PPM	MG/CU.M.	SKIN	SARA 313	VP mm Hg @ 20 DEG.C
SOBUTANE		75-28-5	TLV-TWA	1000				
			LFL 1.9		UFL 8.5			
OPANE		74-98-6	TLV-TWA	1000	1800			760
			OSHA-PEL	1000	1800			
			LFL 2.2		UFL 9.5			
THYLENE CHLORIDE	50	75-09-2	TLV-TWA	50	174		X	350
			OSHA-PEL	25	87			
			OSHA-STEL	125	437	15 MIN		
			LFL 16.0		UFL 66.0			

L = LOWER FLAMMABILITY LIMIT PERCENT
L = UPPER FLAMMABILITY LIMIT PERCENT
IN = SKIN ABSORPTION MUST BE CONSIDERED AS A ROUTE OF EXPOSURE
CEILING= ALLOW. EXPOSURE LEVEL SHOULD NOT BE EXCEEDED FOR ANY TIME PERIOD
R = MANUFACTURER RECOMMENDED EXPOSURE LIMIT
EL = SHORT TERM EXPOSURE LIMIT
SARA 313 = CHEMICAL IS SUBJECT TO REPORTING REQUIREMENTS OF SECTION 313
TITLE III OF S.A.R.A. 40 CFR PART 372

SECTION 3 - HAZARDS IDENTIFICATION

ECTS OF SHORT TERM OVEREXPOSURE
WALLOWING
Can cause gastrointestinal irritation, nausea, and vomiting. Aspiration of material into lung may cause chemical pneumonitis which can be fatal.
NHALATION
Contains asphyxiant. Inhalation of excessive amounts may cause a health hazard by limiting oxygen availability. The risk of oxygen depletion will be higher in confined or poorly ventilated areas. oxygen depletion may be fatal.
Prexisting heart conditions may be aggravated by exposure to Methylene Chloride.
May cause narcotic effects.
Exposure to chlorinated solvents may result in liver and kidney, and heart sensitization.

SECTION 3 - HAZARDS IDENTIFICATION (Continued)

INHALATION

Overexposure may cause unconsciousness and possible death.
VAPORS MAY DISPLACE OXYGEN AND CAUSE DIZZINESS UNCONSCIOUSNESS AND DEATH.
May cause nose or throat irritation. High concentrations may cause acute central nervous system depression characterized by headaches, dizziness, nausea and confusion.
Reduces the blood's oxygen-carrying capacity by the formation of carboxy-hemoglobin. Reduced blood oxygen levels may be harmful to users, especially those with existing heart disease.

EYE

May cause severe eye irritation.

SKIN

May be absorbed through the skin in harmful amounts.
Skin contact with material exiting cylinder may cause frostbite. Eye and respiratory system contact will cause irritation and possible thermal(cold-frostbite) tissue damage.
May cause severe skin irritation.

FECTS OF REPEATED OVEREXPOSURE

Solvent exposure may result in liver and kidney, and heart sensitization.

GNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH.

Methylene Chloride has been identified as a potential carcinogen by the International Agency For Research on Cancer (IARC Group 2B - Probable Human Carcinogen) and as a substance "Reasonably Anticipated To Be A Carcinogen" by the National Toxicology program (NTP Group 2). These classifications are based on animal studies (mice & rats) which indicated a dose related incidences in lung, liver and mammary tumors. Human epidemolgical studies indicate that the potential carcinogenic effect of methylene chloride is dose dependent. This is supported by the observation of an increased incidence of liver cancer subsequent to high exposure (140 -470 ppm) in a film production plant. Workers in another facility who were exposed to a much lower concentration (26 ppm) showed no increase in cause specific death.

SECTION 4 - FIRST-AID MEASURES

ALLOWING

If swallowed immediately give 1 or 2 glasses of water and call a Poison Control Center, Hospital Emergency Room, or Physician for way to induce vomiting. (Never give anything by mouth to an unconscious person).
If swallowed do not induce vomiting. (Never give anything by mouth to an unconscious person). Call Poison Control Center , Hospital Emergency Room, or Physician immediately.

HALATION

Remove to fresh air immediately. If breathing has stopped, give artificial respiration. Keep warm and quiet. Get medical attention immediately.

E

Flush with large amounts of water, lifting upper and lower lids occasionally. Continue for at least 15 minutes. Get medical attention immediately.

IN

Remove contaminated clothing. Wash affected area with soap and water.
Obtain medical attention if irritation persists.

TES TO PHYSICIAN

Do not give stimulants. Epinephrine or ephedrine may adversely affect the heart with fatal results.

SECTION 5 - FIRE-FIGHTING MEASURES

PA FLAMMABILITY CLASSIFICATION FLAMMABLE LIQUID - CLASS IA

ASHPOINT -156 DEG.F,SFCC (-104 DEG.C,)

TINGUISHING MEDIA

Contains Flammable Gas.
Use NFPA Class B Fire extinguishers (carbon dioxide, all purpose dry chemical or alcohol foam) designed to extinguish flammable liquid fires. Poly-

SECTION 5 - FIRE-FIGHTING MEASURES (Continued)

TINGUISHING MEDIA
mer foam is preferred for large fires.
USUAL FIRE AND EXPLOSION HAZARDS
During emergency conditions, overexposure to decompostion products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.
This product contains halogenated hydrocarbons; contact with aluminum may cause violent reaction and or explosion.
Properly designed and installed "explosion proof" electrical equipment is required. Refer to NFPA 30, NFPA 49, 29 CFR 1910.106 and 29CFR 1910.110. Manufacturer's of Methylene Chloride report no flash point using the TOC, TCC, and COC methods. However, it is known that methylene chloride does have a flammable range 14% (LFL) and 22% (UFL) at 25 deg C. These represent very high concentrations that would present very serious employee exposures relative to OSHA and ACGIH standards. Due to the lack of a typical flashpoint some confusion exists regarding the assignment of HMIS flammability ratings. Some suppliers have suggested that a flammability rating of 1 should be assigned to methylene chloride. Others suggest that the lack of a true flashpoint requires that a zero flammbility rating be assigned. Prevent circumstances which would result in methylene chloride concentrations within the flammable range as well as exposure of liquid or vapor to sources of ignition. Please keep in mind that the presence of other flammable substances in this or other product mixtures may alter the flashpoint and increase the flash fire risk and the HMIS flammability rating.
DANGER! EXTREMELY FLAMMABLE. VAPORS MAY CAUSE FLASH FIRE.
VAPOR OR CONTAINER MAY EXPLODE IF EXPOSED TO FLAME, HEAT, OR OTHER IGNITION SOURCE.
Isolate from heat, electrical equipment, sparks and flame. Containers may explode when exposed to extreme heat. Store in separate and enclosed area that will contain cans if they should explode at elevated temperatures.
Do not apply to very hot surfaces.
ECIAL FIRE FIGHTING PROCEDURES
Firefighters should wear self-contained breathing apparatus.
Water may be ineffective, but may be used to cool exposed containers to prevent pressure build-up and possible auto-ignition or explosion when exposed to extreme heat. If water is used, fog nozzles are preferable.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

EPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED
The use of a NIOSH/MSHA approved, TC19C, air-supplied breathing apparatus may be required. Consult with a qualified occupational health and /or safety professional.
Refer to Section 8 and don respirators, eye, hand, and body protection appropriate for the size of the spill and the exposures encountered.
Keep spectators away. Eliminate all ignition sources (flames, hot surfaces, and sources of electrical, static or frictional sparks).
Dike and contain spill with inert material (e.g. sand, earth). Transfer liquids to covered metal containers for recovery or disposal, or remove with inert absorbent. Use only non-sparking tools. Place absorbent diking materials in covered metal containers for disposal. Prevent contamination of sewers, streams, and groundwater with spilled material or used absorbent.
DANGER! Flammable Gas. Forms explosive mixtures with air. Immediately evacuate all personnel. Notify fire department. If cylinder is leaking only attempt to close valve or move cylinder outdoors if safe as determined by supervisor, fire fighter or qualified safety professional.
STE DISPOSAL
Dispose in accordance with federal, state and local regulations.
Observe precautions for disposal of flammable materials.
A CLASSIFICATION
This product, if discarded directly, would be classified a hazardous waste based on its ignitability characteristic, i.e. has a flash point of 140 deg. F.(60 deg.C) or less. The proper RCRA classification would be D001.

SECTION 6 - ACCIDENTAL RELEASE MEASURES (Continued)

ENVIRONMENTAL HAZARDS
None known.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE
DO NOT INCINERATE, PUNCTURE OR MISHANDLE CONTAINER VALVES OR HOSES. ALL ATTACHMENTS MUST BE IN GOOD CONDITION AND PROPERLY DESIGNED FOR USE WITH THIS CONTAINER.
Do not store above 115 deg.F (46 deg.C) store large quantities in compliance with OSHA 29CFR1910.106.
Exposure to direct sunlight or other sources of heat may cause container to rupture or explode.

OTHER PRECAUTIONS
THIS PRODUCT IS INTENDED TO BE USED ONLY BY THE PROFESSIONAL (INDUSTRIAL) APPLICATOR UNDER PROPERLY CONTROLLED CONDITIONS. A QUALIFIED OCCUPATIONAL HEALTH PROFESSIONAL SHOULD EVALUATE EXPOSURES TO THIS PRODUCT.
THE USE OF THIS PRODUCT IN CONFINED AREAS MAY RESULT IN DANGEROUS AIRBORNE CONCENTRATIONS. THIS MAY CAUSE THE SERIOUS HEALTH EFFECTS DESCRIBED IN SECTION III OF THIS MSDS.
If cylinder is returnable do not dispose. Read canister/cylinder label for additional information. Return via authorized agent, ensuring the canister/cylinder is properly labeled with valve outlet, plugs or caps secured and valve protection in place. Protect cylinders from physical damage. Non-returnable cylinders/canisters must be disposed of in accordance with local, state and federal regulations. Store in cool dry, well ventilated area.
Do not puncture or incinerate. Do not spray near flame or hot surfaces. Avoid breathing vapor or spray mist. Keep out of reach of children.

SECTION 8 - EXPOSURE CONTROLS

RESPIRATORY PROTECTION
Proper selection of respiratory protection depends upon many factors including duration/level of exposure and conditions of use. In general exposure to organic chemicals such as those contained in this product may not require the use of respiratory protection if used in well ventilated areas. In restricted ventilation areas a NIOSH approved chemical cartridge respirator may be required. Under certain conditions, such as spraying, a mechanical prefilter may also be required. In confined areas use a NIOSH/MSHA approved air supplied respirator. If the TLV's listed in Section II are exceeded use a properly fitted NIOSH/MSHA approved respirator with an appropriate protection factor. Refer to OSHA 29 CFR 1910.134 "Respiratory Protection", and "Respiratory Protection A Manual And Guideline, American Industrial Hygiene Assoc."

VENTILATION
SUPPLIED AIR RESPIRATORS MAY BE REQUIRED. CONSULT WITH AN INDUSTRIAL HYGIENE OR SAFETY PROFESSIONAL FOR INFORMATION REGARDING RESPIRATOR USE AND VENTILATION DESIGN.
Provide general dilution and local exhaust ventilation in sufficient volume and pattern to keep concentrations of hazardous ingredients listed in Section II below the lowest exposure limit stated. Remove decomposition products that are generated when welding, cutting, or brazing objects coated with this product. Refer to "Industrial Ventilation - A Manual of Recommended Practice " ACGIH .

HAND PROTECTION
Wear appropriate impermeable gloves (North- Silver Shield).

EYE PROTECTION
Wear safety glasses meeting the specifications of ANSI Z87.1 where no contact with the eye is anticipated. Chemical safety goggles meeting the specifications of ANSI Z87.1 should be worn whenever there is a possibility of splashing or other contact with the eyes.

OTHER PROTECTIVE EQUIPMENT
Eyewash facility, safety shower.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE -44 DEG.F. (-42 DEG.C.) TO 106 DEG.F.(41 DEG.C.)

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES (Continued)

POR DENSITY Heavier than air. % VOLATILE BY VOLUME 85

APORATION RATE VOC 3.56 lb/gal less water& NPRS* 427 g/l less water CALCULATED
Slower than diethyl ether.

IGHT LB./GAL. 7.0 VOC 16.91 lb/gal solids 2029 g/l solids CALCULATED
PECIFIC GRAVITY 0.8

1 Physical data determined at 68 DEG. F. (20 DEG. C.) 760 mm Hg
Negligibly Photochemically Reactive Materials

SECTION 10 - STABILITY AND REACTIVITY

BILITY
Avoid open flames, welding arcs or other high temperature sources which induce thermal decomposition.
ONDITIONS TO AVOID
Avoid excessive heat (>115 F (46 C) and sources of ignition.
OMPATABILITY (MATERIALS TO AVOID)
Aluminum
Strong acids or alkaline materials.
Oxidizing materials.
This product contains halogenated hydrocarbons which may react with aluminum. Avoid contact with aluminum in situations in which pressures may be elevated or in which reactions may be enclosed. Do not use spray equipment systems containing aluminum parts.
ARDOUS DECOMPOSITION PRODUCTS
Burning, including when heated by welding or cutting, will produce smoke, carbon monoxide and carbon dioxide. In addition, phosgene, formaldehyde ,hydrogen chloride,chlorine, may be generated.
ARDOUS POLYMERIZATION
Will not occur
ONDITIONS TO AVOID
This product contains halogenated hydrocarbons which may decompose to form hydrogen chloride, chlorine, and phosgene when in contact with hot surfaces, open flames, and U.V. radiation. Do not use this material near welding operations.

SECTION 11 - TOXICOLOGICAL INFORMATION

No information available.

SECTION 12 - ECOLOGICAL INFORMATION

No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

See Section 6.

SECTION 14 - TRANSPORT INFORMATION

M: WC75G-177 DESC/SIZE: BONDRITE WC75 GRN CANISTR/177#

DE PROPER SHIPPING NAME CLASS I.D.# PKG GRP
NOTE! The assignment of Proper Shipping Names is in part a function of the size of the product container and the transport mode. For example, the Proper Shipping Name for a bulk container can differ significantly from the Proper Shipping Name for the same product packaged in a non-bulk container. This can also be true for products shipped via different modes of transportation (i.e. ground, air, ocean). The descriptions provided above

SECTION 14 - TRANSPORT INFORMATION (Continued)

are intended to provide some guidance. However, these descriptions may not apply to your package size or mode of shipment.
The U.S. Code of Federal Regulations, 49 CFR - Transportation, regulations, and the policies established by some transporters, require that the shipper properly classify and assign a Proper Shipping Name, and label, mark and package the material properly. Therefore, the user of this information is cautioned to consult with applicable regulations, and with qualified advisors prior to the repackaging and or reshipment of this or other any product which contain this product.

SECTION 15 - REGULATORY INFORMATION

All ingredients in this product are listed on the US TSCA Inventory.

RNING: This product contains
THYLENE CHLORIDE;
hemical known to the State of California to cause cancer.

GREDIENT	CAS NO.	DETAIL INVENTORY LIST INFORMATION
OBUTANE	75-28-5	DSL
OPANE	74-98-6	DSL
THYLENE CHLORIDE	75-09-2	TSCA(8a CAIR) TSCA(8a PAIR) TSCA(8d) DSL

TAIL INVENTORY LIST DESCRIPTION

CA/Toxic Substances Control Act
8a CAIR)Comprehensive Assessment Information Rules
8a PAIR)Preliminary Assesment Information Rules
8d)Health and Safety Reporting Rules
L/Canadian Domestic Substance List

SECTION 16 - OTHER INFORMATION

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation does not assume responsibility for any results obtained by persons over whose methods Henkel Corporation has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any of Henkel Corporation's products. In light of the foregoing, Henkel Corporation specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

For Safety and Regulatory Information contact:
Product Safety and Regulatory Affairs,
Rocky Hill, CT
860-571-5204

Material Safety Data Sheet
May be used to comply with
OSHA's Hazard Communication Standard
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

Identity (As Used on Label and List)
MAPP GAS

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

SECTION 1

Supplier's Name LENOX

Emergency Telephone Number 800-628-8810

Address
Number, Street, City, State and ZIP Code

301 Chestnut Street
East Longmeadow , MA 01028

Telephone Number for Information 800-628-8810

Date Prepared June 14, 2007

Signature of Preparer *(Optional)*

SECTION II - Hazardous Ingredients / Identity Information

Hazardous Components *Specific Chemical Identity, Common Name(s)*	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Liquefied Petroleum Gas w/ Methylacetylene	N/A	N/A	N/A	
Liquefied Petroleum Gas CAS NO. 68476-85-7	1000PPM			56.0
Methyl Acetylene-Propadiene CAS NO. 59355-75-8	1000PPM			44.0

NFPA HAZARD RATINGS
Health - 2
Flammability - 4
Reactivity - 0

HMIS RATINGS
Health -1
Flammability - 4
Reactivity - 0

Notes

SECTION III - Physical / Chemical Characteristics

Boiling Point -54° F to -10° F

Specific Gravity (H_2O - 1) 0.571

Vapor Pressure (mm Hg) @ 70° F 97 psig

Melting Point N/A

Vapor Density (AIR=1) 1.48

Evaporation Rate Butyl Acetate -1) N/A

Solubility in Water
Slight

Appearance and Odor
Colorless - unpleasant odor at approx. 100ppm

SECTION IV - Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
Closed Cup -156° F	In air by volume	3.0	11.0

Extinguishing Media Eliminate oxygen source or stop flow of gas. Use water to cool cylinder. Dry chemical or CO_2 to reduce oxygen.

Special Fire Fighting Procedures
Cool cylinders with water. Keep personnel away.

Unusual Fire and Explosion Hazards Auto Ignition temp. 850° F. Keep ignition sources away from cylinder and continue to cool cylinder until gas flow is shut off. Escaping gas from cylinder may be ignited.

SECTION V - Reactivity Data

Stability → Unstable
Stable X

Conditions to Avoid
Do not expose to tempatures above 125° F.

Incompatibility (Materials to Avoid)
Extremely flammable. Avoid uncontrolled contact with oxidizers.

Hazardous Decomposition or Byproducts
None

Hazardous Polymerization → May Occur
Will Not Occur X

Conditions to Avoid
N/A

SECTION VI - Health Hazard Data

Routes of Entry →	Inhalation?	Skin?	Ingestion?
	YES	YES	UNLIKELY

Health Hazards (Acute and Chronic)

Asphyxiant. May reduce oxygen required for breathing. Liquid gas may freeze skin.

Carcinogenicity →	NTP?	IARC Monographs?	OSHA Regulated?
	N/A	N/A	NO

Signs and Symptoms of Exposure

Dizziness to unconsciousness if high concentrations of gas replace oxygen for breathing.

Medical Conditions Generally Aggravated by Exposure

N/A

Emergency and First Aid Procedures

Remove person to fresh air.. If unconscious, seek medical attention.

Warning

This fuel, and byproducts of combustion of this fuel, contain chemicals known to the State of California to cause cancer, birth defects, and other reproductive harm.

SECTION VII - Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled

Remove ignition sources. Ventilate area.

Waste Disposal Method

Vent to atmosphere in outdoor area free of all sources of ignition.

Precautions to be Taken in Handling and Storing

Store in well ventilated area away from all ignition sources.
Store at tempatures below 125° F. Store out of direct sunlight.

Other Precautions

N/A

SECTION VIII - Control Measures

Respiratory Protection (Specify Type)

Not required with normal use.

Ventilation →	Local Exhaust	Mechanical (General)	Special	Other
	Advisable when welding.	N/A	N/A	N/A

Protective Gloves	Eye Protection
Advisable when welding.	Use filter shade No. 4 or darker when welding.

Other Protective Clothing or Equipment

N/A

Work / Hygienic Practices

N/A

SECTION IX - Shipping Information

WHMIS Classification: A - Compressed Gas & B1-Flammable Gas		Class: 2.1	
DOT	Proper Shipping Name	Hazard Classification	UN. No.
	Methyl Acetylene and Propadiene Mixtures, Stablized	Flammable Gas	1060

MATERIAL SAFETY DATA SHEET

CODE: M/L 040

This Material Safety Data Sheet complies with the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200

PRODUCT:
LENOX® STERLING® LEAD-FREE SOLDER

NFPA/HMIS HAZARD CODES: HEALTH: 1/1 FIRE: 0/0 REACTIVITY: 0/0 SPECIAL: NA

0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

SECTION I

MANUFACTURER NAME: LENOX®
1690 Lowery Street
Winston-Salem, NC 27101

ISSUE DATE: October, 2004

INFORMATION PHONE: 336-777-8600

SECTION II HAZARDOUS INGREDIENTS

INGREDIENT	CAS NO.	US-NIOSH RTECS NO.	US OSHA AL	US OSHA PEL	ACGIH TLV	WT. PERCENT
Tin	7440-31-5	XP7320000	NE	2.0mg/m3	2.0mg/m3	Balance
Copper	7440-50-8 (dust)	GL5325000	NE	1.0mg/m3	1.0mg/m3	4.0 – 5.0
	(fume)			0.1mg/m3	0.2mg/m3	
Selenium	7782-49-2	VS7700000	NE	0.2mg/m3	0.2mg/m3	.04 - .2

NE = NONE ESTABLISHED AL = ACTION LEVEL PEL = PERMISSIBLE EXPOSURE LIMIT TLV = THRESHOLD LIMIT VALUE

SECTION III PHYSICAL DATA

APPEARANCE & ODOR (AT NORMAL CONDITIONS): Solid - silver to silver-gray metallic metal - no odor
SPECIFIC GRAVITY: 7.38
MELTING POINT RANGE (DEGREES F): 410-418
BOILING POINT (DEGREES C): Information not available
SOLUBILITY IN WATER: Insoluble
PH: Not applicable

SECTION IV FIRE & EXPLOSION HAZARD DATA

FLASH POINT: Non-flammable
FLAMMABLE LIMITS: Not applicable
EXTINGUISHING MEDIA: No specific agents recommended
SPECIAL FIRE FIGHTING PROCEDURES: If involved in fire, use full protective clothing and NIOSH/MSHA approved self-contained breathing apparatus operated in a positive-pressure mode.
UNUSUAL FIRE & EXPLOSION HAZARDS: The solid metal form is not a fire hazard. However, it is possible that dust generated from processing operations may present a moderate fire or explosion hazard.

SECTION V REACTIVITY DATA

STABILITY: Stable
CONDITIONS TO AVOID: Not applicable
INCOMPATIBILITY: Chlorine, Turpentine, Magnesium, and Acetylene Gas
HAZARDOUS DECOMPOSITION PRODUCTS: At temperatures above the melting point metal oxide fumes may be evolved.
HAZARDOUS POLYMERIZATION: Will not occur.

SECTION VI HEALTH HAZARD DATA

NOTE: Exposure to the solid form of this product presents few health hazards in itself. However, normal handling or processing of this material may result in exposure to product components and/or decomposition products, which may present a health hazard.

ROUTES OF ENTRY: Dust/fume inhalation; dust ingestion.

SYMPTOMS & EFFECTS OF OVEREXPOSURE:

Chronic (prolonged) overexposure to **Tin** can result in benign pneumoconiosis (stannous). This form of pneumoconiosis produces progressive x-ray changes of the lungs as long as exposure exists, but there is no distinctive fibrosis, no evidence of disability and no special complicating factors.

Acute (severe short-term) overexposure to **Tin** can cause irritation of the eyes, skin, mucous membranes and respiratory system. Acute overexposure to **Copper** dust/fume can cause irritation of the eyes, nose, throat and skin, and under severe fume overexposure can cause metal fume fever with flu-like symptoms such as sweet metal taste, dry throat, coughing, fever and chills, tight chest, dyspnea, headache, blurred vision, back pain, nausea, vomiting, fatigue. Symptoms usually disappear within 24 hours. **Copper** may cause skin and hair discoloration. Inhalation of copper dusts may cause changes in the gums and mucous lining of the mouth which is generally attributable to localized tissue effect rather than general toxicity.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE: Pre-existing conditions of the lungs, Wilson's Disease (genetic trait)

CARCINOGENITY: Not listed as a carcinogen by NTP, IARC, OSHA, ACGIH.

EMERGENCY & FIRST AID PROCEDURES:

SKIN: Normal hygiene and first aid procedures - wash with soap and water. If irritation develops or persists obtain medical attention get medical attention.

EYES: Flush well with running water to remove particulate. If irritation persists obtain medical attention.

ACUTE INHALATION: Remove from exposure. Obtain immediate medical attention. If breathing has stopped, initiate artificial resuscitation.

INGESTION: Give water; induce vomiting only in a conscious non-convulsing individual; Obtain immediate medical attention.

SECTION VII PROTECTION MEASURES

RESPIRATORY PROTECTION: Respiratory protection is required where airborne exposures exceed U.S. OSHA/ACGIH permissible air concentrations. Respirator selection shall be made in accordance with the U.S. OSHA Respiratory Protection Standard, 29 CFR 1910.134.

VENTILATION: Ventilation, as described in "Industrial Ventilation, A Manual of Recommended Practice," by the American Conference of Governmental Industrial Hygienists, is recommended to maintain exposure levels below the Permissible Exposure Limits (PEL's) or Threshold Limit Values (TLV's) specified by U.S. OSHA or other local or state regulations.

PROTECTIVE GLOVES: Recommended for prolonged contact/heat.

EYE PROTECTION: Safety glasses or goggles are recommended where the possibility exists of getting dust particles in the eyes. Safety glasses or goggles with face shield are recommended around molten metal.

OTHER PROTECTIVE EQUIPMENT: Safety equipment should be worn as appropriate for the work environment.

WORK/HYGIENIC PRACTICES: Do not permit eating, drinking, or the use of cosmetics or tobacco products while handling or processing material or in product work areas. Practice good personal hygiene procedures. Wash hands and face thoroughly before eating, drinking, applying cosmetics or using tobacco products. Avoid inhalation and ingestion of product, and activities, which generate dust or fume. Keep melting/soldering temperatures as low as possible to minimize the generation of fume.

SECTION VIII PRECAUTIONS FOR SAFE HANDLING & USE

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING: Practice good housekeeping procedures to prevent dust accumulations. Keep material dry. Avoid storage near incompatible materials (See Section V). Keep product away from children and their environment and domestic animals.

OTHER PRECAUTIONS: Special attention is drawn to the requirements of the U.S. OSHA Respirator 1910.134 should airborne exposures exceed the U.S. OSHA PEL. Inadvertent contaminants to product such as moisture, ice, snow, grease or oil can cause an explosion when charged to a molten metal bath or melting furnace (preheating metal will remove moisture from the product).

SECTION IX SPILL OR LEAK PROCEDURES

SPILL OR LEAK PROCEDURES:

1. Material in dust form-minimize exposure. Clean up using dustless methods (i.e. HEPA Vacuum). Do not use compressed air.
2. Place in closed labeled containers for recycling or disposal.
3. Keep out of waterways.

NOTE: Cleanup personnel should wear protective clothing and respiratory protection where significant dust/fume exposure exists.

OTHER PROCEDURES: For large product users or involving large product quantities, we recommend that the purchaser establish a spill prevention, control and counter measure plan. This plan should include procedures for proper storage as well as clean up of spills or leaks. The procedures should conform to safe practices and provide for proper recovery and/or disposal. Depending on the quantity spilled, notification to the U.S. National Response Center (800-424-8802) may be required in case of hazardous substances. (See USEPA and USDOT regulations: also various state and local regulations.)

WASTE DISPOSAL METHODS: May have value on a recycled basis. If disposed of, dispose of in a permitted disposal site in accordance with all federal, state and local disposal or discharge regulations.

SECTION X UNITED STATES SARA TITLE III INFORMATION

This product/mixture contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the U.S. Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372. The percent by weight of each toxic chemical and its associated chemical abstract system (CAS) number are to be found in Section II of this Material Safety Data Sheet.

CHEMICAL NAME	EHS RQ (LBS) (*1)	EHS TPQ (LBS) (*2)	SEC.313 (*3)	313 CATEGORY (*4)	311-312 CATEGORIES (*5)
Copper	Not Applicable	Not Applicable	YES	Copper	H-1

-FOOTNOTES-

*1 = Reportable quantity of extremely hazardous substance, Section 302.
*2 = Threshold planning quantity, extremely hazardous substance, Section 302.
*3 = Toxic chemical list, Section 313
*4 = Chemical category as required by Section 313 (40 CFR 372.42). Subject to annual release reporting requirements.
*5 = Hazard category for SARA Section 311/312 reporting:

Health
H-1 = Immediate (ACUTE) Health Hazard
H-2 = Delayed (CHRONIC) Health Hazard

Physical
P-3 = Fire Hazard
P-4 = Sudden Release of Pressure Hazard
P-5 = Reactive Hazard

SECTION XI UNITED STATES CERCLA SECTION 103 INFORMATON

This product/mixture contains the following chemicals subject to the release reporting of Section 302.

CHEMICAL NAME	RQ (LBS)
Copper	5000 (*1)

-FOOTNOTES-

*1 = Reportable quantity (RQ) under CERCLA Section 302. Spills to the environment exceeding the reportable quantity in any 24-hour period must be reported to the U.S. National Response Center (800-424-8802). No reporting of releases of the hazardous substance(s) is required if the diameter of the pieces of the solid metal(s) released is equal to or exceeds 100 micrometers (0.004 inches).

SECTION XII TRANSPORTATION INFORMATION

PROPER SHIPPING NAME:	Non-regulated as shipped
TECHNICAL NAME:	N/A
HAZARD CLASS:	N/A
UN NO.:	N/A
PACKING GROUP:	N/A
EMERGENCY RESPONSE GUIDE NUMBER:	N/A
OTHER:	N/A

SECTION XIII ADDITIONAL INFORMATION

VOC CONTENT: None

This Material Safety Data Sheet is offered solely for your information, consideration and investigation. LENOX® provides no warranties, either express or implied, and assumes no responsibilities for the accuracy or completeness of the data contained in this document. The data in this Material Safety Data Sheet relates only to this product and does not relate to use in combination with any other material or in any process.

FACTS Faxed FAST! SM

OSHA-Required Health And Safety Information!

This Material Safety Data Sheet (MSDS) was requested moments ago from Hercules Automated Fax Information System. Please forward it immediately to the person in charge of MSDS's, or retain it at the machine until claimed.

Section 1

MATERIAL SAFETY DATA SHEET # 89

Megaloc™

MATERIAL SAFETY INFORMATION SERVICE™ HERCULES®

Date Prepared: 10/15/1995 **Last Reviewed:** 7/31/2007

Meets OSHA 29 CFR 1910.1200

Hercules Chemical Company Inc.
111 South Street
Passaic NJ 07055
Phone (800) 221-9330
Fax (800) 333-3456

Section 2 - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s), CAS Numbers)	OSHA PEL	ACGIH TLV	Other Limits	Upper Bound Limit if SARA Reportable
This product is not classified as hazardous in accordance with OSHA 1910.1200				

HMIS Hazard Rating: Health: 0 Flammability: 0 Reactivity: 0 Personal Protection: A

Section 3 - Physical/Chemical Characteristics

Boiling Point (°F):	Specific Gravity (H2O = 1):	Vapor Density (Air = 1):	Vapor Pressure (mm Hg):
N/A	1.2	N/A	N/A

Melting Point (° F):	Evaporation Rate: (Butyl Acetate = 1)	Solubility in Water:
N/A	N/A	Insoluble

Appearance And Color: Blue paste **Odor:** None

Section 4 - Fire And Explosion Hazard Data

Flash Point: N/A

Flammable Limits: N/A **LEL:** **UEL:**

Extinguishing Media: Dry chemical, foam, carbon dioxide

Special Firefighting Procedures:
Use water to cool fire-exposed containers. If a leak or spill has not ignited, use water spray to disperse the vapors to provide protection for personnel.

Unusual Fire And Explosion Hazards:
None

Continued on Next Page

Section 5 - Reactivity Data

Stability: Stable **Conditions To Avoid:** Direct contact with open flame.

Incompatability (Materials To Avoid): None known

Hazardous Decomposition: CO2 and CO may form on burning

Hazardous Polymerization: Will not occur

Section 6 - Health Hazard Data

Routes of Entry: **Inhalation** N/A **Skin** YES/Primary **Ingestion** YES/Secondary

Health Hazards:

None

Carcinogenicity: **NTP** NO **IARC** NO **OSHA Regulated** NO

Signs And Symptoms of Exposure:

None: Could be mildly irritating to certain persons on prolonged contact.

Medical Conditions Generally Aggravated By Exposure:

None known

Emergency And First Aid Procedures:

SKIN: Wash with soap and water. EYES: As with most foreign materials should eye contact occur, flush eyes with plenty of water & get medical attention. INGESTION: Do not induce vomiting. Get medical attention.

Continued on Next Page

Section 7 - Precautions For Safe Handling And Use:

Steps To Be Taken In Case Material Is Released Or Spilled:

Use absorbent material and sweep up.

Waste Disposal Method:

Non-hazardous landfill

Precautions To Be Taken In Handling And Storing:

None

Other Precautions:

Keep away from direct contact with open flame or sparks.

Section 8 - Control Measures:

Respiratory Protection:

N/A

Ventilation: **Local Exhaust** Normal ventilation **Special** N/A
Mechanical N/A **Other:** N/A

Gloves: Rubber gloves

Eye Protection: Goggles or safety goggles

Other Protective Clothing: None required

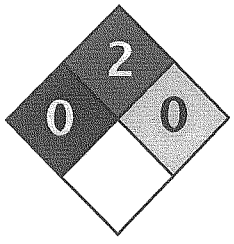
Work/Hygienic Practices: Wash up after handling the material.

HERCULES® MATERIAL SAFETY INFORMATION SERVICE

FACTS Faxed FAST!

For Hercules Material Safety Data Sheets by fax anytime, day or night, just call 1-800-942-INFO (1-800-942-4636) from any Touch-Tone phone. Have your fax number ready. Checking the product label for the correct MSDS # will save time.

ScienceLab.com
Chemicals & Laboratory Equipment



Health	0
Fire	2
Reactivity	0
Personal Protection	H

Material Safety Data Sheet
Mineral spirits MSDS

Section 1: Chemical Product and Company Identification

Product Name: Mineral spirits

Catalog Codes: SLM3616

CAS#: 64475-85-0

RTECS: WJ8925000

TSCA: TSCA 8(b) inventory: Mineral spirits

CI#: Not applicable.

Synonym:

Chemical Name: Not available.

Chemical Formula: Not available.

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Mineral spirits	64475-85-0	100

Toxicological Data on Ingredients: Mineral spirits LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance is toxic to lungs, the nervous system.
Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact: Check for and remove any contact lenses. Do not use an eye ointment. Seek medical attention.

Skin Contact:
After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 245°C (473°F)

Flash Points: CLOSED CUP: 38°C (100.4°F).

Flammable Limits: LOWER: 1%

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not available.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
Flammable liquid, insoluble in water.
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill:
Flammable liquid, insoluble in water.

Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not breathe gas/fumes/ vapour/spray. Wear suitable protective clothing In case of insufficient ventilation, wear suitable respiratory equipment If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes

Storage:
Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. Keep container dry. Keep in a cool place.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Not available.

Taste: Not available.

Molecular Weight: Not available.

Color: Clear Colorless.

pH (1% soln/water): Not applicable.

Boiling Point: 148°C (298.4°F)

Melting Point: Not available.

Critical Temperature: Not available.

Specific Gravity: 0.74 (Water = 1)

Vapor Pressure: 2 mm of Hg (@ 20°C)

Vapor Density: 4.9 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Not considered to be corrosive for metals and glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available.
LC50: Not available.

Chronic Effects on Humans: The substance is toxic to lungs, the nervous system.

Other Toxic Effects on Humans:
Hazardous in case of skin contact (irritant), of ingestion, of inhalation.
Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: CLASS 3: Combustible liquid with a flash point greater than 37.8C (100F).

Identification: : Flammable liquids n.o.s. : UN1993 PG: Not available.

Special Provisions for Transport: No DOT, ref 49CFR, 173.150

Section 15: Other Regulatory Information

Federal and State Regulations: TSCA 8(b) inventory: Mineral spirits

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):
CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
R10- Flammable.
R36/38- Irritating to eyes and skin.

HMIS (U.S.A.):

Health Hazard: 0

Fire Hazard: 2

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 0

Flammability: 2

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves.
Lab coat.
Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 10:50 AM

Last Updated: 11/06/2008 12:00 PM

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall ScienceLab.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if ScienceLab.com has been advised of the possibility of such damages.

NFPA/HMIS Health -2
Flammability - 0
Reactivity - 0

Complies With USDL Safety and Health Regulations, (29 CFR 1910.200)

Material Safety Data Sheet US Department Of Labor

SECTION - 1 CHEMICAL AND COMPANY IDENTIFICATION

PRODUCT NAME: Odorless detergent
PRODUCT USE: Cleaner-Degreaser

Nationwide Restoration
3151 Skylane Dr. Suite 104
Carrollton, TX 75006
Toll Free: 1-866-380-6290

EMERGENCIES: 1-800-255-3924
REVISION DATE: 06/22/00

SECTION - 2 COMPOSITION ON INGREDIENTS

CAS #	CHEMICAL NAMES	Wt%	TLV (UNITS)
9016-45-9	Nonoxynol	< 8.0	N/E

N/E = not established

SECTION - 3 HAZARDS INFORMATION

Primary Route(s) of Entry: Skin contact /absorption and inhalation

Signs and Symptoms of Overexposure:
Gastrointestinal irritation (nausea, vomiting, diarrhea), irritation to nose, throat, and respiratory tract.

Target Organ Effects: None expected.

IMMEDIATE HEALTH EFFECTS

EYES: Exposure may cause noticeable pain, and severe irritation.

SKIN: Exposure may cause mild skin irritation. Prolonged or repeated exposure may dry the skin. Symptoms may include redness, burning, and drying and cracking. Additional symptoms of skin contact may include: allergic reaction. Skin absorption is possible, but harmful effects are not expected from this route of exposure under normal handling and use

INHALATION: Exposure to vapor or mist is possible Short term inhalation is no likely to cause harmful effects: breathing large amounts may be harmful. Symptoms are more typically seen at air concentrations exceeding the recommended exposure limits.

INGESTION: Single dose oral toxicity is low. Swallowing small amounts during normal handling is not likely to cause harmful effects: swallowing large amounts may be harmful.

REPRODUCTIVE / DEVELOPMENTAL INFORMATION No Data

CARCINOGENIC INFORMATION: This material is not listed as a carcinogen by IARC, NTP, or OSHA

LONG TERM EFFECTS: No Data

SECTION - 4 FIRST AID MEASURES

EYES- Immediately flush with water. Remove contact lenses if applicable, and continue flushing with water. call a physician if irritation persists.

SKIN- Flush with water. Wash thoroughly with soap and water. Call physician if irritation persists.

INHALATION- If symptoms develop, move victim to fresh air. If symptoms persist call a physician.

INGESTION- Do not induce vomiting. Rinse mouth with water, then drink one glass of water. Call a physician immediately. Never give anything by mouth if victim is unconscious, is rapidly losing consciousness or is convulsing.

SECTION - 5 FIRE FIGHTING MEASURES

Flash Point No Flash at Boil (C.C. method)
Explosive limits Not Applicable
Hazardous Products of Combustion Not Applicable
Extinguishing Media Not Applicable
Fire Fighting Instructions Avoid walking in spilled material. Avoid contact with this material. Wear protective clothing for skin and eyes

SECTION - 6 ACCIDENTAL RELEASE MEASURES

Small Spill: Absorb with an inert solid and scoop up for disposal, then rinse soiled area with water down the drain.

Large Spill: Stop leak at the source and collect into a suitable container, then treat as a small spill.

SECTION - 7 HANDLING AND STORAGE

Handling: Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

Storage: Store in a cool, dry place. Keep container closed when not in use.

SECTION - 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Eye Protection: Chemical Splash goggle in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Consult your safety representative.

Skin Protection: Wear rubber gloves (consult your safety equipment supplier). To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

Respiratory Protection: If workplace exposure limits of product or any component are exceeded (see exposure guidelines), NIOSH/OSHA approved air supplied respirator is advised in the absence of proper environmental control. OSHA relations also permit other NIOSH/OSHA respirators (negative pressure type) under specific conditions (see your industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.

Engineering Controls: Provide sufficient mechanical (general and local exhaust) ventilation to maintain exposure below level of overexposure (from known, suspected or apparent adverse effects).

SECTION - 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance and odor Thin, red liquid with a bland odor
pH Concentrate 11.5 - 12.5
Vapor Pressure Unknown
Vapor Density Unknown
Boiling Point 212 Degrees Fahrenheit
Solubility In Water Complete
Percent Volatile 90%
Specific Gravity (H2O =1) 1.01 +/- 0.02

SECTION - 10 STABILITY AND REACTIVITY

Chemical Stability Stable
Conditions to Avoid Temperature Extremes
Incompatibility None
Hazardous Decomposition Will not Occur
Hazardous Polymerization Will not Occur

SECTION - 11 TOXICOLOGICAL INFORMATION

No Data Available

SECTION - 12 ECOLOGICAL INFORMATION

No Data Available

SECTION - 13 DISPOSAL CONSIDERATION

Waste Disposal Information: Dispose of in accordance with all applicable Federal, State, and Local regulations.

RCRA Information: If this material becomes a waste, it would not be considered hazardous under 40 CFR 261.22.

SECTION - 14 TRANSPORT INFORMATION

DOT Information 49 CFR 172.101
DOT Description: 33440 Class 55
DOT Hazard Class: Non Hazardous
Hazardous Component: None
Reportable Quantity (RQ) - 49 CFR 172.101
Not Applicable

SECTION - 15 REGULATORY INFORMATION

US Federal Regulations
TSCA (Toxic Substances Control Act) Status
TSCA (United States) The intentional ingredients of this product are listed.
CERCLA RQ - 40 CFR 355 Appendix A None
SARA 302 Components 40 CFR Appendix A None
Section 311/312 Hazard Class 40 CFR 370.2
Immediate (X) Delayed (X) Fire ( ) Reactivity ( )
Sudden Release of Pressure ( )
SARA 313 Components - 40 CFR 372
State and Local Regulations
California Proposition 65 None
California SCAQMD Rule 443.1 VOC's None
North Carolina Administrative Code 2D.1104 and 2B.0610 None
South Carolina Regulation 62.5 Standard Number 8 None

SECTION - 16 OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable and suitable to their circumstances.

This information was compiled from current manufacturer's MSDS's of the component parts of the product, as well as other sources, such as:

Code of Federal Regulations 29. Revised as of July 1 1994.
Code of Federal Regulations 40. Revised as of July 1. 1994.
ACGIH. Guide to Occupational Exposure Values. 1996
ANSI Z129.1-1994. Precautionary Labeling for Hazardous Industrial Chemicals.
Hazard Communication Handbook, A Right To Know Compliance Guide. Craig A. Moyer & Michael Francis. Clark Broadman Company. Ltd. New York, NY 1992
RCRA Regulations and Keyword Index, Compiled and Published by McCoy and Associates, Inc Lakewood, Colorado. 1992.

NFPA/HMIS : Health -3
Flammability - 0
Reactivity - 0

Complies With USDL Safety and Health Regulations, (29 CFR 1910.200)
US Department Of Labor
Material Safety Data Sheet

SECTION - 1 CHEMICAL AND COMPANY IDENTIFICATION

PRODUCT NAME: Degreaser
PRODUCT USE: degreaser

Nationwide Restoration
3151 Skylane Dr. Suite 104
Carrollton, TX 75006
Toll Free: 1-866-380-6290

EMERGENCIES: 1-800-255-3924
REVISION DATE: 06/22/00

SECTION - 2 COMPOSITION ON INGREDIENTS

CAS #	CHEMICAL NAMES	Wt%	TLV (UNITS)
111-76-2	2-butoxyethanol	< 10	25 (PPM) skin
141-43-5	2-Aminoethanol	< 3	3 (PPM) TWA
1310-58-3	Potassium Hydroxide	< 2	2 mg/ m³

N/E = not established

SECTION - 3 HAZARDS INFORMATION

Primary Route(s) of Entry: Skin contact /absorption and inhalation
Signs and Symptoms of Overexposure: Gastrointestinal irritation (nausea, vomiting, diarrhea), irritation to nose, throat, and respiratory tract.
Target Organ Effects: Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals and may aggravate pre-existing disorders or these organs in humans: chronic ingestion may cause kidney and liver lesions at high doses.
IMMEDIATE HEALTH EFFECTS
EYES: Corrosive. Exposure may cause noticeable pain, and severe irritation and transient corneal injury.
SKIN: Corrosive. Causes chemical burns. Harmful contact may not cause immediate pain. Ethylene glycol monobutyl ether and 2-aminoethanol may be absorbed through the skin.
INHALATION: Exposure to vapor or mist is possible. Short term inhalation is no likely to cause harmful effects:
breathing large amounts may be harmful. Symptoms are more typically seen at air concentrations
exceeding the recommended exposure limits.
INGESTION: Harmful or fatal if swallowed. Causes chemical burns to the mouth, throat and stomach.
REPRODUCTIVE / DEVELOPMENTAL INFORMATION
No Data
CARCINOGENIC INFORMATION: This material is not listed as a carcinogen by IARC, NTP, or OSHA
LONG TERM EFFECTS: No Data

SECTION - 4 FIRST AID MEASURES

EYES: Immediately flush with water. Remove contact lenses, if applicable, and continue flushing with water for 15 minutes. Call a physician immediately.
SKIN: Immediately flush with water for 18 minutes. Call physician if irritation persists. Completely decontaminate clothing, shoes, and leather goods before reuse or discard.
INHALATION: If symptoms develop move victim to fresh air. If symptoms persist, call a physician.
INGESTION: Do not induce vomiting. Rinse mouth with water, then drink one or two glasses of water or milk. Call a physician immediately. Never give anything by mouth if victim is unconscious, is rapidly losing consciousness or is convulsing.

SECTION - 5 FIRE FIGHTING MEASURES

Flash Point: No Flash at Boil (C.C. method)
Explosive Limits: Not Applicable
Autoignition Temperature: Not Applicable
Hazardous Products of Combustion: Oxides of carbon, oxides of nitrogen, and ammonia
Extinguishing Media: Not Applicable
Fire Fighting Instructions: Avoid contact with this material. Avoid walking in spilled material. Wear protective clothing for skin and eyes

SECTION - 6 ACCIDENTAL RELEASE MEASURES

Small Spill: Absorb with an inert solid and scoop up for disposal, then rinse soiled area with water down the drain.
Large Spill: Stop leak at the source and collect into a suitable container, then treat as a small spill.

SECTION - 7 HANDLING AND STORAGE

Handling: Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.
Storage: Store in a cool, dry place. Keep container closed when not in use.

SECTION - 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Eye Protection: Chemical Splash goggle in compliance with OSHA regulations are advised: however, OSHA regulations also permit other type safety glasses. Consult your safety representative.
Skin Protection: Wear rubber gloves (consult your safety equipment supplier). To prevent repeated or prolonged skin contact, wear impervious clothing and boots.
Respiratory Protection: If workplace exposure limits of product or any component are exceeded (see exposure guidelines), NIOSH/OSHA approved air supplied respirator is advised in the absence of proper environmental control. OSHA relations also permit other NIOSH/OSHA respirators (negative pressure type) under specific conditions (see your industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.
Engineering Controls: Provide sufficient mechanical (general and local exhaust) ventilation to maintain exposure below level of overexposure (from known, suspected or apparent adverse effects).

SECTION - 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance and odor: Thin, amber liquid with a glycol ether odor
pH Concentrate: 12.5 - 13.5
Vapor Pressure: Unknown
Vapor Density: Unknown
Boiling Point: 212 Degrees Fahrenheit
Solubility in Water: Complete
Percent Volatile: 90%
Specific Gravity: (H2O =1) 1.05 +/- 0.02

SECTION - 10 STABILITY AND REACTIVITY

Chemical Stability: Stable
Conditions to Avoid: Temperature Extremes
00000000000
.030 Hazardous Decomposition: Will no: Occur
Hazardous Polymerization: Will not Occur

SECTION - 11 TOXICOLOGICAL INFORMATION

No Data Available

SECTION - 12 ECOLOGICAL INFORMATION

No Data Available

SECTION - 13 DISPOSAL CONSIDERATION

Waste Disposal Information: Dispose of in accordance with all applicable Federal, State, and Local regulations.
RCRA Information: If this material becomes a waste, it would be considered hazardous under 40 CFR 261.22, and would be classified as EPA Waste Number D002.

SECTION - 14 TRANSPORT INFORMATION

DOT Information 49 CFR 172.10
DOT Description:
33440 Class 55
DOT Hazard Class:
8, NA 1760, II
Hazardous Component:
Potassium Hydroxide
Reportable Quantity (RQ) - 49 CFR 172.101
Not Applicable

SECTION - 15 REGULATORY INFORMATION

US Federal Regulations:
TSCA (Toxic Substances Control Act) Status
TSCA (United States) The intentional ingredients
of this product are listed.
CERCLA RQ - 40 CFR 355 Appendix A

NFPA/HMIS : Health -3
Flammability - 0
Reactivity - 1

Complies With USDL Safety and Health Regulations, (29 CFR 1910.200)

Material Safety Data Sheet US Department Of Labor

SECTION - 1 CHEMICAL AND COMPANY IDENTIFICATION

PRODUCT NAME: Odorless Whitener
PRODUCT USE: Bleaching agent

Nationwide Restoration
3151 Skylane Dr. Suite 104
Carrollton, TX 75006
Toll Free: 1-866-380-6290

EMERGENCIES: 1-800-255-3924
REVISION DATE: 06/22/00

SECTION - 2 COMPOSITION ON INGREDIENTS

CHEMICAL NAMES	Wt%	TLV (UNITS)
Potassium Peroxymonosulfate	100	5mg/m3

N/E = not established

SECTION - 3 HAZARDS INFORMATION

Primary Route(s) of Entry: Skin contact /absorption and inhalation

Signs and Symptoms of Overexposure: Gastrointestinal irritation (nausea, vomiting, diarrhea), irritation to nose, throat, and respiratory tract.

Target Organ Effects: None expected.

IMMEDIATE HEALTH EFFECTS

EYES: Exposure may cause noticeable pain, and severe irritation.

SKIN: Exposure may cause mild skin irritation. Prolonged or repeated exposure may dry the skin. Symptoms may include redness, burning, and drying and cracking. Additional symptoms of skin contact may include: allergic reaction. Skin absorption is possible, but harmful effects are not expected from this route of exposure under normal handling and use.

INHALATION: Exposure to vapor or mist is possible. Short term inhalation is no likely to cause harmful effects; breathing large amounts may be harmful. Symptoms are more typically seen at air concentrations exceeding the recommended exposure limits

INGESTION: Single dose oral toxicity is low. Swallowing small amounts during normal handling is not likely to cause harmful effects: swallowing large amounts may be harmful.

REPRODUCTIVE / DEVELOPMENTAL INFORMATION No Data

CARCINOGENIC INFORMATION: This material is not listed as a carcinogen by IARC, NTP, or OSHA

LONG TERM EFFECTS: No Data

SECTION - 4 FIRST AID MEASURES

EYES- Immediately flush with water. Remove contact lenses if applicable, and continue flushing with water. call a physician if irritation persists.

SKIN- Flush with water. Wash thoroughly with soap and water. Call physician if irritation persists.

INHALATION- If symptoms develop, move victim to fresh air. If symptoms persist call a physician.

INGESTION- Do not induce vomiting. Rinse mouth with water, then drink one glass of water. Call a physician immediately. Never give anything by mouth if victim is unconscious, is rapidly losing consciousness or is convulsing.

SECTION - 5 FIRE FIGHTING MEASURES

Flash Point No Flash at Boil (C.C. method)
Explosive limits Not Applicable
Hazardous Products of Combustion Not Applicable
Extinguishing Media Not Applicable
Fire Fighting Instructions Avoid walking in spilled material. Avoid contact with this material. Wear protective clothing for skin and eyes

SECTION - 6 ACCIDENTAL RELEASE MEASURES

Small Spill: Absorb with an inert solid and scoop up for disposal, then rinse soiled area with water down the drain.

Large Spill: Stop leak at the source and collect into a suitable container, then treat as a small spill.

SECTION - 7 HANDLING AND STORAGE

Handling: Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

Storage: Store in a cool, dry place. Keep container closed when not in use.

SECTION - 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Eye Protection: Chemical Splash goggle in compliance with OSHA regulations are advised: however , OSHA regulations also permit other type safety glasses. Consult your safety representative.

Skin Protection: Wear rubber gloves (consult your safety equipment supplier). To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

Respiratory Protection: If workplace exposure limits of product or any component are exceeded (see exposure guidelines), NIOSH/OSHA approved air supplied respirator is advised in the absence of proper environmental control. OSHA relations also permit other NIOSH/OSHA respirators (negative pressure type) under specific conditions (see your industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.

Engineering Controls: Provide sufficient mechanical (general and local exhaust) ventilation to maintain exposure below level of overexposure (from known, suspected or apparent adverse effects).

SECTION - 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance and odor white powder odorless
Vapor Pressure Unknown
Vapor Density Unknown
Solubility in Water Complete

SECTION - 10 STABILITY AND REACTIVITY

Chemical Stability Stable
Conditions to Avoid Temperature Extremes
Incompatibility oils
Hazardous Decomposition Will not Occur
Hazardous Polymerization Will not Occur

SECTION - 11 TOXICOLOGICAL INFORMATION

No Data Available

SECTION - 12 ECOLOGICAL INFORMATION

No Data Available

SECTION - 13 DISPOSAL CONSIDERATION

Waste Disposal Information: Dispose of in accordance with all applicable Federal, State, and Local regulations.

RCRA Information: If this material becomes a was it would not be considered hazardous under 40 CFR 261.22.

SECTION - 14 TRANSPORT INFORMATION

DOT Information 49 CFR 172.101
DOT Description: 33440 Class 55
DOT Hazard Class: 8, 3260 II
Hazardous Component: Monopersulfate Compound
Reportable Quantity (RQ) - 49 CFR 172.101
Not Applicable

SECTION - 15 REGULATORY INFORMATION

US Federal Regulations
TSCA (Toxic Substances Control Act) Status
TSCA (United States) The intentional ingredients of this product are listed.
CERCLA RQ - 40 CFR 355 Appendix A None
SARA 302 Components 40 CFR Appendix A None
Section 311/312 Hazard Class 40 CFR 370.2
Immediate (X) Delayed (X) Fire ( ) Reactivity ( )
Sudden Release of Pressure ( )
SARA 313 Components - 40 CFR 372
State and Local Regulations
California Proposition 65 None
California SCAQMD Rule 443.1 VOC's None
North Carolina Administrative Code 2D.1104 and 28.0810 None
South Carolina Regulation 62.5 Standard Number 8 None

SECTION - 16 OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originati with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable and suitable to thei circumstances.

This information was compiled from current manufacturer's MSDS's of the component parts of tl product. as well as other sources, such as:

Code of Federal Regulations 29, Revised as of July 1, 1994.
Code of Federal Regulations 40, Revised as of July 1, 1994.
ACGIH, Guide to Occupational Exposure Values, 1996.
ANSI Z129.1-1994, Precautionary Labeling for Hazardous Industrial Chemicals.
Hazard Communication Handbook, A Right To Knov Compliance Guide. Craig A. Moyer & Michael Francis, Clark Broadman Company. Ltd. New York, NY 1992
RCRA Regulations and Keyword Index. Compiled ar Published by McCoy and Associates. Inc Lakewood Colorado. 1992.

MATERIAL SAFETY DATA SHEET

MSDS 0495

Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
Nokorode Regular Paste Flux

PRODUCT CODES
14000, 14010, 14020, 14030

CHEMICAL FAMILY:
Organic/Inorganic

USE
Soldering Flux

MANUFACTURER'S NAME
The RectorSeal Corporation
2601 Spenwick Drive
Houston, Texas 77055 USA

VALIDATION DATE
February 16, 2006

REVISION DATE
February 16, 2006

HMIS CODES

Health	1
Flammability	1
Reactivity	0
PPI	B

EMERGENCY TELEPHONE NO.
Chemtrec 24 Hours
(800) 424-9300

TECHNICAL SERVICE TELEPHONE NO.
(800) 231-3345

Section 2 -- COMPOSITION/INFORMATION ON INGREDIENTS

% by WT	CAS No.	INGREDIENT		UNITS
10-25	7646-85-7	Zinc Chloride		
			ACGIH TLV	1 mg/m3
			OSHA PEL	1 mg/m3
10-25	12125-02-9	Ammonium Chloride		
			ACGIH TLV	10 mg/m3
			OSHA PEL	10 mg/m3
70-90	8009-03-8	Petrolatum		
			ACGIH TLV	N/D
			OSHA PEL	N/D

Section 3 -- HAZARDS IDENTIFICATION

SUMMARY OF ACUTE HAZARDS

Irritation to respiratory system from fumes evolved during soldering. Eye contact may cause intense irritation and injury.

ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS

INHALATION

Irritation to respiratory system from fumes evolved during soldering.

EYE CONTACT

Contact may cause intense irritation and injury.

SKIN CONTACT

May cause skin irritation.

INGESTION

Nausea, vomiting, irritation to digestive system.

SUMMARY OF CHRONIC HAZARDS

Short term effects to liver and kidneys can occur. Chemical irritation from continued skin contact can occur. Continuous industrial use in small unventilated areas may result in sufficient inhalation of solder and flux fumes to cause lung damage and irritation of respiratory tract.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver,

or kidneys may have increased susceptibility to excessive exposure.

Section 4 -- FIRST AID MEASURES

If INHALED:	If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.
If on SKIN:	Immediately wash with soap and water. Remove and wash any contaminated clothing.
If in EYES:	Flush eyes with large amounts of water for 15 minutes. Get medical attention if irritation persists.
If SWALLOWED:	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Section 5 -- FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL
>400 F (204 C) SETA CC	N/D	N/D

EXTINGUSING MEDIA

Foam, dry chemical, carbon dioxide or water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained full face piece breathing apparatus and other protective clothing. Hazardous decomposition products possible (see Section 10). May release ZnO and HCl fumes.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Heat may build up pressure and rupture closed containers.

Section 6 -- ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wipe up spills to prevent footing hazard. Avoid flushing into sewers, drains, waterways and soil. Wear protective clothing during clean up.

Section 7 -- HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep container closed and upright when not in use. Store flux at ambient conditions. Wash thoroughly after handling to remove all residue.

OTHER PRECAUTIONS: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues; treat as if full and observe all products precautions. Do not reuse empty containers.

Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION (SPECIFY TYPE): In confined, poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air respirators during soldering operations until fumes have dissipated.

VENTILATION - LOCAL EXHAUST: Acceptable

SPECIAL: N/A

MECHANICAL (GENERAL): Acceptable

OTHER: N/A

PROTECTIVE GLOVES: Wear rubber gloves.

EYE PROTECTION: Safety glasses (ANSI Z-87.1 or equivalent)

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended.

WORK/HYGIENIC PRACTICES: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT:	N/A
SPECIFIC GRAVITY (H20 = 1):	1.06
VAPOR PRESSURE (mm Hg):	< 0.01 @ 68 F (20 C)
MELTING POINT:	120-150 F (52-66 C)
VAPOR DENSITY (AIR = 1):	N/A
EVAPORATION RATE (ETHYL ACETATE = 1):	N/A
APPEARANCE/ODOR:	Tan / Petroleum Odor
SOLUBILITY IN WATER:	Insoluble

VOLATILE ORGANIC COMPOUNDS(VOC)Content
(Theoretical Percentage By Weight): 0% or (0 g/L)

Section 10 -- STABILITY AND REACTIVITY

STABILITY: Stable
CONDITIONS TO AVOID: None
INCOMPATIBILITY (MATERIALS TO AVOID): None known
HAZARDOUS DECOMPOSITION PRODUCTS: Toxic fumes of zinc, chlorine, and HCL may be evolved during soldering.
HAZARDOUS POLYMERIZATION: Will not occur.

Section 11 -- TOXICOLOGY INFORMATION

CHRONIC HEALTH HAZARDS
No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

TOXICOLOGY DATA
Ingredient Name

Zinc Chloride
Oral-Rat LD50:350 mg/kg
Inhalation-Rat LCLo:1960 mg/m3/10M

Ammonium Chloride
Oral-Rat LD50:1650 mg/kg
Inhalation-Rat LC50:N/D

Petrolatum
Oral-Rat LD50:N/D
Inhalation-Rat LC50:N/D

Section 12 -- Ecological Information

ECOLOGICAL DATA
Ingredient Name

Zinc Chloride

Food Chain Concentration Potential	None
WATERFOWL TOXICITY	N/A
BOD	None
AQUATIC TOXICITY: 7.2 ppm/96 hr/medium bluegill/TLm	

Ammonium Chloride

Food Chain Concentration Potential	None
WATERFOWL TOXICITY	N/A
BOD	N/A
AQUATIC TOXICITY: 6 ppm/96 hr/sunfish TLm	

Petrolatum

Food Chain Concentration Potential	N/D
WATERFOWL TOXICITY	N/D
BOD	N/D
AQUATIC TOXICITY:	N/D

Section 13 -- DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste
Disposal Method: Approved landfill
Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State, and Local regulation regarding pollution.

Section 14 -- TRANSPORTATION INFORMATION

DOT:	Non-Regulated
OCEAN (IMDG):	Non-Regulated
AIR (IATA):	Non-Regulated
WHMIS (CANADA):	Non-Regulated

Section 15 -- REGULATORY INFORMATION

REGULATORY DATA
Ingredient Name

Zinc Chloride		
	SARA 313	Yes
	TSCA Inventory	Yes
	CERCLA RQ	1000 lb.
	RCRA Code	N/A
Ammonium Chloride		
	SARA 313	No
	TSCA Inventory	Yes
	CERCLA RQ	N/A
	RCRA Code	N/A
Petrolatum		
	SARA 313	No
	TSCA Inventory	Yes
	CERCLA RQ	N/A
	RCRA Code	N/A

Section 16 -- OTHER INFORMATION

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made. Consult RectorSeal for further information: (713) 263-8001

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Trade Name: OATEY CLEAR CLEANER
Product Use: Cleaner for cementing plastic pipe.
Formula: See SECTION 2
Synonyms: Cleaner
Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. http://www.oatey.com
Oatey Phone Number: (216) 267-7100 or (800) 321-9532
Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared By: Corporate Director - Safety and Environmental Compliance
Preparation Date: May 20, 2005

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS:	%wt/wt:	CAS NUMBER:	ACGIH TLV TWA:	OSHA PEL TWA:	OTHER:
Methyl Ethyl Ketone	60 - 100%	78-93-3	200 ppm 300 ppm STEL	200 ppm	None
Acetone	15 - 40%	67-64-1	500 ppm 750 ppm STEL	1000 ppm	None

OSHA Hazard Classification: Flammable, irritant, organ effects

SECTION 3 HAZARDS IDENTIFICATION

Emergency Overview:
Clear liquid with a sharp, penetrating odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting or diarrhea. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

SECTION 4 FIRST AID MEASURES

CALL 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.

Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION 5 FIRE FIGHTING MEASURES

Flashpoint / Method:	29 Degrees F. (-2 Degrees C) / CCC
Flammability:	LEL = 1.8 % Volume, UEL = 11.5 % Volume
Extinguishing Media:	Use dry chemical, CO_2, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.
Special Fire Fighting Procedure:	Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored
Unusual Fire and Explosion Hazards:	Extremely flammable liquid. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back.
Hazardous Decomposition Products:	Combustion will produce toxic and irritating vapors including carbon monoxide and carbon dioxide.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures:	Remove all sources of ignition and ventilate area. Stop leak if it can be done without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers. Prevent liquid from entering watercourses, sewers and natural waterways. Report releases to authorities as required. See Section 13 for disposal information.

SECTION 7 HANDLING AND STORAGE

Handling:	Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.
Storage:	Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.
Other:	"Empty" containers retain product residue and can be hazardous. Follow all MSDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation:	Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.
Respiratory Protection:	For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.
Skin Protection:	Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.
Eye	Safety glasses with side shields or safety goggles.

Protection:
SECTION 8 (Continued)
Other: Eye wash and safety shower should be available.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	133 Degrees F / 56 Degrees C
Melting Point:	Not Applicable
Vapor Pressure:	186 mmHg @ 20 Degrees C
Vapor Density:	(Air = 1) 2.0
Volatile Components:	100%
Solubility In Water:	Negligible
pH:	Not Applicable
Specific Gravity:	0.79 +/- 0.02 @ 20 Degrees C
Evaporation Rate:	(BUAC = 1) = 7.7
Appearance:	Colorless Liquid
Odor:	Sharp, penetrating
Will Dissolve In:	Methyl ethyl ketone
Material Is:	Liquid

SECTION 10 STABILITY AND REACTIVITY

Stability:	Stable.
Conditions To Avoid:	Avoid heat, sparks, flames and other sources of ignition.
Hazardous Decomposition Products:	Combustion will produce toxic and irritating vapors including carbon monoxide and carbon dioxide.
Incompatibility/ Materials To Avoid:	Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.
Hazardous Polymerization:	Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation:	Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause lung damage.	
Skin:	May cause irritation with redness, itching and pain. Methyl ethyl ketone may be absorbed through the skin causing effects similar to those listed under inhalation.	
Eye:	Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.	
Ingestion:	Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage.	
Chronic Toxicity:	Prolonged or repeated overexposure cause dermatitis and damage to the lungs and central nervous system.	
Toxicity Data:	Acetone:	Oral rat LD50: 5,800 mg/kg Inhalation rat LC50: 50,100 mg/m3/8 hours
	Methyl Ethyl Ketone:	Oral rat LD50: 2,737 mg/kg Inhalation rat LC50: 23,500 mg/m3/8 hours Skin rabbit LD50: 6,480 mg/kg
Sensitization:	None of the components are known to cause sensitization.	

SECTION 11 (Continued)

Carcinogenicity:	None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.
Mutagenicity:	Methyl ethyl ketone and acetone are generally thought not to be mutagenic.
Reproductive Toxicity:	Methyl ethyl ketone has been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.
Medical Conditions Aggravated By Exposure:	Persons with pre-existing skin or lung disorders may be at increased risk from exposure to this product.

SECTION 12 ECOLOGICAL INFORMATION

This product is not expected to be toxic to aquatic organisms.
Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.
Acetone: 96 hour LC50 for fish is greater than 100 mg/L.

VOC Information:	This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.
VOC Level:	600 g/l per SCAQMD Test Method 316A.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.
RCRA Hazardous Waste Number: U002, U159
EPA Hazardous Waste ID Number: D001, D035, F003, F005
EPA Hazard Waste Class: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)

SECTION 14 TRANSPORT INFORMATION

DOT	Less than 1 Liter (0.3 gal)	Greater than 1 Liter (0.3 gal)
Proper Shipping Name:	Consumer Commodity	Flammable Liquid NOS
Hazard Class/Packing Group:	ORM-D	3, PGII
UN/NA Number:	None	UN1993
Hazard Labels:	None	Flammable Liquid (Methyl Ethyl Ketone, Acetone)
IMDG		
Proper Shipping Name:	Flammable Liquid, N.O.S.	Limited Quantity
Hazard Class/Packing Group:	3, II	
UN Number:	UN1993	
Label:	None (Limited Quantities are excepted from labeling)	

2004 North American Emergency Response Guidebook Number: 127 or 128

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 311/312:	Acute Health, Flammable
Section 302 Extremely Hazardous Substances (TPQ):	This product does not contain chemicals regulated under SARA Section 302.
Section 313 Toxic Chemicals:	This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

Chemical	CAS #	% by wt.
Methyl Ethyl Ketone	78-93-3	60 - 100%

CERCLA 103 Reportable Quantity:	Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Methyl Ethyl Ketone (100% maximum) of 5,000 lbs, is 5,000 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.
California Proposition 65:	This product does not contain any chemicals subject to California Proposition 65 regulation.
TSCA Inventory:	All of the components of this product are listed on the TSCA inventory.
Canadian WHIMS Classification:	Class B, Division 2; Class D, Division 2, Subdivision B; Class D, Division 2, Subdivision A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal:	Health: 1	Flammability: 3	Reactivity: 0	Special: None
HMIS Hazard Signal:	Health: 2	Flammability: 3	Reactivity: 0	PPE: G

Disclaimer:
The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Trade Name: OATEY PURPLE PRIMER/CLEANER
Product Use: Primer/Cleaner for cementing PVC and CPVC pipe.
Formula: See Section 2
Synonyms: Primer, Cleaner
Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. http://www.oatey.com
Oatey Phone Number: (216) 267-7100 or (800) 321-9532
Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared By: Corporate Director - Safety and Environmental Compliance
Preparation Date: May 20, 2005

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS:	%:wt/wt	CAS NUMBER:	ACGIH TLV TWA:	OSHA PEL TWA:	OTHER:
Acetone	60 - 100%	67-64-1	500 ppm 750 ppm STEL	1000 ppm	None
Methyl Ethyl Ketone	0 - 20%	78-93-3	200 ppm 300 ppm STEL	200 ppm	None
Tetrahydrofuran	0 - 20%	109-99-9	50 ppm(skin) 100 ppm STEL	200 ppm	25 ppm (Mfg)
Cyclohexanone	3 - 10%	108-94-1	20 ppm(skin) 50 ppm STEL	50 ppm	None

OSHA Hazard Classification: Flammable, irritant, organ effects

SECTION 3 HAZARDS IDENTIFICATION

Emergency Overview:
Purple liquid with a sharp, penetrating odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

SECTION 4 FIRST AID MEASURES

CALL 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.

Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION 5 FIRE FIGHTING MEASURES

Flashpoint / Method:	0 - 3 Degrees F. (-18 - -16 Degrees C) / PMCC
Flammability:	LEL = 1.8 % Volume, UEL = 11.5 % Volume
Extinguishing Media:	Use dry chemical, CO2, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.
Special Fire Fighting Procedure:	Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored
Unusual Fire and Explosion Hazards:	Extremely flammable liquid. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.
Hazardous Decomposition Products:	Combustion will produce toxic and irritating vapors including carbon monoxide and carbon dioxide.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures:	Remove all sources of ignition and ventilate area. Stop leak if it can be done without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers. Prevent liquid from entering watercourses, sewers and natural waterways. Report releases to authorities as required. See Section 13 for disposal information.

SECTION 7 HANDLING AND STORAGE

Handling:	Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.
Storage:	Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.
Other:	"Empty" containers retain product residue and can be hazardous. Follow all MSDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation:	Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.
Respiratory Protection:	For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.
Skin Protection:	Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

SECTION 8 (Continued)

Eye Protection:	Safety glasses with side shields or safety goggles.
Other:	Eye wash and safety shower should be available.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	133 Degrees F / 56 Degrees C
Melting Point:	Not applicable
Vapor Pressure:	70 mmHg @ 20 Degrees C
Vapor Density:	(Air = 1) 2.5
Volatile Components:	99.96%
Solubility In Water:	Negligible
pH:	Not applicable
Specific Gravity:	0.80 +/- 0.02 @ 20 Degrees C
Evaporation Rate:	(BUAC = 1) = 6.0 - 8.0
Appearance:	Purple Liquid
Odor:	Sharp, penetrating odor
Will Dissolve In:	Tetrahydrofuran or methyl ethyl ketone
Material Is:	Liquid

SECTION 10 STABILITY AND REACTIVITY

Stability:	Stable.
Conditions To Avoid:	Avoid heat, sparks, flames and other sources of ignition.
Hazardous Decomposition Products:	Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.
Incompatibility/ Materials To Avoid:	Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.
Hazardous Polymerization:	Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation:	Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.	
Skin:	May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.	
Eye:	Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.	
Ingestion:	Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.	
Chronic Toxicity:	Prolonged or repeated overexposure cause dermatitis and damage to the kidney, liver, lungs and central nervous system.	
Toxicity Data:	Acetone:	Oral rat LD50: 5,800 mg/kg Inhalation rat LC50: 50,100 mg/m3/8 hours
	Cyclohexanone:	Oral rat LD50: 1,620 mg/kg Inhalation rat LC50: 8,000 ppm/4 hours Skin rabbit LD50: 1 mL/kg
	Tetrahydrofuran:	Oral rat LD50: 1,650 mg/kg Inhalation rat LC50: 21,000 ppm/3 hours

SECTION 11 (Continued)

Methyl Ethyl Ketone: Oral rat LD50: 2,737 mg/kg
Inhalation rat LC50: 23,500 mg/m3/8 hours
Skin rabbit LD50: 6,480 mg/kg

Sensitization: None of the components are known to cause sensitization.

Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. The National Toxicology Program has reported that exposure of mice and rats to tetrahydrofuran (THF) vapor levels up to 1800 ppm 6 hr/day, 5 days/week for their lifetime caused an increased incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health is unclear at this time, and may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF. ACGIH has classified cyclohexanone (CYH) and tetrahydrofuran (THF) as "A3," Confirmed Animal Carcinogens with Unknown Relevance to Humans.

Mutagenicity: Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.

Reproductive Toxicity: Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran have been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

SECTION 12 ECOLOGICAL INFORMATION

This product is not expected to be toxic to aquatic organisms.
Cyclohexanone: 96 hour LC50 values for fish is over 100 mg/l.
Tetrahydrofuran: 96 hour LC50 fathead minnow: 2160 mg/L.
Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.
Acetone: 96 hour LC50 for fish is greater than 100 mg/L.

VOC Information: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.

VOC Level: 300 g/l per SCAQMD Test Method 316A.

SECTION 12 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.

RCRA Hazardous Waste Number: U002, U057, U159, U213

EPA Hazardous Waste ID Number: D001, D035, F003, F005

EPA Hazard Waste Class: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)

SECTION 14 TRANSPORT INFORMATION

DOT	Less than 1 Liter (0.3 gal)	Greater than 1 Liter (0.3 gal)
Proper Shipping Name:	Consumer Commodity	Flammable Liquid NOS
Hazard Class/Packing Group:	ORM-D	3, PGII
UN/NA Number:	None	UN1993
Hazard Labels:	None	Flammable Liquid (Acetone, Methyl Ethyl Ketone)

IMDG		
Proper Shipping Name:	Flammable Liquid, N.O.S.	Limited Quantity
Hazard Class/Packing Group:	3, II	
UN Number:	UN1993	
Label:	None (Limited Quantities are excepted from labeling)	

2004 North American Emergency Response Guidebook Number: 127 or 128

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: Acute Health, Chronic Health, Flammable

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

Chemical	CAS #	% by wt.
Methyl Ethyl Ketone	78-93-3	0 - 20%

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Acetone (100% maximum) of 5,000 lbs, is 5,000 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product does not contain any chemicals subject To California Proposition 65 regulation.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

Canadian WHIMS Classification: Class B, Division 2; Class D, Division 2, Subdivision B; Class D, Division 2, Subdivision A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal:	Health: 2	Flammability: 3	Reactivity: 1	Special: None
HMIS Hazard Signal:	Health: 2*	Flammability: 3	Reactivity: 1	PPE: G

DISCLAIMER:
The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

INTERNATIONAL INDUSTRIAL GASES LTD.

PROPANE MSDS

ProductName: Propane
ChemicalName: Propane
Formula: C_3H_8
ChemicalFamily: Alkane (hydrocarbon)
Use: Various
Synonyms: Dimethylmethane, LP-Gas, Liquified petroleum gas (LPG)

4
1 0

NFPA Fire:	4	**HMIS Fire:**	4	**Acute:**	No
NFPA Health:	1	**HMIS Health:**	0	**Chronic:**	No
NFPA Reactivity:	0	**HMIS Reactivity:**	0	**Fire:**	Yes
NFPA Special Hazard:		**Mixture:**	No	**Reactive:**	No
				Sudden Release Pressure:	Yes

02. INGREDIENTS - COMPOSITION & INFORMATION

COMPONENT	CAS No.	PERCENT (BY WT.)		EXPOSURE GUIDELINES OSHA - TWA	ACGIH - STEL
Propane	74-98-6	99.0%	100.0%	1000	Simple Asphyxiant
LD50: None. LC50: None.					

03. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Warning: Flammable liquid gas under pressure.
Can form explosive mixtures with air.
May cause frostbite.

Potential Health Effects Information:

Routes of Exposure:

Inhalation: Simple asphyxiant. It should be noted that before suffocation could occur, the lower flammability limit of propane in air would be exceeded; possibly causing both an oxygen-deficient and explosive atmosphere. Exposure to concentrations (> 10%) may cause dizziness. Exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning, and so quickly that the individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death.

Eye Contact: Contact with liquid or cold vapor can cause freezing of tissue.

Skin Contact: Contact with liquid or cold vapor can cause frostbite.

Chronic Effects: None.

Medical Conditions Aggravated By Overexposure: None.

Other Effects Of Overexposure: None.

Carcinogenicity: Propane is not listed by NTP, OSHA or IARC.

04. FIRST AID MEASURES

Inhalation: Persons suffering from lack of oxygen should be removed to fresh air. If victim is not breathing, administer artificial respiration. If breathing is difficult, administer oxygen. Obtain prompt medical attention.

Eye: Contact with liquid or cold vapor can cause freezing of tissue. Gently flush eyes with lukewarm water. Obtain medical attention immediately.

Skin: Contact with liquid or cold vapor can cause frostbite. Immediately warm affected area with lukewarm water not to exceed 105°F (40°C).

Ingestion:	None.
Notes To Physician:	None.

05. FIRE FIGHTING MEASURES

Flash Point:	-156F (-104C)
Autoignition:	842F (432C)
Flammable Limits - Lower:	2.2%
Flammable Limits - Upper:	9.5%
Extinguishing Media:	CO2, dry chemical, water spray or fog for surrounding area. Do not extinguish until propane source is shut off.
Fire Fighting Instructions:	Evacuate all personnel from danger area. Immediately cool container with water spray from maximum distance, taking care not to extinguish flames. If flames are accidentally extinguished, explosive re-ignition may occur. Stop flow of gas if without risk while continuing cooling water spray.
Fire And Explosion Hazards:	Propane is easily ignited. It is heavier than air, therefore, it may collect in low areas or travel along the ground where an ignition source may be present. Pressure in a container can build up due to heat, and it may rupture if pressure relief devices should fail to function.
Hazardous Combustion Products:	None known.
Sensitivity To Static Discharge:	Possible, container should be grounded.
Sensitivity To Mechanical Impact:	None.

06. ACCIDENTAL RELEASE MEASURES

Evacuate:	Evacuate the immediate area. Eliminate any possible sources of ignition, and provide maximum explosion-proof ventilation. Shut off source of propane, if possible. If leaking from cylinder, or valve, contact your supplier. Never enter a confined space or other area where the concentration is greater than 10% of the lower flammable limit which is 0.22%.

07. HANDLING AND STORAGE

Storage:	Specific requirements are listed in NFPA 58. Cylinder storage locations should be well-protected, well-ventilated, dry, and separated from combustible materials. Cylinders should never knowingly be allowed to reach a temperature exceeding 125°F (52°C). Cylinders of propane should be separated from oxygen cylinders or other oxidizers by a minimum distance of 20 ft., or by a barrier of non-combustible material at least 5 ft. high having a fire resistance rating of at least ½ hour. Full and empty cylinders should be segregated. Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling or being knocked over. Protect cylinders from physical damage; do not drag, roll, slide or drop. Use a suitable hand truck for cylinder movement. Post "No Smoking or Open Flames" signs in the storage areas. There should be no sources of ignition. All electrical equipment should be explosion proof in the storage and use areas. Storage areas must meet national electric codes for class 1 hazardous areas.
Handling:	Propane is heavier than air and may collect in low areas that are without proper ventilation. Leak check system with leak detection solution, never with flame. If user experiences difficulty operating cylinder valve, discontinue use and contact supplier. Never insert an object (e.g., wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing a leak to occur. Use an adjustable strap wrench to remove over-tight or rusted caps. Non-sparking tools should be used. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit. Electrically bond and ground cylinder when transferring liquid product. For additional precautions in using propane see Section 16 - Other Information.

08. EXPOSURE CONTROLS - PERSONAL PROTECTION

Engineering Controls:	
Ventilation:	Natural or mechanical to prevent accumulation in worker's breathing zone above exposure limits. (See Section 2).
Personal Protective Equipment (PPE):	

Clothing:	Cotton Clothing is recommended for use to prevent static electric buildup.
Glasses:	Safety glasses are recommended when handling cylinders.
Shoes:	Safety shoes are recommended when handling cylinders.
Gloves:	Work gloves are recommended when handling cylinders.
Respirator:	None required in general use.
Emergency Use:	Self-contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmosphere. Respirators will not function. Before entering area, you must check for flammable and oxygen deficient atmospheres.

09. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Gas
Color:	Colorless
Odor:	Unodorized propane has a slightly sweet odor. If an odorant has been added it will have a strong unpleasant odor.
Molecular Weight:	44.097
Boiling Point:	-43.67°F (-42.04°C) @ 1 atm
Specific Gravity:	1.5223 At 70°F (21.1°C) @ 1 atm, Air = 1
Freezing/Melting Point:	-305.84F (-187.69C) at 1 atm
Vapor Pressure:	109.73 psig, (756.56 kPa) at 70°F (21.2°)
Vapor Density:	0.110 lb./cu ft (1.1.77kg/CuM), At 70°F (21.1°C) @ 1 atm
Water Solubility:	.065 Vol./Vol. At 100° F (37.8°C)
Expansion Ratio:	1 to 290 at 70°F (21.1°C)
pH:	Not applicable
Odor Threshold:	1800 mg/CuM
Evaporation Rate:	Not Applicable - Gas
Coefficient Of Water/Oil Distribution:	Information not available

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable
Conditions To Avoid:	None.
Incompatibility With Other Materials:	Oxidizing agents.
Hazardous Decomposition Products:	None.
Hazardous Polymerization:	Will not occur

11. TOXICOLOGICAL INFORMATION

Other Studies Relevant To Material:	Propane is nontoxic and is a simple asphyxiant, however it does have slight anesthetic properties and higher concentrations may cause dizziness.
Irritancy Of Material:	None.
Reproductive Effects:	None.
Teratogenicity:	None.
Synergistic Materials:	None.
Sensitization To Material:	None.
Mutagenicity:	None.

12. ECOLOGICAL INFORMATION

ECOTOXICITY:	No adverse ecological effects are expected. Propane does not contain any Class I or Class II Ozone depleting chemicals (40 CFR Part 82). Propane is not listed as a marine pollutant by DOT (49 CFR Part 171).

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:	Do not attempt to dispose of residual or unused quantities. Return cylinder to supplier. Residual product within process system may be burned at a controlled rate, if a suitable burning unit (flare stack) is available on site. This shall be done in accordance with federal, state, and local regulations.

14. TRANSPORT INFORMATION

DOT/IMO Shipping Name:	Propane
HAZARD CLASS:	2.1 (Flammable gas.)
Identification Number:	UN 1978*
PIN:	1978
Product RQ:	None.
Shipping Label:	Flammable Gas.

Placard (When Required):	Flammable gas.
Special Shipping Information:	Cylinders should be transported in a secure position, in a well ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious hazards and should be discouraged.
Special Shipping Information	*For domestic transportation only: The identification number UN 1075 may be used in place of the identification number UN 1978. The identification number used must be consistent on package markings, shipping papers, and emergency response information (Special provision 19 from 49 CFR 172.101).

TOP OF THE PAGE

WOULD YOU LIKE MORE INFORMATION OR LEAVE A MESSAGE

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MATERIAL SAFETY DATA SHEET

MSDS

FOR ODORIZED PROPANE

Health Administration Hazard Communication Standard published November 23, 1983 (Title 29 CFR Part 1910).

Chemical Manufacturers, Importers, and Distributors must have complied by November 25, 1985. All manufacturing employers covered by the Standard (SIC Codes 20-39) must have complied by May 25, 1986.

The Standard was amended August 24, 1987 (Vol. 52, *Federal Register,* page 31852) to extend its application beyond the manufacturing sector and to include all employers where chemicals are either used, distributed, or are produced for use or distribution, effective May 23, 1988.

Also for complying with the requirements of the Environmental Protection Agency Community Right to Know rules published October 15, 1987 (Vol. 52, *Federal Register,* page 38344) under Title III of the Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499).

INSTRUCTIONS TO SUPPLIER USING THE MSDS:

- Insert Supplier Name, Address, and Emergency Phone Number in "1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION."
- Insert issue date on last page of MSDS.
- Have copies reproduced for distribution.

MATERIAL SAFETY DATA SHEET
FOR ODORIZED PROPANE

1. Chemical Product and Company Identification

Product Name: Odorized Commercial Propane

Chemical Name: Propane

Chemical Family: Paraffinic Hydrocarbon

Formula: C3H8

Synonyms: Dimethylmethane, LP-Gas, Liquefied Petroleum Gas (LPG), Propane, Propyl Hydride

Name & Address:	Transportation Emergency Number:	Emergency Number:
		For Routine Info, Call:

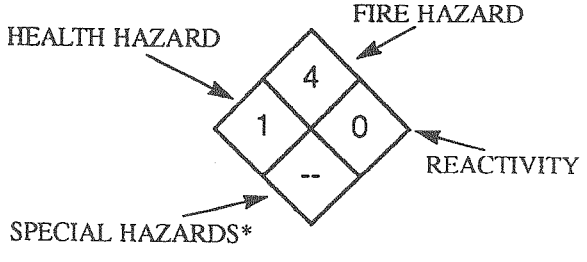
2. Composition/Information on Ingredients

INGREDIENT NAME /CAS NUMBER	PERCENTAGE	OSHA PEL	ACGIH TLV
Propane/74-98-6	87.5-100	1,000 ppm	Simple asphyxiant
Ethane/74-84-0	0-5.0		Simple asphyxiant
Propylene/115-07-1	0-10.0		Simple asphyxiant
Butanes/various	0-2.5		Simple asphyxiant
Ethyl Mercaptan/75-08-1	16-25 ppm	0.5 ppm	0.5 ppm

3. Hazards Identification

EMERGENCY OVERVIEW

DANGER! Flammable liquefied gas under pressure. Keep away from heat, sparks, flame, and all other ignition sources. Vapor replaces oxygen available for breathing and may cause suffocation in confined spaces. Use only with adequate ventilation. Odor may not provide adequate warning of potentially hazardous concentrations. Vapor is heavier than air. Liquid can cause freeze burn similar to frostbite. Do not get liquid in eyes, on skin, or on clothing. Avoid breathing of vapor. Keep container valve closed when not in use.



Severe 4 — 1 Slight

Serious 3 — 0 Minimal

Moderate 2 — * (Ref. NFPA 704)

POTENTIAL HEALTH EFFECTS INFORMATION

ROUTES OF EXPOSURE:

Inhalation: Asphyxiant. It should be noted that before suffocation could occur, the lower flammability limit of propane in air would be exceeded, possibly causing both an oxygen-deficient and explosive atmosphere. Exposure to concentrations >10% may cause dizziness. Exposure to atmospheres containing 8%-10% or less oxygen will bring about unconsciousness without warning, and so quickly that the individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death.

Eye Contact: Contact with liquid can cause freezing of tissue.

Skin Contact: Contact with liquid can cause frostbite.

[Skin Absorption]: None.

[Ingestion]: Liquid can cause freeze burn similar to frostbite. Ingestion not expected to occur in normal use.

CHRONIC EFFECTS: None.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None.

OTHER EFFECTS OF OVEREXPOSURE: None.

CARCINOGENICITY: Propane is not listed by NTP, OSHA or IARC.

4. First Aid Measures

INHALATION: Persons suffering from lack of oxygen should be removed to fresh air. If victim is not breathing, administer artificial respiration. If breathing is difficult, administer oxygen. Obtain prompt medical attention.

EYE CONTACT: Contact with liquid can cause freezing of tissue. Gently flush eyes with lukewarm water. Obtain medical attention immediately.

SKIN CONTACT: Contact with liquid can cause frostbite. Remove saturated clothes, shoes and jewelry. Immerse affected area in lukewarm water not exceeding 105° F. Keep immersed. Get prompt medical attention.

INGESTION: If swallowed, get immediate medical attention.

NOTES TO PHYSICIAN: None.

5. Fire-fighting Measures

FLASH POINT: -156° F (-104° C) **AUTOIGNITION:** 842° F (432° C)

IGNITION TEMPERATURE IN AIR: 920-1120° F

FLAMMABLE LIMITS IN AIR BY VOLUME: Lower: 2.15% Upper: 9.6%

EXTINGUISHING MEDIA: Dry chemical, CO^2, water spray or fog for surrounding area. Do not extinguish fire until propane source is shut off.

SPECIAL FIRE-FIGHTING INSTRUCTIONS: Evacuate personnel from danger area. Immediately cool container with water spray from maximum distance, taking care not to extinguish flames. If flames are accidentally extinguished, explosive re-ignition may occur. Where water is abundant and immediate, the fire should be allowed to burn while the container and area are cooled and the flow of propane is shut off. Where water is scarce, compare the risk of allowing the area to continue to heat from the fire and the alternative of extinguishing the fire without shutting off the propane flow, which may allow for the propane to accumulate and re-ignite explosively.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Propane is easily ignited. It is heavier than air; therefore, it can collect in low areas where an ignition source can be present. Pressure in a container can build up due to heat and container may rupture if pressure relief devices should fail to function. Propane released from a properly functioning relief valve on an overheated container can also become ignited.

HAZARDOUS COMBUSTION PRODUCTS: None.

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Evacuate the immediate area. Eliminate any possible sources of ignition and provide maximum ventilation. Shut off source of propane, if possible. If leaking from container, or valve, contact your supplier.

7. Handling and Storage

HANDLING PRECAUTIONS: Propane vapor is heavier than air and can collect in low areas that are without sufficient ventilation. Leak-check system with a leak detector or solution, never with flame. Make certain the container service valve is shut off prior to connecting or disconnecting. If container valve does not operate properly, discontinue use and contact supplier. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into pressure relief valve or cylinder valve cap openings. Do not drop or abuse cylinders. Never strike an arc on a gas container or make a container part of an electrical circuit.
See "16. OTHER INFORMATION" for additional precautions.

STORAGE PRECAUTIONS: Store in a safe, authorized location (outside, detached storage is preferred) with adequate ventilation. Specific requirements are listed in NFPA 58, *Standard for the Storage and Handling of Liquefied Petroleum Gases.* Isolate from heat and ignition sources. Containers should never be allowed to reach temperature exceeding 125° F (52° C). Isolate from combustible materials. Provide separate storage locations for other compressed and flammable gases. Propane containers should be separated from oxygen cylinders, or other oxidizers, by a minimum distance of 20 feet, or by a barrier of non-combustible material at least 5 feet high having a fire rating of at least 1/2 hour. Full and empty cylinders should be segregated. Store cylinders in upright position, or with pressure relief valve in vapor space. Do not drop or abuse cylinders. Keep container valve closed and plugged or capped when not in use. Install protective caps when cylinders are not connected for use. Empty containers retain some residue and should be treated as if they were full.

8. Exposure Controls/Personal Protection

ENGINEERING CONTROLS

Ventilation: Provide ventilation adequate to ensure propane does not reach a flammable mixture.

RESPIRATORY PROTECTION (SPECIFY TYPE)

General Use: None.

Emergency Use: If concentrations are high enough to warrant supplied-air or self-contained breathing apparatus, then the atmosphere may be flammable (See Section 5). Appropriate precautions must be taken regarding flammability.

PROTECTIVE CLOTHING: Avoid skin contact with liquid propane because of possibility of freeze burn. Wear gloves and protective clothing which are impervious to the product for the duration of the anticipated exposure.

EYE PROTECTION: Safety glasses are recommended when handling cylinders.

OTHER PROTECTIVE EQUIPMENT: Safety shoes are recommended when handling cylinders.

9. Physical and Chemical Properties

BOILING POINT: @ 14.7 psia = -44° F

SPECIFIC GRAVITY OF VAPOR (Air = 1) at 60° F: 1.50

SPECIFIC GRAVITY OF LIQUID (Water = 1) at 60° F: 0.504

VAPOR PRESSURE: @ 70° F = 127 psig
@ 105° F = 210 psig

EXPANSION RATIO (From liquid to gas @ 14.7 psia): 1 to 270

SOLUBILITY IN WATER: Slight, 0.1 to 1.0%

APPEARANCE AND ODOR: A colorless and tasteless gas at normal temperature and pressure.
An odorant (ethyl mercaptan) has been added to provide a strong unpleasant odor. Should a propane-air mixture reach the lower limits of flammability, the ethyl mercaptan concentration will be approximately 0.5 ppm in air.

ODORANT WARNING: Odorant is added to aid in the detection of leaks. One common odorant is ethyl mercaptan, CAS No. 75-08-01. Odorant has a foul smell. The ability of people to detect odors varies widely. Also, certain chemical reactions with material in the propane system, or fugitive propane gas from underground leaks passing through certain soils, can reduce the odor level. No odorant will be 100% effective in all circumstances. If odorant appears to be weak, notify propane supplier immediately.

10. Stability and Reactivity

STABILITY: Stable.

Conditions to Avoid: Keep away from high heat, strong oxidizing agents and sources of ignition.

REACTIVITY:

Hazardous Decomposition Products: Under fire conditions, fumes, smoke, carbon monoxide, aldehydes and other decomposition products. When used as an engine fuel, incomplete combustion can cause carbon monoxide, a toxic gas.

Hazardous polymerization: Will not occur.

11. Toxicological Information

Propane is non-toxic and is a simple asphyxiant, however, it does have slight anesthetic properties and higher concentrations may cause dizziness.

[IRRITANCY OF MATERIAL]: None.

[SENSITIZATION TO MATERIAL]: None

[REPRODUCTIVE EFFECTS]: None

[TERATOGENICITY]: None

[MUTAGENICITY]: None

[SYNERGISTIC MATERIALS]: None

12. Ecological Information

No adverse ecological effects are expected. Propane does not contain any Class I or Class II ozone-depleting chemicals (40 CFR Part 82). Propane is not listed as a marine pollutant by DOT (49 CFR Part 171).

13. Disposal Considerations

WASTE DISPOSAL METHOD: Do not attempt to dispose of residual or unused product in the container. Return to supplier for safe disposal.

Residual product within process system may be burned at a controlled rate, if a suitable burning unit (flare stack) is available on site. This shall be done in accordance with federal, state and local regulations.

14. Transport Information

DOT SHIPPING NAME: Liquefied Petroleum Gas
IDENTIFICATION NUMBER: UN 1075
IMO SHIPPING NAME: Propane
IMO IDENTIFICATION NUMBER: UN 1978

HAZARD CLASS: 2.1 (Flammable Gas)
PRODUCT RQ: None **SHIPPING LABEL(S):** Flammable gas
PLACARD (WHEN REQUIRED): Flammable gas
SPECIAL SHIPPING INFORMATION: Container should be transported in a secure, upright position in a well-ventilated vehicle.

15. Regulatory Information

The following information concerns selected regulatory requirements potentially applicable to this product. Not all such requirements are identified. Users of this product are responsible for their own regulatory compliance on a federal, state [provincial] and local level.

U.S. FEDERAL REGULATIONS

EPA Environmental Protection Agency

CERCLA Comprehensive Environmental Response, Compensation and Liability Act of 1980 (40 CFR Parts 117 and 302)

Reportable Quantity (RQ): None

SARA Superfund Amendment and Reauthorization Act

- SECTION 302/304: Requires emergency planning on threshold planning quantities (TPQ) and release reporting based on reportable quantities (RQ) of EPA's extremely hazardous substances (40 CFR Part 355).

  Extremely Hazardous Substances: None

  Threshold Planning Quantity (TPQ): None

- SECTIONS 311/312: Require submission of material safety data sheets (MSDSs) and chemical inventory reporting with identification of EPA-defined hazard classes (40 CFR Part 370). The hazard classes for this product are:

  IMMEDIATE: No PRESSURE: Yes

  DELAYED: No REACTIVITY: No FLAMMABLE: Yes

- SECTION 313: Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR Part 372.

Propane does not require reporting under Section 313.

40 CFR PART 68 Risk Management for Chemical Accidental Release

TSCA Toxic Substance Control Act

Propane is listed on the TSCA inventory.

OSHA Occupational Safety and Health Administration

29 CFR 1910.119: Process Safety Management of Highly Hazardous Chemicals.

FDA Food and Drug Administration

21 CFR 184.1655: Generally recognized as safe (GRAS) as a direct human food ingredient when used as a propellant, aerating agent and gas.

16. Other Information

SPECIAL PRECAUTIONS: Use piping and equipment adequately designed to withstand pressure to be encountered.

NFPA 58 *Standard for the Storage and Handling of Liquefied Petroleum Gases* and OSHA 29 CFR 1910.10 require that all persons employed in handling LP-gases be trained in proper handling and operating procedures, which the employer shall document. Contact your propane supplier to arrange for the required training. Allow only trained and qualified persons to install and service propane containers and systems.

WARNING: Be aware that with odorized propane the intensity of ethyl mercaptan stench (its odor) may fade due to chemical oxidation (in the presence of rust, air or moisture), adsorption or absorption. Some people have nasal perception problems and may not be able to smell the ethyl mercaptan stench. Leaking propane from underground gas lines may lose its odor as it passes through certain soils. While ethyl mercaptan may not impart the warning of the presence of propane in every instance, it is generally effective in a majority of situations. Familiarize yourself, your employees and customers with this warning, and other facts associated with the so-called "odor-fade" phenomenon. If you do not already know all the facts, contact your propane supplier for more information about odor, electronic gas alarms and other safety considerations associated with the handling, storage and use of propane.

ISSUE INFORMATION

Issue Date:_____

This material safety data sheet and the information it contains is offered to you in good faith as accurate. This Supplier does not manufacture this product but is a supplier of the product independently manufactured by others. Much of the information contained in this data sheet was received from sources outside our Company. To the best of our knowledge this information is accurate, but this Supplier does not guarantee its accuracy or completeness. Health and safety precautions in this data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely, comply with all applicable laws and regulations and to assume the risks involved in the use of this product.

NO WARRANTY OR MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSES, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OF COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.

Prepared by

NATIONAL PROPANE GAS ASSOCIATION

1600 Eisenhower Lane, Suite 100, Lisle, Illinois 60532

Phone 630/515-0600

Printed in U.S.A.

The purpose of this bulletin is to set forth general safety practices for the installation, operation, and maintenance of LP-gas equipment. It is not intended to be an exhaustive treatment of the subject, and should not be interpreted as precluding other procedures which would enhance safe LP-gas operations. Issuance of this bulletin is not intended to nor should it be construed as an undertaking to perform services on behalf of any party either for their protection or for the protection of third parties. The National Propane Gas Association assumes no liability for reliance on the contents of this bulletin.

Issued 12/96

PVC Flooring

KCC	Material Safety Data Sheet	Reg. No	MSDS-T-001
		Enactment	2004.02.21
Q.C team, KCC CORPORATION, 1301-4, Seocho-Dong, Seocho-Ku Seoul, Korea Tel : 82-2-3480-5459 Fax : 82-2-3480-7413	Product Name : PVC VINYL FLOORING	Revision	2007.10.21
		Total Page	2

1. Product Class & Supplier's information

a. Class : P.V.C HOMOGENOUS TILE

b. Hazardous polymerization : Not hazard

c. Description : PVC Flooring Products

d. Supplier : KCC, 1301-4, Seo-Cho Dong, Seo-Cho Ku, Seoul, Korea 82-2-3480-5283

e. Discriptor : Choi, Sang Yeol, Q.C Team, Go-Duck

2. Composition / Information on Ingredients

Material	DESCRIPTION	Amount (%)
CaCo3	Lime	55.5
POLY VINYL CHLORIDE	PVC(CP-705)	32.4
DIOCTYL PTHALATE	DOP	11.6
STABILIZER	Ba-Zn class (SWP-407)	0.5

3. HMIS (0 = minimal hazard; 4 = severe hazard)

a.Chemical Indentity : Common Name

Health = 0 Flammability = 1 Reactivity = 0

b. Eye contact risks : Not an anticipated hazard

c. Skin contact risks : Not an anticipated hazard

d. Skin absorptions health risks : Not an anticipated hazard

e. Ingestion health Risks : Not an anticipated hazard

f. Chronicity symption : Not an anticipated hazard

4. Hazardous Ingredients

(Chemical Identity: Common Name)	C.A.S. No.	%	OSHA PEL	ACGIH TLV
None	N/A	N/A	N/A	N/A

5. First Aid Procedures

a. Inhalation : N/A

b. Skin exposure : N/A

c. Eye exposure : Need to have doctor's diagnosis

d. Ingestion : Need to have doctor's diagnosis

e. Doctor's Notice : N/A

6. Unusual Fire & Explosion Hazards

a. Flash Point & Ignition Point : N/A

b. Flammable Range : LEL = N/A

c. Regulations for firefighting : N/A

d. Extinguishing Media : Depending on each fire (water,ABC dry chemical, protein type air foams...)

e. Special Fire Fighting Procedures : Protect fire fighters from toxic products of combustion by wearing self-contained breathing apparatus.

f. Prohibited Extinguisher : N/A

7. Leak Procedures

a. Protection steps for body : N/A

b. Protection steps for environment : Place into a container for disposal

c. Purification & Removal : Place into a container for residues

8. Handling & Storage

a. Safety Handling : Provide efficient ventilation and wear safety equipment

b. Storage : Keep the product at dried & good ventilation place to protect moisture

9. Control Measures

a. Chemical Engineering control : N/K

b. Respiratory protection : N/A

c. Eye Protection : N/A

d. Hand protection : Protective glove

e. Body protection : N/A

f. Hygienic practices : N/A

g. Exposure standard (Industrial safety & hygenic regulations) : N/A

10. Physical & Chemical Characteristics

a. Appearance : Half rigid vinyl resin

b. Smell : Odorless

c. PH : N/A

d. Solubility in Water : insoluble but soluble at organic solvent chemical compound

e. Boiling point / scope : N/A

f. Melting point / scope : N/A

g. Explosion : None.

h. Oxidation : None.

i. Steam pressure : N/A

j. KOW : N/A

k. Steam density : N/A

l. Viscosity : N/A

m. Molecule : N/K.

11. Reactivity Data

a.Chemical Stability : Stable at high temperature & Pressure

b. Avoid to condition : N/A

c. Hazardous Decomposition: N/A

d. Hazardous reaction : None

12. Toxicity information

a. Carcinogenemes : N/E

b. Toxic information : None.

13. Environmental Influence

a. Aquatic ecosystems & Ecology : N/A

b. Soil sterileness : N/A

c. The residues & degradability : N/A

d. Stockpiling Internal of creatures : N/A

14. Disposal Information

a. Disposal Regulations : act on regulations of factory disposal

b. Disposal : by self or consignment

c. Disposal Notice : N/A

15. Transport Information

a. Hazard Class : Not Hazardous

b. Transportation Notice : N/A

c. These products are not defined or designeated as a hazardous material.

16. Legal Regulatiouns

a. Industrial safety & hygenic regulations : N/E

b. Hazalous chemical compound regulations : N/E

c. Any Foreign's regulations : N/E

17. Other Information

a. Data Source

1. Standard for safety & Hygenic material (Notification 97-27 by Department of Labor, Oct / 1997)
2. Material safety & Hygenic Data Sheet (Industrial Safety public corporation, Nov / 1996)
3. MSDS from each material supplier

18. WARNING

FOR PREVIOUSLY INSTALLED FLOOR COVERING:
DO NOT SAND, DRY SCRAPE, BLADE CAST, OR MECHINCALLY PULVERIZE EXISTING RESILIENT FLOORING, BACKING OR LINING FELT. THESE PRODUCTS MAY CONTAIN EITHER ASBESTOS FIBERS OR CRYSTALLINE SILICA. POSSIBLE CANCER AND RESPIRATORY TRACT HAZARD BY INHALATION. AVOID CREATING DUST. SMOKING BY INDIVIDUALS WHO HAVE BEEN EXPOSED TO ASBESTOS FIBERS GREATLY INCREASES THE RISK OF SERIOUS BODILY HARM. RFCI'S(Resilient Floor Covering Institute) RECOMMENDED WORK PRACTICES FOR REMOVAL OF RESILIENT FLOOR COVERINGS ARE A DEFINED SET OF INSTRUCTIONS ADDRESSED TO THE TASK OF REMOVING ALL RESILIENT FLOOR COVERING STRUCTURES.

* N/A - None Applicable
* N/K - None Known
* N/E - None Established

PVC Glue

The Mohawk Group
Field Services Dept.
405 Virgil Drive
Dalton, GA 30721
(800) 833-6954

The Mohawk Group

Technical Data Sheet
DK133 Wal*Mart
Nu Spraylok Platinum
Luxury Vinyl Plank

PRODUCT BENEFITS

- Reduce job labor as much as 50%
- Withstands moisture vapor emissions up to 10 lbs., as measured by the calcium chloride test method as well as an alkalinity test of 12pH.
- No Volatile Organic Compounds (VOC's)
- Water-based – no hazardous solvents
- Non-toxic
- Non flammable
- Adheres to both porous and non-porous surfaces
- Eliminates both buckets and trowels
- Greatly reduces time on knees
- Floor may be used immediately after laying luxury vinyl plank
- Plank will not shift
- Contains Anti-microbial
- Low or no odor

ADDITIONAL ADVANTAGES

- Self-contained system
- Easy cleanup
- No waste
- Applied standing up

ADHERES TO THESE SURFACES

- Concrete
- Metal
- Wood
- Fiberglass
- Existing VCT
- Terrazzo

CLEANUP

1. Wipe excess adhesive off of spray tip while the adhesive is wet or dry.
2. Cleans with water while adhesive is wet.
3. Clean overspray once adhesive is dry with Nu Spraylok Adhesive Cleaner (DK 117).

PROPERTIES OF MATERIAL

Chemical Type	SBR/Acrylic blend
Appearance	Milky white frost/clear
Odor	Mild, non chemical
Caution	Aerosol, contents under pressure
Flash Point	Will not burn
NFPA 704 Flammability Rating	0 (non flammable)
Dry Time	15 to 30 minutes

GENERAL INFORMATION & STORAGE

For safe handling and storage information on this product, consult the Material Safety Data Sheet (MSDS). **STORAGE MUST BE @ 68° OR ABOVE. NOT FREEZE THAW STABLE.**

AVAILABLE CONTAINER SIZES

28 lb pressurized cylinder
DK133-Wal*Mart Platinum

COVERAGE CHART

Floor covering	Coverage
Luxury Vinyl Plank	2,500 sf per 28 lb cyl.

WARRANTY

See full Nu Spraylok™ Wal*Mart Platinum Limited Warranty for conditions.

NOTE: Installer must be approved by The Mohawk Group Field Technical Services.

The Mohawk Group

Installation Guidelines for Nu Spraylok Platinum

- **Perform required moisture vapor emissions and alkalinity tests**
  TESTING IS MANDATORY. TEST RESULTS MUST BE ON FILE AT MOHAWK FIELD SERVICES BEFORE JOB START.

- **Floor preparation**
  The floor shall be free of paint, dirt, grease, oil and wax. **ALL OLD ADHESIVE MUST BE REMOVED. USING NU SPRAYLOK ADHESIVE REMOVER, ANY AND ALL DEBRIS MUST BE REMOVED. IF ANY DEBRIS IS NOT REMOVED, IT WILL TELEGRAPH THROUGH THE PLANK. FAILURE TO DO SO MAY CAUSE INSTALLATION FAILURE.** The use of a TERMINATOR and SANDER are recommended. Old adhesive's must be removed and SANDED with a floor sander. Floor must be cleaned with a floor scrubber. **Note: Wal-Mart should have Floor Scrubbers available.**

- **Equipment and Supplies**

♦ Straight Edge
♦ Scissors
♦ Chalk Line
♦ Tape Measure
♦ Push Broom
♦ Floor Scrapers
♦ Carpet Tractor
♦ Slotted Blade Knife
♦ Vacuum Cleaner
♦ pH Test Paper
♦ Portland Based Floor Patch
♦ Trowel for Portland Based Floor Patch
♦ Calcium Chloride Moisture Test
♦ Commercial Sander
♦ Commercial Floor Scrapper (Remodels)
♦ Mop and Bucket/Floor Scrubber
♦ Starter Kit for Nu SprayLok
♦ Linoleum Roller
♦ Heat Jacket

Nu Spraylok Platinum System Start-Up

1. Open Starter Kit (DK119)
2. Cylinder must be heated with Heat Jacket (DK137) before spraying adhesive. **Use extreme caution when using Heat Jacket.**
2. Attach hose to cylinder with twist-on connector.
3. Place Nu Spraylok Platinum 28lb. Cylinder into backpack (DK124)
4. trap on backpack with cylinder and adjust straps for comfort.
5. Turn on cylinder by rotating valve counter clockwise.

Spraying

1. Begin spraying by holding the wand approximately 20" off the floor at a 45° angle.
2. Spray a **medium** frost – approximate coverage yield is **2,500** square feet or **277** square yards per cylinder.
3. The floor must be rolled with a 100lb roller, or heavier.
4. Installation Guidelines provided in the starter kit. **(DK119)**
5. **IMPORTANT: DO NOT LAY FLOOR COVERING UNTIL ADHESIVE IS COMPLETELY DRY!**
6. Use Nu-Spraylok Platinum 22 oz. **(DK135)** for tight areas, cutting in, and all repairs. Approximate coverage is 150 square feet per can.

- **Note: Adhesive coverage is approximate and will vary depending upon floor conditions.**

Restart and Cleaning

1. Turn off cylinder by rotating valve clockwise.
2. Bleed pressure off of gun and hose, then disconnect.
3. Immediately attach hose to cleaner clamp.
4. Attach cleaner clamp to One Shot Hose and Gun Cleaner **(DK118)**.
5. Spray out entire contents of One Shot Cleaner.
6. Immediately attach wash adapter and flush gun and hose with water until water runs clean.
7. Drain all water from hose and store safely.
8. The above cleaning procedure **must be performed after daily use.**

***Note: Never leave hose disconnected without immediate hook up to the next cylinder and then re-pressurizing, or without immediate cleaning.**

The Mohawk Group

NU SPRAYLOK™ PLATINUM LIMITED WARRANTY

NU SPRAYLOK™ WAL*MART PLATINUM ADHESIVE (DK133, & DK135)

The Mohawk Group's branded Nu Spraylok™ adhesives are warranted to be free from defects in material and workmanship for 5 years from the date of the installation, when applied as specified in Nu Spraylok's™ printed Installation Guidelines and any other technical information provided. Nu Spraylok™ adhesive will not fail due to moisture vapor emissions up to **10 lb per 1,000 sq ft per 24 hours** when tested with a prepackaged calcium chloride crystal kit performed in accordance with ASTM F 1869-98, and a **pH of 12** when tested according to industry standards. Nu Spraylok™ adhesive does not prevent or restrict the flow or build-up of water vapor emission or alkalinity. This warranty is strictly limited to failure of the adhesive due to levels of water vapor emission and high pH conditions stated above. It is important to note that moisture and pH readings will most likely fluctuate. Should these fluctuate to levels higher than specified, the warranty will be void. Remedies for any proven failure shall be limited only to the replacement of adhesive in affected areas only as determined by The Mohawk Group. Labor for furniture or equipment moving or loss of use time or other related expense are not included in this warranty. **Only Mohawk products are covered in this warranty.**

This limited warranty is further subject to the following conditions: Nu Spraylok™ products must be applied as per Mohawk application specifications on structurally sound and clean areas in which the concrete meets acceptable industry standards as defined in ACI Committee 201 Report, "Guide to Durable Concrete". If the areas to which the products are applied now or in the future fail to meet these standards, this warranty shall be void. This warranty will be null and void if the specific installation instructions attached to this warranty are not strictly followed.

The Mohawk Group will not be responsible for structural failure, seismic action, vapor emissions above **10 lbs per 1,000 sq ft per 24 hours, a pH in excess of 12**, dimensional stability of flooring material, discoloration, caustic solutions entering the system topically through the seams, seam failure or voids, tears, rips, water leakage, curing compounds, mold release agents, leveling or patching compounds of any kind, improper preparation or installation or maintenance procedures, and any other condition beyond the control of The Mohawk Group. In order for this warranty to be valid, the following must be on record at The Mohawk Group offices five days prior to the date of installation of floor covering where Nu Spraylok™ adhesive is to be used: 1. Moisture vapor emission test results**, dated, notarized and certified by an independent facility; 2. Alkalinity test results** notarized, including a color photograph of test strip alongside color scale; 3. Temperature & humidity at time of testing; 4. Sub floor type and prep data; 5. Specific installation procedures to be employed; 6. Flooring material used.

Nu Spraylok™ adhesives are not warranted when applied to concrete slabs which do not have a proper vapor shield barrier in place. Nu Spraylok™ adhesives are not warranted when applied to concrete slabs that are not in complete and total compliance with municipal, state or any other applicable building and construction codes.

Slabs which show visual evidence of surface or residual moisture at any time subsequent to the installation are specifically excluded from all warranties.

Nu Spraylok™ adhesives are not warranted in those cases where specific floor preparation guidelines are not followed as outlined in The Mohawk Group's Nu Spraylok™ Installation Guidelines for floor coverings. .

In order to file a claim, a written notice along with all support data i.e. vapor emission test results, environmental conditions at time of testing, sub floor prep data, specific installation procedures employed, type of flooring material, adhesive used, etc..., or any claimed defect, must be received within thirty (30) days of the discovery of a potential breach of this warranty in order to assert its right to any repairs or remedy covered by this warranty. The duration of this warranty shall be for **5 years** from the date of the installation. The Mohawk Group makes no warranty of merchantability or fitness for a particular purpose.

Installer must be approved by The Mohawk Group Field Technical Services.

**** TESTS MUST BE PERFORMED IN ACCORDANCE WITH CRI 104/105 STANDARDS****

Revised 12/14/05

The Mohawk Group
500 TownPark Lane
Kennesaw, GA 30144

NU SPRAYLOK PLATINUM ADHESIVE
MATERIAL SAFETY DATA SHEET

SECTION I

MANUFACTURER'S NAME: Interlock Industries, Inc.
Address: 1209 Cleveland Hwy., Suite 346, Dalton, GA 30721
Product Class: Aerosol Water Based Adhesive
Product Name: Nu Spraylok Platinum Adhesive
Telephone Number: 706-517-8989, 706-517-8990 (fax)
HAZMAT Emergency: Chemtrec, 800-424-9300
Date Issued: January 16, 2004

SECTION II

HAZARDOUS INGREDIENTS: None per OSHA Regulation #29CFR1910.1200. **None** per SARA Extremely Hazardous Substance List. **None** per CERCLA Hazardous Substance List. **None** per SARA Toxic Chemical List. Volatile Organic Compounds (VOC): **None**. Note: This product utilizes HFC 134A as a propellant and has been exempted from the list of volatile organic compounds (VOCs) under Clean Air Act regulations (40 CFR 51.000).

SECTION III

PHYSICAL DATA: Boiling Point: -15.7° F. VAPOR PRESSURE: 96 psia @ 77° F. VAPOR DENSITY: Heavier than air. % VOLATILES: 25%. SOLUBILITY IN WATER: 70 WT% @ 77° F. APPEARANCE & ODOR: White to clear. Mild and sweet. EVAPORATION RATE: N/A

SECTION IV

FIRE & EXPLOSION DATA: FLASH POINT: Will not burn. FLAMMABLE LIMITS IN AIR, % BY VOLUME: LEL: N/A. UEL: N/A. EXTINGUISHING MEDIA: N/A. SPECIAL FIRE FIGHTING PROCEDURES: None. UNUSUAL FIRE & EXPLOSION HAZARDS: Cylinders may vent under fire conditions. Self-contained breathing apparatus (SCBA) may be required if cylinders rupture or release under fire conditions.

SECTION V

REACTIVITY DATA: CHEMICAL STABILITY: Stable. CONDITIONS TO AVOID: Open flames & high temperatures. INCOMPATIBILITY WITH OTHER MATERIALS: Incompatible with alkali or alkaline earth metals. DECOMPOSITION: Decomposition ingredients are hazardous. This product can be decomposed by high temperatures (above 126° F) forming hydrofluoric acid & possibly carbonyl fluoride. POLYMERIZATION: Will not occur.

SECTION VI

HEALTH HAZARDS: ROUTES OF ENTRY: Inhalation, skin, eyes. INHALATION: Gross overexposure of concentrated propellent may cause: Central nervous system depression with dizziness, confusion, incoordination, drowsiness or unconsciousness, irregular heart beat, fainting, weakness, sometimes progressing to loss of consciousness and death. Suffocation, if air is displaced by vapors. SKIN: Immediate effects of overexposure to propellant may include: Frostbite, if liquid or escaping vapor contacts the skin. EYE CONTACT: "Frostbite-like" feel may occur if the liquid or escaping vapors contact the eyes. HEALTH HAZARDS: None known. CARCINOGENICITY: None. **FIRST AID PROCEDURES:** INHALATION: If high concentrations of propellent are inhaled, immediately remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician. SKIN CONTACT: In case of contact, immediately wash with soap & water. EYE CONTACT: Wash with water for 15 minutes and call physician. .

SECTION VII

PRECAUTIONS FOR HANDLING & USE: ACCIDENTAL RELEASE MEASURES: Ventilate area, especially low or enclosed places where heavy vapors might collect. Extinguish open flames. Clean up adhesive with soap and water. WASTE DISPOSAL METHOD: Dispose per local, state & federal regulations. STORAGE: Store in a clean, dry place. Do not heat above 126° F and avoid freezing.

SECTION VIII

CONTROL MEASURES: PERSONAL PROTECTIVE EQUIPMENT: Under normal use and handling conditions, no protective equipment should be required nor respiratory protection. EXPOSURE GUIDELINES: PEL: None established. TLV: None established. AEL (DuPont): 1000 ppm, 8 & 12 hr. TWA. WEEL: 1000 ppm, 8 hr. TWA.

SECTION IX

TRANSPORTATION: ***Ground Shipments:*** PROPER SHIPPING NAME: Consumer Commodity ORM-D. DOT/IMO: ORM-D. Common Carrier NMSFC# 4610-0. Class: 60.
HAZARDOUS MATERIALS IDENTIFICATION SYSTEM:

HEALTH:	1	REACTIVITY:	1	FLAMMABILITY:	0

The Mohawk Group

500 TownPark Lane
Kennesaw, GA 30144

NU SPRAYLOK ADHESIVE CLEANER
MATERIAL SAFETY DATA SHEET

SECTION I **MANUFACTURER'S NAME:** Interlock Industries, Inc.
Address: 1209 Cleveland Hwy., Suite 346, Dalton, GA 30721
Product Class: Adhesive Cleaner
Product Name: Nu Spraylok Adhesive Cleaner (#4500)
Telephone Number: 706-517-8989, 706-517-8990 (fax)
HAZMAT Emergency: Chemtrec, 800-424-9300
Date Issued: January 16, 2004

SECTION II **HAZARDOUS INGREDIENTS:** Aliphatic Hydrocarbon, CAS # 8052-41-3. Volatile Organic Compounds (VOC): 40 - 50% by weight. Exposure Limits: OSHA PEL - 500.

SECTION III **PHYSICAL DATA:** Boiling Point: Not determined. VAPOR PRESSURE: 90 - 100 psia @ 70° F. VAPOR DENSITY: (Air =1) > 1. % VOLATILES: 40 -50%. SOLUBILITY IN WATER: Insoluble. APPEARANCE & ODOR: Transluscent liquid with sweet citrus odor. EVAPORATION RATE (Ethel Ether =1): <1.

SECTION IV **FIRE & EXPLOSION DATA:** Flammable Classification: Flammable per ASTM D-3065-77 Flame Extension Test. FLASH POINT: Approximately 120° F. FLAMMABLE LIMITS IN AIR, % BY VOLUME: LEL: N/A. UEL: N/A. EXTINGUISHING MEDIA: Foam, CO^2, Dry Chemical. SPECIAL FIRE FIGHTING PROCEDURES: Keep aerosol containers cooled with water fog to prevent bursting. UNUSUAL FIRE & EXPLOSION HAZARDS: Contents under pressure. Exposure of aerosol cans to temperatures above 120° F may cause bursting.

SECTION V **REACTIVITY DATA:** CHEMICAL STABILITY: Stable. CONDITIONS TO AVOID: Open flames & temperatures above 120° F. INCOMPATIBILITY WITH OTHER MATERIALS: Strong oxidizers. DECOMPOSITION: Carbon Monoxide & Carbon Dioxide. POLYMERIZATION: Will not occur.

SECTION VI **HEALTH HAZARDS: ROUTES OF ENTRY:** Inhalation, ingestion, skin, eyes. INHALATION: Respiratory irritation, dizziness, and weakness. SKIN: Redness, irritation and de-fatting of skin. EYE CONTACT: Redness, irritation and tearing. INGESTION: Gastrointestinal irritation, nausea, vomiting, diarrhea. HEALTH HAZARDS: None known. CARCINOGENICITY: None. **FIRST AID PROCEDURES:** INHALATION: Move to fresh air. Get medical attention if irritation persists. INGESTION: Get immediate medical attention. SKIN CONTACT: In case of contact, immediately wash with soap & water. Contact Physician if irritation persists. EYE CONTACT: Wash with water for 15 minutes and call physician if irritation continues.

SECTION VII **PRECAUTIONS FOR HANDLING & USE:** ACCIDENTAL RELEASE MEASURES: Ventilate area, and soak up with absorbent material and dispose of accordingly. Large spills are unlikely due to aerosol packaging. Clean up any residue with soap and water. WASTE DISPOSAL METHOD: Dispose per local, state & federal regulations. Do not puncture unless contents have been completely emptied. STORAGE: Store in a clean, dry place. Do not heat above 126 F and avoid freezing.

SECTION VIII **CONTROL MEASURES:** PERSONAL PROTECTIVE EQUIPMENT: Under normal use and handling conditions, no protective equipment should be required nor respiratory protection. EXPOSURE GUIDELINES: PEL: 500. TLV: None established. RESPIRATORY PROTECTION: Use NIOSH approved self-contained breathing apparatus if PEL is exceeded. VENTILATION: Sufficient local or mechanical ventilation to maintain vapor concentrations below PEL. PROTECTIVE GLOVES: Solvent resistant. EYE PROTECTION: Safety glasses with chemical splash-proof side shields, chemical goggles and/or face shield. OTHER PROTECTIVE MEASURES: Sufficient to prevent skin contact.

SECTION IX **TRANSPORTATION:** ***Ground Shipments:*** PROPER SHIPPING NAME: Consumer Commodity ORM-D. DOT/IMO: ORM-D. Common Carrier NMSFC# 4610-0. Class: 60.
HAZARDOUS MATERIALS IDENTIFICATION SYSTEM:

HEALTH:	1	REACTIVITY:	0	FLAMMABILITY:	2

NU SPRAYLOK™ INSTALLATION GUIDELINES FOR WAL-MART FLOORCOVERINGS

GENERAL INFORMATION & STORAGE

For safe handling and storage information on this product, consult the Material Safety Data Sheets (MSDS).

NOT FREEZE THAW STABLE. STORAGE MUST BE @ 68 DEGREES FARENHEIT OR ABOVE.

Perform required Moisture Vapor Emission and Alkalinity Tests. TESTING IS MANDATORY. Test results must be on file in the Mohawk Group Field Services Dept. before the job starts.

Cold Weather Information: A Freeze indicator is applied to the top of each cylinder, whenever the cylinder has been frozen, the indicator will pop out black or red. A temperature strip is also applied to the side of each cylinder, to determine the temperature.

In order to avoid possible job failures due to high moisture and high alkalinity, the following guidelines must be followed:

Whenever the moisture vapor emission is 5 or higher and the pH is 10 or above, adhesive remover is required. Using Nu Spraylok Adhesive Remover (DK 138) and following the procedures for its use, will ensure that all of the old adhesive will be completely removed from the substrate. When old adhesive is not fully removed, Nu Spraylok will not bond to concrete, but to the old adhesive. If the moisture and pH levels rise above the previously mentioned levels, old adhesive will re-emulsify and cause the installation to fail. It is important to note that Nu Spraylok is not failing under these conditions, but the failure results from improper floor preparation.

Exact usage, coverage and procedures are included in these pages. It is important to note that the precise amount of Nu Spraylok Adhesive Remover may vary depending on floor moisture, pH levels, and the amount of old adhesive on the floor. The amount of adhesive on the floor and its moisture condition in some cases cannot be determined until the floor covering is removed. Please note that if there are any visual indications of higher than normal levels of moisture or pH, the job should not be continued without consulting with the Mohawk Field Services office. Call 800-833-6954, option 5 to speak to an expert on these issues. This line is monitored. If you need immediate attention after hours, please call 706-463-6057.

When the pH is 10 or above, Nu Spraylok pH Reducer (DK141) is required. Following the procedures will reduce the pH to an acceptable level. It is important to note that Moisture and pH will most likely fluctuate.

Mohawk strongly recommends having a Field Services technician present at the beginning of each job that has higher levels of moisture or pH that will involve us of our Nu Spraylok Adhesive Remover.

Taking these necessary precautions and using the Nu Spraylok system, will in most cases, save Wal-Mart from future problems and high expenses incurred during and after installation, and the even more costly loss of retail sales space.

A significant additional advantage of removing all old adhesive before using Nu Spraylok for the first time, whether or not there are high levels of moisture and pH, is that future removal of floor covering and the installation of new, will require no floor prep other than removal of old flooring. Simply re-spray Nu Spraylok and install the new flooring. This will save a significant amount of time and expense in future installations.

Please continue sending all moisture and pH test results to Field Services, where we can determine which stores will need the adhesive remover and floor absorbent. This will ensure the remover and cleaner are shipped with the adhesive, to cut down on freight costs. Having these tests results in our office ensure that the warranty remains in effect.

FLOOR PREPARATION

TOOLS REQUIRED:

Terminator
Two Rotary Floor buffers with Scrape-Away attachments and Sand Paper attachments, with large grit paper
Two commercial Blower Fans
Two Garden Sprayers
Two Flat Sheet Metal Floor Scrapers
Flat Square Nose Shovel
30 Gallon Trash Can
Floor Scrubbing Machine with Black Scrubbing Pads (Wal*Mart Supplied)
100 lb. roller

Nu Spraylok Items Required:

1 Starter Kit (includes spray gun, system cleaning parts) – DK119
1 Nu Spraylok 22 oz. (4 pack) – DK135
1 Backpack – DK124
1 One Shot Cleaner (12 pack) – DK118

For Luxury Vinyl Tile only

X Nu Spraylok Wal-Mart Platinum – DK133
(1 cylinder covers approx. 2,500 sf)

For VCT only

X Nu Spraylok VCT Platinum – DK126
(1 cylinder cover approx 4,000 sf)

High moisture/pH stores will also include:

X Nu Spraylok Adhesive Remover – DK138
(5 gal bucket of Remover & a 50 lb bag of Absorbent)
(10 gal covers approx 2,500 sf & one bag covers 2,500 sf)
Nu Spraylok pH Reducer (DK141)
(5 gal pail covers approx 5,000 sf.)

ADHESIVE REMOVAL INSTRUCTIONS

Based on previous stores, where multiple floor covering replacements have occurred, the amount of Nu-Spraylok adhesive remover used has been approximately ten gallons per twenty-five hundred square feet. Due to the high moisture, the old adhesive could liquefy. In this case it is the installers responsibility to determine, after the first night, if any additional adhesive remover is needed. If additional remover is needed, Wal*Mart must be contacted immediately to order the additional adhesive remover. This will allow proper time for shipping, and not create any schedule problems. There will be two-five gallon buckets of remover sent for each cylinder of adhesive.

STEP #1 Using the terminator, remove old floor covering. With a sharp blade on the terminator, scrape up as much adhesive as possible. We recommend starting with a twenty-five hundred square feet area the first night and adjust accordingly.

WARNING: FLOOR WILL BECOME VERY SLICK DURING THIS PROCESS.

STEP #2 Use a garden sprayer to apply the Nu Spraylok Adhesive Remover (DK138) to the entire area. Saturate old adhesive and allow to sit for approximately thirty minutes. Reapply on spots that appear dry.

STEP #3 Apply Floor Absorbent (DK138). One bag should cover at least a twenty-five hundred square foot area. The floor absorbent will soak up the broken down adhesive and will prevent the floor from being so slick during the next step.

STEP #4 Start in the area where the adhesive remover was first applied. Use the rotary buffer with the Scrape-Away attachment to remove the adhesive from the entire floor. Some areas may require additional work.

STEP #5 After the adhesive has been scraped with the buffing machine there should be a gooey, or liquefied gel left of the floor. With a wide sheet metal scrapper, scrape the old adhesive into a pile. With a shovel put into a trash can for disposal.

STEP #6 Attach the black mesh-scrubbing pad to the floor scrubber, and fill with clean, warm water. Clean floor approximately three times, or as many times needed to remove any residue, and dry with blower fans. The floor should have a slick glazed look when dry,

STEP #7 Patch any necessary areas with a Portland base floor patch.

pH REDUCER INSTRUCTIONS

Portland base floor patch must be dry before applying pH Reducer (DK141).

Using a garden sprayer adjust tip to spray a light mist of solution (app coverage 5-gal 5000 sq ft) When spraying expansion, or cut joints hold wand closer to the substrate spraying a medium mist. Allow solution to completely dry before spraying adhesive. Clean sprayer and wand with tap water.

NU SPRAYLOK PLATINUM SYSTEM START-UP

STEP #1 Snap chalk lines on floor for reference points.

STEP #2 Open starter kit (DK119)

STEP #3 Attach the Nu Spraylok Heat Jacket (DK137) to the cylinder using the Velcro straps. Plug the cord into an electrical outlet for approximately ten minutes. The amount of time heated will depend on the temperature of the cylinder and the desired spray pattern. The warmer the cylinder, the finer and broader the spray pattern will be.

DO NOT LEAVE THE HEAT JACKET ON THE CYLINDER FOR MORE THAN THIRTY MINUTES AT A TIME

Caution: Use great care when handling the heat jacket to avoid burns. This jacket gets very hot quickly and should not be touched with bare skin while plugged in. After heating the cylinder of Nu Spraylok, again use great caution and care removing the very hot heat jacket. Handle it carefully using either gloves, the jacket Velcro strips or the electrical cord during removal. Do not place the hot heat jacket on any surface that could burn or melt or otherwise be damaged due to heat.

STEP #4 Attach hose to cylinder with twist-on connector.

STEP #5 To begin spraying turn on cylinder by rotating valve counter clockwise

STEP #6 A backpak has been supplied for use if desired.

SPRAYING ADHESIVE

STEP #1 Begin spraying by holding the wand approximately 20" off the floor at a 45-degree angle.

STEP #2 Spray a medium frost over the entire area, being careful not to leave any voids. Overlapping each spray pattern. **Approximate coverage yield is 2,500 square feet or 277 square yards per cylinder.**

STEP #3 Use Nu-Spraylok 22 oz. **(DK135)** for tight areas, cutting in, and all repairs.

STEP #4 **IMPORTANT:** Do not lay floor covering into adhesive until completely dry. Drying time is approximately 30 minutes. Use of blower fans will speed up drying time. Drying time will vary in different climates.

STEP #5 Install floor covering following the manufactures recommendations.

STEP #6 Roll floor with a 100-pound roller.

Note: Do not use DK126 for Luxury Vinyl Installations

INSTALLING VINYL COMPOSITION TILE (VCT)
(DK126 only)

STEP #1 Begin spraying by holding the wand approximately 20"off the floor at a 45 degree angle.

STEP #2 Spray a **light frost** over the entire area being careful not to leave any voids. Approximate coverage yield is 4,000 square feet per cylinder.

STEP #3 Use Nu-Spraylok Platinum 22oz **(DK135)** for tight areas, cutting in, and all repairs.

STEP #4 **IMPORTANT:** Do not lay floor covering into adhesive until completely dry. Drying time is approximately 15 to 30 minutes. Use of blower fans will speed up drying time. Drying time will vary in different climates.

STEP #5 Install VCT following the manufactures recommendations.

STEP #6 Roll Floor with 100-pound roller.

Note: Do not use DK133 for VCT installations!

#8

Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY (As Used on Label and List)
ROCKITE CEMENT

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name HARTLINE PRODUCTS CO., INC.	Emergency Telephone Number (216) 291-2303
Address (Number, Street, City, State, and ZIP Code) 2120 S. GREEN RD., SUITE 202	Telephone Number for Information (216) 291-2303
CLEVELAND, OHIO 44121	Date Prepared 3-1-00
	Signature of Preparer (optional)

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	CAS NO.
Gypsum (calcium sulfate) % WT: 98	15 mg/m^3 Total Dust 5 mg/m^3 Respirable Dust	10 mg/m^3 Total Dust	7778-18-9
Portland Cement %WT: 2	10 mg/m^3 Total Dust 5 mg/m^3 Respirable Dust	10 mg/m^3 Total Dust	65997-15-1

Section III — Physical/Chemical Characteristics

Boiling Point	NA	Specific Gravity (H_2O = 1)	2.7
Vapor Pressure (mm Hg.)	NA	Melting Point (decomposes)	1450°C
Vapor Density (AIR = 1)	NA	Evaporation Rate (Butyl Acetate = 1)	NA

Solubility in Water 0.2% Hardening Time: 12-15 Minutes

Appearance and Odor
White, Off-White, Gray or pigmented powder. - Low odor.

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used) None	Flammable Limits	LEL NA	UEL NA

Extinguishing Media
Not Combustible

Special Fire Fighting Procedures
None

Unusual Fire and Explosion Hazards
None

Section V — Reactivity Data

Stability			Conditions to Avoid
	Unstable		
	Stable	X	

Incompatibility (Materials to Avoid)

Hazardous Decomposition or Byproducts: Above 1450°C - SO_2 and CaO

Hazardous Polymerization			Conditions to Avoid
	May Occur		
	Will Not Occur	X	

Section VI — Health Hazard Data

Route(s) of Entry: Inhalation? Yes Skin? Ingestion?

Health Hazards (Acute and Chronic): Acute: Eyes - May cause irritation. Skin - May develop sufficient heat to cuase burns if a large mass, such as a cast of an arm or leg, is kept in contact with skin while hardening. Inhalation: Dust is considered a nuisance dust. Chronic: None

Carcinogenicity: NTP? Not carcinogenic. IARC Monographs? OSHA Regulated?

Signs and Symptoms of Exposure

Medical Conditions Generally Aggravated by Exposure: EYES: Flood eyes for 15 minutes with water. SKIN: Remove from skin by washing. If irritation continues, see physician. Gypsum cement hardens when wetted and if ingested, may result in obstruction. See physician.

Emergency and First Aid Procedures

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled: Sweep up. Avoid creating excessive dust. Slurry may plug drains.

Waste Disposal Method: In accordance with local, state and federal regulations.

Precautions to Be Taken in Handling and Storing: Dew point conditions or other conditions causing presence of liquid water during storage will harden gypsum cement.

Other Precautions

Section VIII — Control Measures

Respiratory Protection (Specify Type): NIOSH approved nuisance dust respirator if above TLV.

Ventilation		
	Local Exhaust: If above, TLV	Special
	Mechanical (General)	Other

Protective Gloves: If dust or slurry is irritating.

Eye Protection: Dust goggles or safety glasses if dust is annoying.

Other Protective Clothing or Equipment: None

Work/Hygienic Practices

☆ U.S.G.P.O.: 1988-491-329/45775

FACTS Faxed FAST! SM

OSHA-Required Health And Safety Information!

This Material Safety Data Sheet (MSDS) was requested moments ago from Hercules Automated Fax Information System. Please forward it immediately to the person in charge of MSDS's, or retain it at the machine until claimed.

Section 1

MATERIAL SAFETY DATA SHEET # 22

Sta Put®

HERCULES® MATERIAL SAFETY INFORMATION SERVICE

Date Prepared: 12/17/1986 **Last Reviewed:** 11/29/2006

Meets OSHA 29 CFR 1910.1200

Hercules Chemical Company Inc.
111 South Street
Passaic NJ 07055
Phone (800) 221-9330
Fax (800) 333-3456

Section 2 - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s), CAS Numbers)	OSHA PEL	ACGIH TLV	Other Limits	Upper Bound Limit if SARA Reportable
This product is not classified as hazardous in accordance with OSHA 1910.1200				

HMIS Hazard Rating: Health: 0 Flammability: 0 Reactivity: 0 Personal Protection: A

Section 3 - Physical/Chemical Characteristics

Boiling Point (°F):	Specific Gravity (H_2O = 1):	Vapor Density (Air = 1):	Vapor Pressure (mm Hg):
N/A	1.89	N/A	N/A

Melting Point (° F)	Evaporation Rate: (Butyl Acetate = 1)	Solubility in Water:
N/A		Insoluble

Appearance And Color: Beige color mastic **Odor:** Very mild vegetable oil odor.

Section 4 - Fire And Explosion Hazard Data

Flash Point:	Flammable Limits:	LEL:	UEL:
N/A	N/A		

Extinguishing Media: Dry chemical or carbon dioxide or water.

Special Firefighting Procedures:
As appropriate for surrounding fire.

Unusual Fire And Explosion Hazards:
None

Continued on Next Page

Section 5 - Reactivity Data

Stability: Stable **Conditions To Avoid:** None

Incompatability (Materials To Avoid): Strong oxidizers

Hazardous Decomposition: Carbon dioxide and carbon monoxide may be released on burning.

Hazardous Polymerization: Will Not Occur

Section 6 - Health Hazard Data

Routes of Entry: **Inhalation** N/A **Skin** YES/Primary **Ingestion** YES/Primary

Health Hazards:

None known

Carcinogenicity: **NTP** NO **IARC** NO **OSHA Regulated** NO

Signs And Symptoms of Exposure:

None

Medical Conditions Generally Aggravated By Exposure:

None known

Emergency And First Aid Procedures:

EYES: As with most foreign materials should eye contact occur, flush eyes with plenty of water and get medical attention. SKIN: Wash with soap and water. INGESTION: Do not induce vomiting. Call a physician if there is any discomfort.

Continued on Next Page

Section 7 - Precautions For Safe Handling And Use:

Steps To Be Taken In Case Material Is Released Or Spilled:

Sweep up

Waste Disposal Method:

Non-hazardous landfill

Precautions To Be Taken In Handling And Storing:

None normally required

Other Precautions:

None

Section 8 - Control Measures:

Respiratory Protection:

None required for putty. If putty dries and dust is created dust-type respirator required.

Ventilation: **Local Exhaust** Adequate
Mechanical N/A
Special N/A
Other: N/A

Gloves: Not normally required.

Eye Protection: None required

Other Protective Clothing: None

Work/Hygienic Practices Wash thoroughly after handling.

Additional Information:

HERCULES® MATERIAL SAFETY INFORMATION SERVICE

FACTS Faxed FAST!

For Hercules Material Safety Data Sheets by fax anytime, day or night, just call 1-800-942-INFO (1-800-942-4636) from any Touch-Tone phone. Have your fax number ready. Checking the product label for the correct MSDS # will save time.

The Mohawk Group
Field Services Dept.
405 Virgil Drive
Dalton, GA 30721
(800) 833-6954

The Mohawk Group

Technical Data Sheet
DK133 Wal*Mart
Nu Spraylok Platinum
Luxury Vinyl Plank

PROPERTIES OF MATERIAL

Chemical Type	SBR/Acrylic blend
Appearance	Milky white frost/clear
Odor	Mild, non chemical
Caution	Aerosol, contents under pressure
Flash Point	Will not burn
NFPA 704 Flammability Rating	0 (non flammable)
Dry Time	15 to 30 minutes

PRODUCT BENEFITS

- Reduce job labor as much as 50%
- Withstands moisture vapor emissions up to 10 lbs., as measured by the calcium chloride test method as well as an alkalinity test of 12pH.
- No Volatile Organic Compounds (VOC's)
- Water-based – no hazardous solvents
- Non-toxic
- Non flammable
- Adheres to both porous and non-porous surfaces
- Eliminates both buckets and trowels
- Greatly reduces time on knees
- Floor may be used immediately after laying luxury vinyl plank
- Plank will not shift
- Contains Anti-microbial
- Low or no odor

ADDITIONAL ADVANTAGES

- Self-contained system
- Easy cleanup
- No waste
- Applied standing up

ADHERES TO THESE SURFACES

- Concrete
- Metal
- Wood
- Fiberglass
- Existing VCT
- Terrazzo

CLEANUP

1. Wipe excess adhesive off of spray tip while the adhesive is wet or dry.
2. Cleans with water while adhesive is wet.
3. Clean overspray once adhesive is dry with Nu Spraylok Adhesive Cleaner **(DK 117).**

GENERAL INFORMATION & STORAGE

For safe handling and storage information on this product, consult the Material Safety Data Sheet (MSDS). **STORAGE MUST BE @ 68° OR ABOVE. NOT FREEZE THAW STABLE.**

AVAILABLE CONTAINER SIZES

28 lb pressurized cylinder
DK133-Wal*Mart Platinum

COVERAGE CHART

Floor covering	Coverage
Luxury Vinyl Plank	2,500 sf per 28 lb cyl.

WARRANTY

See full Nu Spraylok™ Wal*Mart Platinum Limited Warranty for conditions.

NOTE: Installer must be approved by The Mohawk Group Field Technical Services.

The Mohawk Group

Installation Guidelines for Nu Spraylok Platinum

- **Perform required moisture vapor emissions and alkalinity tests** **TESTING IS MANDATORY. TEST RESULTS MUST BE ON FILE AT MOHAWK FIELD SERVICES BEFORE JOB START.**

- **Floor preparation**
  The floor shall be free of paint, dirt, grease, oil and wax. **ALL OLD ADHESIVE MUST BE REMOVED. USING NU SPRAYLOK ADHESIVE REMOVER, ANY AND ALL DEBRIS MUST BE REMOVED. IF ANY DEBRIS IS NOT REMOVED, IT WILL TELEGRAPH THROUGH THE PLANK. FAILURE TO DO SO MAY CAUSE INSTALLATION FAILURE.** The use of a TERMINATOR and SANDER are recommended. Old adhesive's must be removed and SANDED with a floor sander. Floor must be cleaned with a floor scrubber. **Note: Wal-Mart should have Floor Scrubbers available.**

- **Equipment and Supplies**

♦ Straight Edge	♦ Floor Scrapers
♦ Scissors	♦ Carpet Tractor
♦ Chalk Line	♦ Slotted Blade Knife
♦ Tape Measure	♦ Vacuum Cleaner
♦ Push Broom	♦ pH Test Paper

♦ Portland Based Floor Patch
♦ Trowel for Portland Based Floor Patch
♦ Calcium Chloride Moisture Test
♦ Commercial Sander
♦ Commercial Floor Scrapper (Remodels)
♦ Mop and Bucket/Floor Scrubber
♦ Starter Kit for Nu SprayLok
♦ Linoleum Roller
♦ Heat Jacket

Nu Spraylok Platinum System Start-Up

1. Open Starter Kit (DK119)
2. Cylinder must be heated with Heat Jacket **(DK137)** before spraying adhesive. **Use extreme caution when using Heat Jacket.**
2. Attach hose to cylinder with twist-on connector.
3. Place Nu Spraylok Platinum 28lb. Cylinder into backpack (DK124)
4. trap on backpack with cylinder and adjust straps for comfort.
5. Turn on cylinder by rotating valve counter clockwise.

Spraying

1. Begin spraying by holding the wand approximately 20" off the floor at a 45° angle.
2. Spray a **medium** frost – approximate coverage yield is **2,500** square feet or **277** square yards per cylinder.
3. The floor must be rolled with a 100lb roller, or heavier.
4. Installation Guidelines provided in the starter kit. **(DK119)**
5. **IMPORTANT: DO NOT LAY FLOOR COVERING UNTIL ADHESIVE IS COMPLETELY DRY!**
6. Use Nu-Spraylok Platinum 22 oz. **(DK135)** for tight areas, cutting in, and all repairs. Approximate coverage is 150 square feet per can.

- **Note: Adhesive coverage is approximate and will vary depending upon floor conditions.**

Restart and Cleaning

1. Turn off cylinder by rotating valve clockwise.
2. Bleed pressure off of gun and hose, then disconnect.
3. Immediately attach hose to cleaner clamp.
4. Attach cleaner clamp to One Shot Hose and Gun Cleaner **(DK118)**.
5. Spray out entire contents of One Shot Cleaner.
6. Immediately attach wash adapter and flush gun and hose with water until water runs clean.
7. Drain all water from hose and store safely.
8. The above cleaning procedure **must be performed after daily use.**

***Note: Never leave hose disconnected without immediate hook up to the next cylinder and then re-pressurizing, or without immediate cleaning.**

The Mohawk Group

NU SPRAYLOK™ PLATINUM LIMITED WARRANTY

NU SPRAYLOK™ WAL*MART PLATINUM ADHESIVE (DK133, & DK135)

The Mohawk Group's branded Nu Spraylok™ adhesives are warranted to be free from defects in material and workmanship for 5 years from the date of the installation, when applied as specified in Nu Spraylok's™ printed Installation Guidelines and any other technical information provided. Nu Spraylok™ adhesive will not fail due to moisture vapor emissions up to **10 lb per 1,000 sq ft per 24 hours** when tested with a prepackaged calcium chloride crystal kit performed in accordance with ASTM F 1869-98, and a **pH of 12** when tested according to industry standards. Nu Spraylok™ adhesive does not prevent or restrict the flow or build-up of water vapor emission or alkalinity. This warranty is strictly limited to failure of the adhesive due to levels of water vapor emission and high pH conditions stated above. It is important to note that moisture and pH readings will most likely fluctuate. Should these fluctuate to levels higher than specified, the warranty will be void. Remedies for any proven failure shall be limited only to the replacement of adhesive in affected areas only as determined by The Mohawk Group. Labor for furniture or equipment moving or loss of use time or other related expense are not included in this warranty. **Only Mohawk products are covered in this warranty.**

This limited warranty is further subject to the following conditions: Nu Spraylok™ products must be applied as per Mohawk application specifications on structurally sound and clean areas in which the concrete meets acceptable industry standards as defined in ACI Committee 201 Report, "Guide to Durable Concrete". If the areas to which the products are applied now or in the future fail to meet these standards, this warranty shall be void. This warranty will be null and void if the specific installation instructions attached to this warranty are not strictly followed.

The Mohawk Group will not be responsible for structural failure, seismic action, vapor emissions above **10 lbs per 1,000 sq ft per 24 hours, a pH in excess of 12**, dimensional stability of flooring material, discoloration, caustic solutions entering the system topically through the seams, seam failure or voids, tears, rips, water leakage, curing compounds, mold release agents, leveling or patching compounds of any kind, improper preparation or installation or maintenance procedures, and any other condition beyond the control of The Mohawk Group. In order for this warranty to be valid, the following must be on record at The Mohawk Group offices five days prior to the date of installation of floor covering where Nu Spraylok™ adhesive is to be used: 1. Moisture vapor emission test results**, dated, notarized and certified by an independent facility; 2. Alkalinity test results** notarized, including a color photograph of test strip alongside color scale; 3. Temperature & humidity at time of testing; 4. Sub floor type and prep data; 5. Specific installation procedures to be employed; 6. Flooring material used.

Nu Spraylok™ adhesives are not warranted when applied to concrete slabs which do not have a proper vapor shield barrier in place. Nu Spraylok™ adhesives are not warranted when applied to concrete slabs that are not in complete and total compliance with municipal, state or any other applicable building and construction codes.

Slabs which show visual evidence of surface or residual moisture at any time subsequent to the installation are specifically excluded from all warranties.

Nu Spraylok™ adhesives are not warranted in those cases where specific floor preparation guidelines are not followed as outlined in The Mohawk Group's Nu Spraylok™ Installation Guidelines for floor coverings. .

In order to file a claim, a written notice along with all support data i.e. vapor emission test results, environmental conditions at time of testing, sub floor prep data, specific installation procedures employed, type of flooring material, adhesive used, etc..., or any claimed defect, must be received within thirty (30) days of the discovery of a potential breach of this warranty in order to assert its right to any repairs or remedy covered by this warranty. The duration of this warranty shall be for **5 years** from the date of the installation. The Mohawk Group makes no warranty of merchantability or fitness for a particular purpose.

Installer must be approved by The Mohawk Group Field Technical Services.

**** TESTS MUST BE PERFORMED IN ACCORDANCE WITH CRI 104/105 STANDARDS****

Revised 12/14/05

The Mohawk Group

500 TownPark Lane
Kennesaw, GA 30144

NU SPRAYLOK PLATINUM ADHESIVE
MATERIAL SAFETY DATA SHEET

SECTION I

MANUFACTURER'S NAME: Interlock Industries, Inc.
Address: 1209 Cleveland Hwy., Suite 346, Dalton, GA 30721
Product Class: Aerosol Water Based Adhesive
Product Name: Nu Spraylok Platinum Adhesive
Telephone Number: 706-517-8989, 706-517-8990 (fax)
HAZMAT Emergency: Chemtrec, 800-424-9300
Date Issued: January 16, 2004

SECTION II

HAZARDOUS INGREDIENTS: None per OSHA Regulation #29CFR1910.1200. **None** per SARA Extremely Hazardous Substance List. **None** per CERCLA Hazardous Substance List. **None** per SARA Toxic Chemical List. Volatile Organic Compounds (VOC): **None**. Note: This product utilizes HFC 134A as a propellant and has been exempted from the list of volatile organic compounds (VOCs) under Clean Air Act regulations (40 CFR 51.000).

SECTION III

PHYSICAL DATA: Boiling Point: -15.7° F. VAPOR PRESSURE: 96 psia @ 77° F. VAPOR DENSITY: Heavier than air. % VOLATILES: 25%. SOLUBILITY IN WATER: 70 WT% @ 77° F. APPEARANCE & ODOR: White to clear. Mild and sweet. EVAPORATION RATE: N/A

SECTION IV

FIRE & EXPLOSION DATA: FLASH POINT: Will not burn. FLAMMABLE LIMITS IN AIR, % BY VOLUME: LEL: N/A. UEL: N/A. EXTINGUISHING MEDIA: N/A. SPECIAL FIRE FIGHTING PROCEDURES: None. UNUSUAL FIRE & EXPLOSION HAZARDS: Cylinders may vent under fire conditions. Self-contained breathing apparatus (SCBA) may be required if cylinders rupture or release under fire conditions.

SECTION V

REACTIVITY DATA: CHEMICAL STABILITY: Stable. CONDITIONS TO AVOID: Open flames & high temperatures. INCOMPATIBILITY WITH OTHER MATERIALS: Incompatible with alkali or alkaline earth metals. DECOMPOSITION: Decomposition ingredients are hazardous. This product can be decomposed by high temperatures (above 126° F) forming hydrofluoric acid & possibly carbonyl fluoride. POLYMERIZATION: Will not occur.

SECTION VI

HEALTH HAZARDS: ROUTES OF ENTRY: Inhalation, skin, eyes. INHALATION: Gross overexposure of concentrated propellent may cause: Central nervous system depression with dizziness, confusion, incoordination, drowsiness or unconsciousness, irregular heart beat, fainting, weakness, sometimes progressing to loss of consciousness and death. Suffocation, if air is displaced by vapors. SKIN: Immediate effects of overexposure to propellant may include: Frostbite, if liquid or escaping vapor contacts the skin. EYE CONTACT: "Frostbite-like" feel may occur if the liquid or escaping vapors contact the eyes. HEALTH HAZARDS: None known. CARCINOGENICITY: None. **FIRST AID PROCEDURES:** INHALATION: If high concentrations of propellent are inhaled, immediately remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician. SKIN CONTACT: In case of contact, immediately wash with soap & water. EYE CONTACT: Wash with water for 15 minutes and call physician.

SECTION VII

PRECAUTIONS FOR HANDLING & USE: ACCIDENTAL RELEASE MEASURES: Ventilate area, especially low or enclosed places where heavy vapors might collect. Extinguish open flames. Clean up adhesive with soap and water. WASTE DISPOSAL METHOD: Dispose per local, state & federal regulations. STORAGE: Store in a clean, dry place. Do not heat above 126° F and avoid freezing.

SECTION VIII

CONTROL MEASURES: PERSONAL PROTECTIVE EQUIPMENT: Under normal use and handling conditions, no protective equipment should be required nor respiratory protection. EXPOSURE GUIDELINES: PEL: None established. TLV: None established. AEL (DuPont): 1000 ppm, 8 & 12 hr. TWA. WEEL: 1000 ppm, 8 hr. TWA.

SECTION IX

TRANSPORTATION: ***Ground Shipments:*** PROPER SHIPPING NAME: Consumer Commodity ORM-D. DOT/IMO: ORM-D. Common Carrier NMSFC# 4610-0. Class: 60.
HAZARDOUS MATERIALS IDENTIFICATION SYSTEM:

HEALTH:	1	REACTIVITY:	1	FLAMMABILITY:	0

The Mohawk Group

NU SPRAYLOK ADHESIVE CLEANER
MATERIAL SAFETY DATA SHEET

500 TownPark Lane
Kennesaw, GA 30144

SECTION I **MANUFACTURER'S NAME:** Interlock Industries, Inc.
Address: 1209 Cleveland Hwy., Suite 346, Dalton, GA 30721
Product Class: Adhesive Cleaner
Product Name: Nu Spraylok Adhesive Cleaner (#4500)
Telephone Number: 706-517-8989, 706-517-8990 (fax)
HAZMAT Emergency: Chemtrec, 800-424-9300
Date Issued: January 16, 2004

SECTION II **HAZARDOUS INGREDIENTS:** Aliphatic Hydrocarbon, CAS # 8052-41-3. Volatile Organic Compounds (VOC): 40 - 50% by weight. Exposure Limits: OSHA PEL - 500.

SECTION III **PHYSICAL DATA:** Boiling Point: Not determined. VAPOR PRESSURE: 90 - 100 psia @ 70° F. VAPOR DENSITY: (Air =1) > 1. % VOLATILES: 40 -50%. SOLUBILITY IN WATER: Insoluble. APPEARANCE & ODOR: Transluscent liquid with sweet citrus odor. EVAPORATION RATE (Ethel Ether =1): <1.

SECTION IV **FIRE & EXPLOSION DATA:** Flammable Classification: Flammable per ASTM D-3065-77 Flame Extension Test. FLASH POINT: Approximately 120° F. FLAMMABLE LIMITS IN AIR, % BY VOLUME: LEL: N/A. UEL: N/A. EXTINGUISHING MEDIA: Foam, CO^2, Dry Chemical. SPECIAL FIRE FIGHTING PROCEDURES: Keep aerosol containers cooled with water fog to prevent bursting. UNUSUAL FIRE & EXPLOSION HAZARDS: Contents under pressure. Exposure of aerosol cans to temperatures above 120° F may cause bursting.

SECTION V **REACTIVITY DATA:** CHEMICAL STABILITY: Stable. CONDITIONS TO AVOID: Open flames & temperatures above 120° F. INCOMPATIBILITY WITH OTHER MATERIALS: Strong oxidizers. DECOMPOSITION: Carbon Monoxide & Carbon Dioxide. POLYMERIZATION: Will not occur.

SECTION VI **HEALTH HAZARDS: ROUTES OF ENTRY:** Inhalation, ingestion, skin, eyes. INHALATION: Respiratory irritation, dizziness, and weakness. SKIN: Redness, irritation and de-fatting of skin. EYE CONTACT: Redness, irritation and tearing. INGESTION: Gastrointestinal irritation, nausea, vomiting, diarrhea. HEALTH HAZARDS: None known. CARCINOGENICITY: None. **FIRST AID PROCEDURES:** INHALATION: Move to fresh air. Get medical attention if irritation persists. INGESTION: Get immediate medical attention. SKIN CONTACT: In case of contact, immediately wash with soap & water. Contact Physician if irritation persists. EYE CONTACT: Wash with water for 15 minutes and call physician if irritation continues.

SECTION VII **PRECAUTIONS FOR HANDLING & USE:** ACCIDENTAL RELEASE MEASURES: Ventilate area, and soak up with absorbent material and dispose of accordingly. Large spills are unlikely due to aerosol packaging. Clean up any residue with soap and water. WASTE DISPOSAL METHOD: Dispose per local, state & federal regulations. Do not puncture unless contents have been completely emptied. STORAGE: Store in a clean, dry place. Do not heat above 126 F and avoid freezing.

SECTION VIII **CONTROL MEASURES:** PERSONAL PROTECTIVE EQUIPMENT: Under normal use and handling conditions, no protective equipment should be required nor respiratory protection. EXPOSURE GUIDELINES: PEL: 500. TLV: None established. RESPIRATORY PROTECTION: Use NIOSH approved self-contained breathing apparatus if PEL is exceeded. VENTILATION: Sufficient local or mechanical ventilation to maintain vapor concentrations below PEL. PROTECTIVE GLOVES: Solvent resistant. EYE PROTECTION: Safety glasses with chemical splash-proof side shields, chemical goggles and/or face shield. OTHER PROTECTIVE MEASURES: Sufficient to prevent skin contact.

SECTION IX **TRANSPORTATION:** ***Ground Shipments:*** PROPER SHIPPING NAME: Consumer Commodity ORM-D. DOT/IMO: ORM-D. Common Carrier NMSFC# 4610-0. Class: 60.
HAZARDOUS MATERIALS IDENTIFICATION SYSTEM:

HEALTH:	1	REACTIVITY:	0	FLAMMABILITY:	2

NU SPRAYLOK™ INSTALLATION GUIDELINES FOR WAL-MART FLOORCOVERINGS

GENERAL INFORMATION & STORAGE

For safe handling and storage information on this product, consult the Material Safety Data Sheets (MSDS).

NOT FREEZE THAW STABLE. STORAGE MUST BE @ 68 DEGREES FARENHEIT OR ABOVE.

Perform required Moisture Vapor Emission and Alkalinity Tests. TESTING IS MANDATORY. Test results must be on file in the Mohawk Group Field Services Dept. before the job starts.

Cold Weather Information: A Freeze indicator is applied to the top of each cylinder, whenever the cylinder has been frozen, the indicator will pop out black or red. A temperature strip is also applied to the side of each cylinder, to determine the temperature.

In order to avoid possible job failures due to high moisture and high alkalinity, the following guidelines must be followed:

Whenever the moisture vapor emission is 5 or higher and the pH is 10 or above, adhesive remover is required. Using Nu Spraylok Adhesive Remover (DK 138) and following the procedures for its use, will ensure that all of the old adhesive will be completely removed from the substrate. When old adhesive is not fully removed, Nu Spraylok will not bond to concrete, but to the old adhesive. If the moisture and pH levels rise above the previously mentioned levels, old adhesive will re-emulsify and cause the installation to fail. It is important to note that Nu Spraylok is not failing under these conditions, but the failure results from improper floor preparation.

Exact usage, coverage and procedures are included in these pages. It is important to note that the precise amount of Nu Spraylok Adhesive Remover may vary depending on floor moisture, pH levels, and the amount of old adhesive on the floor. The amount of adhesive on the floor and its moisture condition in some cases cannot be determined until the floor covering is removed. Please note that if there are any visual indications of higher than normal levels of moisture or pH, the job should not be continued without consulting with the Mohawk Field Services office. Call 800-833-6954, option 5 to speak to an expert on these issues. This line is monitored. If you need immediate attention after hours, please call 706-463-6057.

When the pH is 10 or above, Nu Spraylok pH Reducer (DK141) is required. Following the procedures will reduce the pH to an acceptable level. It is important to note that Moisture and pH will most likely fluctuate.

Mohawk strongly recommends having a Field Services technician present at the beginning of each job that has higher levels of moisture or pH that will involve us of our Nu Spraylok Adhesive Remover.

Taking these necessary precautions and using the Nu Spraylok system, will in most cases, save Wal-Mart from future problems and high expenses incurred during and after installation, and the even more costly loss of retail sales space.

A significant additional advantage of removing all old adhesive before using Nu Spraylok for the first time, whether or not there are high levels of moisture and pH, is that future removal of floor covering and the installation of new, will require no floor prep other than removal of old flooring. Simply re-spray Nu Spraylok and install the new flooring. This will save a significant amount of time and expense in future installations.

Please continue sending all moisture and pH test results to Field Services, where we can determine which stores will need the adhesive remover and floor absorbent. This will ensure the remover and cleaner are shipped with the adhesive, to cut down on freight costs. Having these tests results in our office ensure that the warranty remains in effect.

FLOOR PREPARATION

TOOLS REQUIRED:

Terminator
Two Rotary Floor buffers with Scrape-Away attachments and Sand Paper attachments, with large grit paper
Two commercial Blower Fans
Two Garden Sprayers
Two Flat Sheet Metal Floor Scrapers
Flat Square Nose Shovel
30 Gallon Trash Can
Floor Scrubbing Machine with Black Scrubbing Pads (Wal*Mart Supplied)
100 lb. roller

Nu Spraylok Items Required:

1 Starter Kit (includes spray gun, system cleaning parts) – DK119
1 Nu Spraylok 22 oz. (4 pack) – DK135
1 Backpack – DK124
1 One Shot Cleaner (12 pack) – DK118

For Luxury Vinyl Tile only

X Nu Spraylok Wal-Mart Platinum – DK133
(1 cylinder covers approx. 2,500 sf)

For VCT only

X Nu Spraylok VCT Platinum – DK126
(1 cylinder cover approx 4,000 sf)

High moisture/pH stores will also include:

X Nu Spraylok Adhesive Remover – DK138
(5 gal bucket of Remover & a 50 lb bag of Absorbent)
(10 gal covers approx 2,500 sf & one bag covers 2,500 sf)
Nu Spraylok pH Reducer (DK141)
(5 gal pail covers approx 5,000 sf.)

ADHESIVE REMOVAL INSTRUCTIONS

Based on previous stores, where multiple floor covering replacements have occurred, the amount of Nu-Spraylok adhesive remover used has been approximately ten gallons per twenty-five hundred square feet. Due to the high moisture, the old adhesive could liquefy. In this case it is the installers responsibility to determine, after the first night, if any additional adhesive remover is needed. If additional remover is needed, Wal*Mart must be contacted immediately to order the additional adhesive remover. This will allow proper time for shipping, and not create any schedule problems. There will be two-five gallon buckets of remover sent for each cylinder of adhesive.

STEP #1 Using the terminator, remove old floor covering. With a sharp blade on the terminator, scrape up as much adhesive as possible. We recommend starting with a twenty-five hundred square feet area the first night and adjust accordingly.

WARNING: FLOOR WILL BECOME VERY SLICK DURING THIS PROCESS.

STEP #2 Use a garden sprayer to apply the Nu Spraylok Adhesive Remover (DK138) to the entire area. Saturate old adhesive and allow to sit for approximately thirty minutes. Reapply on spots that appear dry.

STEP #3 Apply Floor Absorbent (DK138). One bag should cover at least a twenty-five hundred square foot area. The floor absorbent will soak up the broken down adhesive and will prevent the floor from being so slick during the next step.

STEP #4 Start in the area where the adhesive remover was first applied. Use the rotary buffer with the Scrape-Away attachment to remove the adhesive from the entire floor. Some areas may require additional work.

STEP #5 After the adhesive has been scraped with the buffing machine there should be a gooey, or liquefied gel left of the floor. With a wide sheet metal scrapper, scrape the old adhesive into a pile. With a shovel put into a trash can for disposal.

STEP #6 Attach the black mesh-scrubbing pad to the floor scrubber, and fill with clean, warm water. Clean floor approximately three times, or as many times needed to remove any residue, and dry with blower fans. The floor should have a slick glazed look when dry,

STEP #7 Patch any necessary areas with a Portland base floor patch.

pH REDUCER INSTRUCTIONS

Portland base floor patch must be dry before applying pH Reducer (DK141).

Using a garden sprayer adjust tip to spray a light mist of solution (app coverage 5-gal 5000 sq ft) When spraying expansion, or cut joints hold wand closer to the substrate spraying a medium mist. Allow solution to completely dry before spraying adhesive. Clean sprayer and wand with tap water.

NU SPRAYLOK PLATINUM SYSTEM START-UP

STEP #1 Snap chalk lines on floor for reference points.

STEP #2 Open starter kit (DK119)

STEP #3 Attach the Nu Spraylok Heat Jacket (DK137) to the cylinder using the Velcro straps. Plug the cord into an electrical outlet for approximately ten minutes. The amount of time heated will depend on the temperature of the cylinder and the desired spray pattern. The warmer the cylinder, the finer and broader the spray pattern will be.

DO NOT LEAVE THE HEAT JACKET ON THE CYLINDER FOR MORE THAN THIRTY MINUTES AT A TIME

Caution: Use great care when handling the heat jacket to avoid burns. This jacket gets very hot quickly and should not be touched with bare skin while plugged in. After heating the cylinder of Nu Spraylok, again use great caution and care removing the very hot heat jacket. Handle it carefully using either gloves, the jacket Velcro strips or the electrical cord during removal. Do not place the hot heat jacket on any surface that could burn or melt or otherwise be damaged due to heat.

STEP #4 Attach hose to cylinder with twist-on connector.

STEP #5 To begin spraying turn on cylinder by rotating valve counter clockwise

STEP #6 A backpak has been supplied for use if desired.

INSTALLING LUXURY VINYL TILE
(DK133 only)

SPRAYING ADHESIVE

STEP #1 Begin spraying by holding the wand approximately 20" off the floor at a 45-degree angle.

STEP #2 Spray a medium frost over the entire area, being careful not to leave any voids. Overlapping each spray pattern. **Approximate coverage yield is 2,500 square feet or 277 square yards per cylinder**.

STEP #3 Use Nu-Spraylok 22 oz. **(DK135)** for tight areas, cutting in, and all repairs.

STEP #4 **IMPORTANT:** Do not lay floor covering into adhesive until completely dry. Drying time is approximately 30 minutes. Use of blower fans will speed up drying time. Drying time will vary in different climates.

STEP #5 Install floor covering following the manufactures recommendations.

STEP #6 Roll floor with a 100-pound roller.

Note: Do not use DK126 for Luxury Vinyl Installations

INSTALLING VINYL COMPOSITION TILE (VCT)
(DK126 only)

STEP #1 Begin spraying by holding the wand approximately 20"off the floor at a 45 degree angle.

STEP #2 Spray a **light frost** over the entire area being careful not to leave any voids. Approximate coverage yield is 4,000 square feet per cylinder.

STEP #3 Use Nu-Spraylok Platinum 22oz **(DK135)** for tight areas, cutting in, and all repairs.

STEP #4 **IMPORTANT:** Do not lay floor covering into adhesive until completely dry. Drying time is approximately 15 to 30 minutes. Use of blower fans will speed up drying time. Drying time will vary in different climates.

STEP #5 Install VCT following the manufactures recommendations.

STEP #6 Roll Floor with 100-pound roller.

Note: Do not use DK133 for VCT installations!

Material Safety Data Sheet
[OSHA 29 CFR 1910.1200]

The QUIKRETE® Companies
One Securities Centre
3490 Piedmont Road, Suite 1300
Atlanta, GA 30329

Emergency Telephone Number
(770) 216-9580

Information Telephone Number
(770) 216-9580

Revision: February 2006

MSDS E

SECTION I: PRODUCT IDENTIFICATION

Product Types: QUIKRETE® DRY PACKAGED PORTLAND CEMENT BASED PRODUCTS (SERIES 4)

QUIKRETE® Product Name	Code #	QUIKRETE® Product Name	Code #
MORTAR MIX	1102	MASON MIX	1136
BASE COAT STUCCO	1139	EXTERIOR STUCCO	1209
FINISH COAT STUCCO	1201	FOAM COATING	1219
MASONRY COATING	2400	MARBLE STUCCO	1802
QUIKWALL® SURFACE BONDING CEMENT	1230	HEAVY DUTY MASONRY COATING	1300
POOL PLASTER	1319	GLASS BLOCK MORTAR	1610
ROOF TILE MORTAR	1140	POOL FINISH	1800
POLYMER MODIFIED SANDED TILE GROUT	1489	SANDED TILE GROUT	1156
THIN-SET FLOOR MIX	1548	THIN-SET WALL MIX	1554
OMNI GROUT SANDED	1490	THIN-SET MULTI-PURPOSE	1550
PEBBLE FINISH	1806	THIN-SET SANDED	1547
BULK MASONRY MORTARS	1162	INCA 1000 MINE SEALANT	1225-50
VENEER STONE MORTAR	1137		

PRO FINISH QUIKRETE ® BLENDED MORTAR MIX 1136-58
QUIKRETE® ONE COAT FIBERGLASS REINFORCED STUCCO SANDED 1200
(FORMERLY KNOWN AS QUIKWALL® FIBERGLASS REINFORCED STUCCO
QUIKRETE® ONE COAT FIBERGLASS REINFORCED STUCCO CONCENTRATED 1216
(FORMERLY KNOWN AS QUIKWALL FIBERGLASS REINFORCED STUCCO CONCENTRATED)

(ALSO APPLIES TO SPECIALTY AND/OR CUSTOM DESIGNED MORTARS & STUCCOS)

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Hazardous Components	CAS No.	PEL (OSHA) mg/M^3	TLV (ACGIH) mg/M^3
Silica Sand, crystalline	14808-60-7	$\frac{10}{\%SiO_2+2}$	0.05 (respirable)
Portland Cement	65997-15-1	5	5
May Contain one or more of the following ingredients:			
Pulverized Limestone	01317-65-3	5	5
Iron Oxide Pigments	01309-37-1	5	5
Lime	01305-62-0 or 39445-23-3	5	5
Clay	01332-58-7	5	5

Other Limits: National Institute for Occupational Safety and Health (NIOSH). Recommended standard maximum permissible concentration=0.05 mg/M^3 (respirable free silica) as determined by a full-shift sample up to 10-hour working day, 40-hour work week. See NIOSH Criteria for a Recommended Standard Occupational Exposure to Crystalline Silica.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance: Gray to gray-brown colored powder. Some products contain coarse aggregate. (Quikrete Vinyl Concrete Patcher available in white)

Specific Gravity:	2.6 to 3.15	**Melting Point**	2700 °F	**Boiling Point:**	2700 °F
Vapor Pressure:	None	**Vapor Density:**	None	**Evaporation Rate:**	None
Solubility in Water:	Slight	**Odor:**	None		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability: Noncombustible and not explosive.

SECTION V - REACTIVITY DATA

Stability: Stable.
Incompatibility (Materials to Avoid): Contact of silica with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, oxygen difluoride, may cause fires.
Hazardous Decomposition or By-products: Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas - silicon tetrafluoride.
Hazardous Polymerization: Will Not Occur.
Condition to Avoid: Keep dry until used to preserve product utility.

SECTION VI - HEALTH HAZARD DATA

Route(s) of Entry: Inhalation, Skin, Ingestion
Acute Exposure: Product becomes alkaline when exposed to moisture. Exposure can dry the skin, cause alkali burns and effect the mucous membranes. Dust can irritate the eyes and upper respiratory system. Toxic effects noted in animals include, for acute exposures, alveolar damage with pulmonary edema.
Chronic Exposure: Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis. Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs and possibly cancer. There is evidence that exposure to respirable silica or the disease silicosis is associated with an increased incidence of Scleroderma, tuberculosis and kidney disorders.

Carcinogenicity Listings:	NTP:	Known carcinogen
	OSHA:	Not listed as a carcinogen
	IARC Monographs:	Group 1 Carcinogen
	California Proposition 65:	Known carcinogen

NTP: The National Toxicology Program, in its "Ninth Report on Carcinogens" (released May 15, 2000) concluded that "Respirable crystalline silica (RCS), primarily quartz dusts occurring in industrial and occupational settings, is *known to be a human carcinogen*, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to RCS and increased lung cancer rates in workers exposed to crystalline silica dust (reviewed in IAC, 1997; Brown *et al.*, 1997; Hind *et al.*, 1997)
IARC: The International Agency for Research on Cancer ("IARC") concluded that there was "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources", and that there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz or cristobalite." The overall

IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is *carcinogenic to humans (*Group 1)." The IARC evaluation noted that "carcinogenicity was not detected in all industrial circumstances or studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of carcinogenic Risks to Humans, Volume 68, "Silica, Some Silicates..." (1997)

Signs and Symptoms of Exposure: Symptoms of excessive exposure to the dust include shortness of breath and reduced pulmonary function. Excessive exposure to skin and eyes especially when mixed with water can cause caustic burns as severe as third degree.

Medical Conditions Generally Aggravated by Exposure: Individuals with sensitive skin and with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation, should be precluded from exposure. Exposure to crystalline silica or the disease silicosis is associated with increased incidence of scleroderma, Tuberculosis and possibly increased incidence of kidney lesions.

Emergency First Aid Procedures:

Eyes: Immediately flush eye thoroughly with water. Continue flushing eye for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.

Skin: Wash skin with cool water and pH-neutral soap or a mild detergent. Seek medical treatment if irritation or inflammation develops or persists. Seek immediate medical treatment in the event of burns.

Inhalation: Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. Seek medical help if coughing and other symptoms do not subside. Inhalation of large amounts of portland cement require immediate medical attention.

Ingestion: Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Spills: If spilled, use dustless methods (vacuum) and place into covered container for disposal or use if not contaminated or wet. Use adequate ventilation.

Waste Disposal Method: The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under RCRA or CERCLA.

SECTION VIII - CONTROL MEASURES/PERSONAL PROTECTION

Inhalation: DO NOT BREATE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator is recommended. Local exhaust can be used, if necessary, to control airborne dust levels.

Eyes: Wear tight fitting goggles.

Skin: The use of barrier creams or impervious gloves, boots and clothing to protect the skin from contact is recommended. Following work, workers should shower with soap and water. Precautions must be observed because burns occur with little warning -- little heat is sensed.

WARN EMPLOYEES AND/OR CUSTOMERS OF THE HAZARDS AND REQUIRED OSHA PRECAUTIONS ASSOCIATED WITH THE USE OF THIS PRODUCT.

NOTE: The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products.

Vinegar

Material Safety Data Sheet (MSDS)

Issue/Revision Date: 16 February 2009

Section 1. Product and Company Information

Chemical Name: Acetic acid, 5% by volume
Synonym(s): None
Tradename(s): Distilled white vinegar, Full Disclosure Extraction Solution #2
Catalog No.: 550-021, also component of 550-001 and 550-002

Company: SKC Inc.
Address: 863 Valley View Road
Eighty Four, PA 15330 U.S.A.
Phone: 724-941-9701
Fax: 724-941-1369
Toll-free (U.S.): 800-752-8472
Email: skctech@skcinc.com
Web: www.skcinc.com

Section 2. Composition/Information on Ingredient(s)

Chemical Name	Formula	CAS #	OSHA PEL	ACGIH® TLV®
Acetic acid, 5% by volume	CH_3COOH	8028-52-2	None	None

Section 3. Hazards Identification

LD50 LC50 Mixture: None specified by manufacturer

Route of Entry Indicators
- **Inhalation:** Yes
- **Skin Contact:** Yes
- **Ingestion:** Yes

Carcinogenicity Indicators
- **NTP:** No
- **IARC:** No
- **OSHA:** No

Effects of Exposure
- **Inhalation:** Prolonged inhalation of vapors can cause irritation to respiratory tract.
- **Eyes:** Will cause eye irritation (smarting and reddening of the eye)

Explanation of Carcinogenicity: Not relevant

Signs and Symptoms of Overexposure: See Effects of Exposure.

Medical Conditions Aggravated by Exposure: None specified by manufacturer

Section 4. First Aid Measures

Inhalation
Remove to fresh air. Support breathing (give oxygen/artificial respiration).

Skin
Flush with copious amounts of water. Call physician.

Eye
Flush immediately and thoroughly with water for at least 15 to 20 minutes (timed by a clock). Call a physician.

Ingestion
Large amounts of water should be consumed to dilute. Do not induce vomiting. Do not give emetics or baking soda. Call a physician.

Section 5. Fire Fighting Measures

Flash Point: N/A
Auto-ignition Temperature: N/A
Flammability: N/A

Extinguishing Media: Media suitable for surrounding fire
Firefighting Procedures: Use NIOSH/MSHA-approved SCBA and full protective equipment.
Unusual Fire Explosion Hazard: None specified by manufacturer

Section 6. Accidental Release Measures

Spill Release Procedures: If spilled, water may be used to dilute.
Neutralizing Agent: None specified by manufacturer

Section 7. Handling and Storage

Handling and Storage Precautions: None specified by manufacturer
Other Precautions: None specified by manufacturer

Section 8. Exposure Controls/Personal Protective Equipment (PPE)

Respiratory Protection: NIOSH/MSHA-approved respirator appropriate for exposure of concern
Ventilation: None specified by manufacturer
Protective Gloves: None specified by manufacturer
Eye Protection: None specified by manufacturer
Other Protective Equipment: None specified by manufacturer
Work Hygienic Practices: None specified by manufacturer
Supplemental Safety and Health: PH: 2.2 @ 100 grain

Section 9. Physical/Chemical Properties

Appearance: Clear liquid
Odor: Vinegar

Chemical Properties

Property	Value
B.P. Text	244 F (118 C)
Vapor Pressure	11 mm
Vapor Density	2.1
Specific Gravity	1.01
PH	2.2 @ 100 grain
Evaporation Rate/Ref	Not Known
Solubility in Water	Complete

Note: No further properties were reported by chemical supplier.

Section 10. Stability and Reactivity

Stability Indicator:	Yes
Stability Condition to Avoid:	None specified by manufacturer
Materials to Avoid:	None specified by manufacturer
Hazardous Decomposition Products:	None specified by manufacturer
Hazardous Polymerization Indicator:	No
Conditions to Avoid Polymerization:	Not relevant

Section 11. Toxicological Information

No data available from chemical supplier

Section 12. Ecological Information

No data available from chemical supplier

Section 13. Disposal Considerations

Disposal must be in accordance with federal, state, and local regulations.

Section 14. Transport Information

No data available from chemical supplier

Section 15. Regulatory Information

No data available from chemical supplier

Section 16. Other Information

Disclaimer
For approved uses only

The above information is believed to be correct, but does not purport to be all-inclusive and shall be used only as a guide. SKC Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

#1

WILSONART INTERNATIONAL

Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Common Name	Wilsonart(R) Laminate [All Grades and Thicknesses]	Code	USA16439
Supplier	WILSONART INTERNATIONAL INC. P.O. BOX 6110 - 2400 Wilson Place, Temple, TX 76503 Telephone: 800-433-3222 (USA) or 254-207-7000	MSDS#	16439
Synonym	High pressure decorative laminate, all grades/thicknesses, including high pressure backer products.		
Trade name	Wilsonart(R) Laminate (All Grades and Thicknesses)	Responsible Name	Wilsonart International Inc.
Material Uses	Laminate.	In Case of Emergency	CHEMTREC: 800-424-9300 (USA) 703-527-3887 (International)
Manufacturer	WILSONART INTERNATIONAL, INC. P.O. BOX 6110, Temple, TX 76503-6110 Information Phone: 254-207-7000 or 800-433-3222		

Section 2. Composition and Information on Ingredients

Name	CAS #	% by Weight	Exposure Limits
No hazardous ingredient.			

Section 3. Hazards Identification

Physical State and Appearance	Solid. (sheet)
Emergency Overview	Dust generated during machining of product may cause mechanical irritation of eyes, skin, and respiratory system.
Routes of Entry	Eye contact. Inhalation (dust during machining). Skin contact.
Potential Acute Health Effects	
Eyes	Dust may cause mechanical irritation to eye.
Skin	Dust may cause mechanical irritation. Any sharp edges will cut or abrade the skin.
Inhalation	Inhalation of dust will produce irritation to respiratory tract, characterized by sneezing and coughing.
Ingestion	Not an expected route of entry.
Potential Chronic Health Effects	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
Medical Conditions Aggravated by Overexposure:	Asthmatic conditions may be aggravated by uncontrolled airborne dust exposures.
Overexposure /Signs/Symptoms	Skin inflammation is characterized by itching, scaling, reddening. Inflammation of the eye is characterized by redness, watering, and itching.

See Toxicological Information (section 11)

Continued on Next Page

Section 4. First Aid Measures

Eye Contact	DUST PARTICLES: In case of contact with eyes, rinse immediately with plenty of water. If irritation persists, seek medical attention.
Skin Contact	DUST PARTICLES: May cause skin sensitization. Wash contaminated skin with soap and water.
Inhalation	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. Allow the victim to rest in a well ventilated area. If irritation persists, seek medical attention.
Ingestion	Not applicable.
Notes to Physician	No additional information.

Section 5. Fire Fighting Measures

Flammability of the Product	Not considered to be flammable. Will burn in a fire situation.
Auto-ignition Temperature	Not applicable.
Flash Points	Not applicable.
Flammable Limits	Not available.
Products of Combustion	carbon oxides (CO, CO2)
Fire Hazards in Presence of Various Substances	Combustible in presence of open flames. Non-flammable in presence of shocks, oxidizing materials, reducing materials, combustible materials, organic materials, metals, acids, alkalis, moisture.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: None. Risks of explosion of the product in presence of static discharge: Laminate dusts are not electrostatic discharge hazards.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO2, water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
Protective Clothing (Fire)	Fire fighting requires the use of a self contained breathing apparatus with a full face piece and pressure-demand or other positive-pressure mode.
Special Remarks on Fire Hazards	Finely divided dust generated by sawing, routing, or similar operations can create an explosion hazard if the airborne dust concentration exceeds 900 grams per cubic meter* and contacts an ignition source in excess of 8 joules. *A person standing in a uniformly dispersed dust cloud of 50 grams per cubic meter will not be able to see his outstretched hand.
Special Remarks on Explosion Hazards	No additional remark.

Section 6. Accidental Release Measures

Small Spill and Leak	Pick up solids and put in an appropriate container for later disposal
Large Spill and Leak	Not applicable.

Continued on Next Page

Section 7. Handling and Storage

Handling	After handling, always wash hands thoroughly with soap and water.
Storage	Store in a dry, well ventilated area. *[Small amounts of residual formaldehyde may be released in measureable quantities when laminate is shipped or stored in bulk quantities.]*

Section 8. Exposure Controls/Personal Protection

Engineering Controls	If user operations (machining, routing, or cutting) generate dust, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	
Eyes	Safety glasses with side shields.
Body	No special protective clothing is required. It is suggested that skin contact with dust is minimized.
Respiratory	When ventilation is inadequate, wear approved/certified respirator with appropriate particulate dust filters.
Hands	Gloves suitable for protection against cuts from rough, sharp edges are recommended.
Feet	No special precautions are necessary if used as intended.
Protective Clothing (Pictograms)	
Personal Protection in Case of a Large Spill	Not applicable.

Product Name	Exposure Limits
No hazardous ingredients.	

Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical State and Appearance	Solid. (sheet)
Molecular Weight	Not available.
Molecular Formula	Not applicable.
pH (1% Soln/Water)	Not applicable.
Boiling/Condensation Point	Not applicable.
Melting/Freezing Point	Not available.
Critical Temperature	Not available.
Specific Gravity	Not applicable.
Vapor Pressure	Not applicable.
Vapor Density	Not applicable.
Volatility	Not applicable.

Odor	Odorless.
Taste	Not available.
Color	Varies.

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Odor Threshold	Not available.
Evaporation Rate	Not applicable.
VOC	Not applicable.
Viscosity	Not applicable.
$LogK_{ow}$	Not available.
Ionicity (in Water)	Not available.
Dispersion Properties	Is not dispersed in cold water, hot water, methanol, diethyl ether, n-octanol, acetone.
Solubility	Insoluble in water.
Physical Chemical Comments	Not available.

Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	NONE
Incompatibility with Various Substances	Not considered to be reactive.
Hazardous Decomposition Products	Products of combustion include: carbon oxides (CO, CO2)
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

Toxicity to Animals	This product has not been tested for animal effects.
Chronic Effects on Humans	No additional information.
Other Toxic Effects on Humans	No additional information.
Special Remarks on Toxicity to Animals	No additional remark.
Special Remarks on Chronic Effects on Humans	No additional remark.
Special Remarks on Other Toxic Effects on Humans	Asthmatic conditions may be aggravated by uncontrolled airborne dust exposures.

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Biodegradable/OECD	Not available.
Mobility	Not available.
Toxicity of the Products of Biodegradation	Not available.

Continued on Next Page

Special Remarks on the Products of Biodegradation	No additional remark.

Section 13. Disposal Considerations

Waste Information	Dispose of according to all federal, state and local regulations.
Waste Stream	Not available.

Consult your local or regional authorities.

Section 14. Transport Information

DOT Classification	Not a DOT controlled material (United States).
Marine Pollutant	Not a Marine Pollutant.
Special Provisions for Transport	Not applicable.
ADR/RID Classification	Not controlled under ADR (Europe).
IMO/IMDG Classification	Not controlled under IMDG.
ICAO/IATA Classification	Not controlled under IATA.

Section 15. Regulatory Information

HCS Classification	Not controlled under the HCS (United States).
U.S. Federal Regulations	TSCA: All ingredients are listed. SARA 302/304/311/312 extremely hazardous substances: No products were found. SARA 302/304 emergency planning and notification: No products were found. SARA 302/304/311/312 hazardous chemicals: No products were found. SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found. SARA 313 toxic chemical notification and release reporting: No products were found. Clean water act (CWA) 307: No products were found. Clean water act (CWA) 311: No products were found. Clean air act (CAA) 112 accidental release prevention: No products were found. Clean air act (CAA) 112 regulated flammable substances: No products were found. Clean air act (CAA) 112 regulated toxic substances: No products were found.
International Regulations	
EINECS	Not available.
DSCL (EEC)	Not controlled under DSCL (Europe).
International Lists	No products were found.
State Regulations	No products were found. California Prop. 65: <u>WARNING!</u> This product contains formaldehyde, a substance known to the State of California to cause cancer. *[Small amounts of residual formaldehyde may be released in measureable quantities when laminate is shipped or stored in bulk quantities.]*

Continued on Next Page

Section 16. Other Information

Label Requirements

Dust generated during machining of product may cause mechanical irritation of eyes, skin, and respiratory system.

Hazardous Material Information System (U.S.A.)

Health	0
Fire Hazard	0
Reactivity	0
Personal Protection	A

National Fire Protection Association (U.S.A.)

References

-SAX, N.I. Dangerous Properties of Industrial Materials. Toronto, Van Nostrand Reinold, 6e ed. 1984.
-Patty's Industrial Hygiene and Toxicology
-Manufacturer's Material Safety Data Sheet.

GLOSSARY:
ACGIH - American Conference of Governmental Industrial Hygienists
ASTM - American Society for Testing and Materials
ADR - Agreement on Dangerous Goods by Road (Europe)
BOD5 - Biological Oxygen Demand in 5 days
CAS - Chemical Abstract Services
CEPA - Canadian Environmental Protection Act
CERCLA - Comprehensive Environmental Response, Compensation and Liability Act
CFR - Code of Federal Regulations
DOT - Department of Transportation
DSCL - Dangerous Substances Classification and Labeling (Europe)
DSL - Domestic Substance List (Canada)
EEC/EU - European Economic Community/European Union
EINECS - European Inventory of Existing Commercial Chemical Substances
HCS - Hazard Communication System
HMIS - Hazardous Material Information System
IARC - International Agency for Research on Cancer
LD50/LC50 - Lethal Dose/Concentration kill 50%
LDLo/LCLo - Lowest Published Lethal Dose/Concentration
NFPA - National Fire Prevention Association
NIOSH - National Institute for Occupational Safety & Health
NTP - National Toxicology Program
OSHA - Occupational Safety & Health Administration
PEL - Permissible Exposure Limit
RCRA - Resource Conservation and Recovery Act
SARA - Superfund Amendments and Reorganization Act
STEL - Short Term Exposure Limit (15 minutes)
TDG - Transportation of Dangerous Goods (Canada)
TLV-TWA - Threshold Limit Value-Time Weighted Average
TSCA - Toxic Substances Control Act
WHMIS - Workplace Hazardous Material Information System

Other Special Considerations

No additional remark.

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Verified by Wilsonart International Inc..

Printed 03/29/2000.

CHEMTREC:
800-424-9300 (USA)
703-527-3887 (International)

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To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Wood Dust

MATERIAL SAFETY DATA SHEET

UNIVERSAL FOREST PRODUCTS®, INC.
2801 East Beltline NE, Grand Rapids, Michigan 49525
(616) 364-6161
www.ufpi.com

SECTION 1 – PRODUCT IDENTIFICATION

PRODUCT NAME:	**Wood Dust**
SYNONYMS:	Sawdust, sander dust
DESCRIPTION:	Wood dust includes dust from all hard and soft woods. Consists of particles generated by any manual or mechanical cutting or abrasion process performed on wood. Also includes wood dust from formaldehyde bonded wood products.
PREPARED BY:	Legal Compliance Department

SECTION 2 – HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

CAS #	Component	Percent
N/A	Wood/Wood dust	92-100%
50-00-0	Formaldehyde	0-8%

SECTION 3 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light to dark colored granular solid	Specific Gravity:	Not Available
Odor:	Wood odor—dependant on species	Vapor Pressure:	Not Available
Boiling Point:	Not Applicable	Vapor Density:	Not Applicable
Melting Point:	Not Applicable	Density:	Not Applicable
Freezing Point:	Not Applicable	% Volatile by Volume:	Not Applicable
Weight per Gallon:	Not Applicable	Solubility (H2O):	Not Applicable
Evaporation Rate:	Not Applicable	Reactivity (H2O):	Not Applicable

SECTION 4 – FIRE AND EXPLOSION HAZARD

Flash Point	Method	Upper/Lower Flammable Limit	Auto-ignition	Rate of Burn	Classification
Not Applicable	Not Applicable	Lower: 40.0 g/m^3	400–500 deg. F	Not Available	Combustible

Unusual Fire and Explosion Hazards: Wood is combustible, and wood dusts may form explosive mixtures with air in the presence of an ignition source.

Fire Fighting Equipment and Extinguishing Media: Use water to wet down wood to reduce the likelihood of ignition. Remove burned or wet dust to open area after fire is extinguished. Fire fighters should use full protective clothing including self-contained breathing apparatus.

SECTION 5 – HEALTH HAZARDS AND FIRST AID

WARNING! Wood dust may form an explosive mixture with air, use exhaust ventilation when cutting, sawing or grinding in an enclosed area. Wood dust may cause irritation to eyes, skin, and upper respiratory tract. When cutting, sanding, or grinding avoid inhalation and wear safety glasses. Handling may cause splinters, use puncture resistant gloves.

	Signs and symptoms of acute overexposure	First Aid Measures
Eyes:	Wood dust may cause irritation to the eyes. Symptoms can include irritation, redness, scratching of the cornea, and tearing	Immediately flush eyes with water for at least 15 minutes. Seek medical attention if symptoms persist
Skin:	Wood dust may cause irritation to the skin. Mechanical rubbing may increase skin irritation. Some wood species and their dusts may contain natural toxins, which may cause dermatitis or allergic reactions in sensitized individuals.	For skin contact flush immediately with soap and water, continue at least 15 minutes. If irritation persists, get medical attention immediately. If wood splinters are injected under the skin, get medical attention immediately.
Ingestion:	Ingestion of wood dusts is unlikely. If ingestion does occur, slight gastrointestinal irritation may result. Certain species of wood and their dusts may contain natural toxins, which can have adverse effects on humans.	If the material is swallowed, get medical attention or advice. Do not induce vomiting.
Inhalation:	Wood dust is irritating to the nose throat and lungs. Symptoms may include nasal dryness, deposits or obstructions in the nasal passages, coughing, sneezing, dryness and soreness of the throat and sinuses, hoarseness, and wheezing. Some species may cause allergic respiratory reactions with asthma-like symptoms in sensitized individuals.	If dusts are inhaled, remove person to fresh air. If symptoms persist, seek medical attention.

Note to Physician: Respiratory ailments and pre-existing skin conditions may be aggravated by exposure to wood dust

Medical Conditions Generally Aggravated by Exposure to Wood Dust: Pre-existing eye, respiratory system and skin conditions.

Chronic Overexposure: Wood dusts may be irritating to the eyes, skin and respiratory tract. Prolonged or repeated inhalation of wood dust may cause respiratory irritation, recurrent bronchitis, and prolonged colds. Depending on the species of wood, recurrent exposure may cause allergic skin and respiratory reactions in some individuals.

Carcinogenicity: Prolonged exposure to wood dust by inhalation has been reported to be associated with nasal and paranasal cancer. Wood dust is classified as a carcinogen by ACGIH, NIOSH, and IARC. This classification is based on an increased incidence of nasal and paranasal cancer in people exposed to wood dusts. Carcinogenicity of wood dust: ACGIH – A1 Confirmed Human Carcinogen (related to wood dusts-hard wood; NIOSH – Occupational carcinogen (related to wood dust); IARC -- Monograph 62, 1995 (related to wood dust)(Group 1 (carcinogenic to humans)). IARC has listed formaldehyde as a probable human carcinogen.

SECTION 6 – EXPOSURE CONTROL MEASURES/PERSONAL PROTECTION

Personal Protective Equipment

Eyes/Face: Wear Safety glasses with side shields when handling, cutting, sanding, or grinding this material. Use a face shield for processes that may generate excessive dusts and splinters.

Skin: Wear puncture resistant work gloves, such as leather when handling.

Respiratory: Respirators must be worn if the ambient concentration of airborne contaminants exceeds prescribed exposure limits. Dust masks may be worn to avoid inhalation of nuisance dust. Dust masks are not adequate protection in environments above the occupational exposure limit.

Ventilation: Cutting, grinding or sanding should be done outdoors or in a well ventilated area.

Component Exposure Limits

Component		OSHA		ACGIH	
		PEL	STEL	TLV	TLV STEL
*Wood/Wood dust	Softwoods	15 mg/m^3 total dust 5 mg/m^3 respirable fraction (as a nuisance dust)	N/A	1 mg/m^3 TWA	10 mg/m^3 TWA
	Hardwoods	15 mg/m^3 total dust 5 mg/m^3 respirable fraction (as a nuisance dust)	6 mg/m^3 TWA	1 mg/m^3 TWA	N/A
	Western Red Cedar	15 mg/m^3 total dust 5 mg/m^3 respirable fraction (as a nuisance dust)	N/A	0.5 mg/m^3 TWA	10 mg/m^3 TWA
Formaldehyde		0.75 ppm	2 ppm	0.3 ppm	N/A

*A state run OSHA program may have more stringent limits for wood dust and/or Particulates Not Otherwise Regulated.

SECTION 7 – SAFE HANDLING, STORAGE, DISPOSAL, AND ACCIDENTAL RELEASE MEASURES

Handling Procedures:

- Do not generate airborne dusts in the presence of an ignition source when sawing, cutting or grinding wood.
- Practice good personal hygiene procedures.
- Avoid contact of wood dusts with skin and eyes. Avoid breathing wood dusts.
- Do not eat, drink, or smoke when handling this product or in areas where dusts of this product are present.

Storage Procedures

- Maintain good housekeeping procedures, such as sweeping regularly to avoid accumulation of dusts
- Store in a cool, dry area away from excessive heat, sparks, and open flame.

Disposal Procedures

- Dispose of waste material according to local, State, and Federal Regulations.

Accidental Relases

- No containment measures are necessary

NOTICE: THE INFORMATION AND RECOMMENDATIONS SET FORTH ARE BELIEVED TO BE ACCURATE. HOWEVER, UNIVERSAL FOREST PRODUCTS®, INC., MAKES NO WARRANTY WITH RESPECT TO AND DISCLAIMS ALL LIABILITY FROM RELIANCE ON THE INFORMATION.