

MATERIAL SAFETY DATA SHEET

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SECTION I -- PRODUCT IDENTIFICATION

PRODUCT NUMBER: RUSTOP 6000
PRODUCT NAME: RUSTOP 6000
PRODUCT CLASS: Moisture Cure Aromatic Polyisocyanate

HMIS RATINGS: H F R PP
 1 3 1 K

SECTION II -- HAZARDOUS INGREDIENTS

INGREDIENT	CAS NUMBER	WEIGHT PERCENT	ACGIH/TWA OCCUPATIONAL EXPOSURE LIMIT
Diphenylmethane Diisocyanate (MDI)	26447-40-5	< 4.3	N.E./N.E.
Polyisocyanate based on MDI		34.6	N.E./N.E.
4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8	4.3	.005 ppm TWA/ .2ppm Ceiling
Xylene	1330-20-7	12.0	100 ppm
Aromatic 100 Solvent	64742-95-6	9.3	50 ppm
Toluene	108-88-3	7.9	100 ppm
Mineral Spirits (Rule 66)		2.8	100 ppm

SECTION III -- PHYSICAL DATA

V.O.C.: 3.5 lbs/gal. (420 grams/liter) VAPOR DENSITY: Heavier than AIR

EVAPORATION RATE: Slower than Ether % VOLATILE VOLUME: 49.5%

WT/GAL: 9.10 lbs/gal SOLUBILITY: Reacts in water

SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION: Flammable Liquid

FLASH POINT: 41°F (5°C) TCC LEL: N.E.

EXTINGUISHING MEDIA: Dry chemical, foam, carbon dioxide

UNUSUAL FIRE AND EXPLOSION HAZARDS:

During a fire, MDI vapors and other irritating and highly toxic gases may be generated by thermal decomposition or combustion. At temperatures greater than 400°F (204°C), polymeric MDI can polymerize and decompose which can cause pressure build-up in closed container explosive rupture is possible. Therefore use cold water to cool fire-exposed containers. (See Section - Reactivity Data)

SPECIAL FIREFIGHTING PROCEDURES:

Full emergency equipment with self-contained breathing apparatus must be worn by fire fighters.

SECTION V - HEALTH HAZARD DATA

ROUTE (S) OF ENTRY: Skin contact from liquid and aerosols (spray application).
Inhalation: Although MDI is low in volatility, an inhalation hazard can exist from MDI aerosols or vapors formed during heating, foaming or spraying.

HUMAN EFFECTS OF OVEREXPOSURE:

Acute Inhalation: MDI vapors or mist at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the TLV with similar symptoms as well as asthma attack. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms (e.g., fever, chills) has also been reported. These symptoms can be delayed up to several hours after exposure.

Chronic Inhalation: As a result of previous repeated overexposures or a single large dose, certain individuals develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the TLV. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthma attack, could be immediate or delayed (up to several hours after exposure). Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Overexposure to isocyanates has also been reported to cause lung damage (including decrease in lung function) which may be permanent. Sensitization can either be temporary or permanent.

Acute Skin Contact: Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.

Chronic Skin Contact: Prolonged contact can cause reddening, swelling rash, scaling, blistering, and in some cases, skin sensitization. Individuals who have developed a skin sensitization can develop these symptoms as a result of contact with very small amounts of liquid material or as a result of exposure to vapor.

Acute Eye Contact: Liquid, aerosols or vapors are irritating and can cause tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. However, damage is usually reversible. See Section VI for treatment.

Chronic Eye Contact: None Found.

Acute Ingestion: Can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea. Ingestion is not considered a common occupational route of exposure.

Chronic Ingestion: None Found.

CARCINOGENICITY NTP: Not listed. IARC: Not listed. OSHA: Not regulated.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Asthma, other respiratory disorders (bronchitis, emphysema, bronchial hyperreactivity), akin allergies, eczema.

SECTION VI - EMERGENCY AND FIRST AID PROCEDURES

FIRST AID FOR EYES: Flush with copious amount of water, preferably, lukewarm water for at least 15 minutes, holding eyelids open all the time. Refer individual to physician or ophthalmologist for immediate follow-up.

FIRST AID FOR SKIN: Remove contaminated clothing. Wash affected skin thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures, get under safety shower after removing clothing, then get medical attention. For lesser exposures, seek medical attention if irritation develops or persists after the area is washed.

FIRST AID FOR INHALATION: Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Consult physician should this occur.

FIRST AID FOR INGESTION: DO NOT INDUCE VOMITING. Give 1 to 2 cups of milk or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Consult physician.

NOTE TO PHYSICIAN: Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic steroid preparation frequently. Workplace vapors have produced reversible corneal epithelial edema impairing vision. Skin: This compound is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. If burned, treat as thermal burn. Ingestion: Treat symptomatically. There is no specific antidote. Inducing vomiting is contradicted because of the irritating nature of this compound. Respiratory: This compound is a known pulmonary sensitizer. Treatment is essentially symptomatic. An individual having a skin or pulmonary sensitization reaction to this material should be removed from exposure to any isocyanate.

SECTION VII - EMPLOYEE PROTECTION RECOMMENDATIONS

EYE PROTECTION REQUIREMENTS: Liquid chemical goggles or full-face shield. Contact lenses should not be worn.

SKIN PROTECTION EQUIPMENT: Chemical resistant gloves (butyl rubber, nitrile rubber, polyvinyl alcohol). However, please note that PVA degrades in water. Cover as much of the exposed skin area as possible with appropriate clothing. If skin creams are used, keep the area covered only by the cream to a minimum.

RESPIRATORY/VENTILATION REQUIREMENT: Local exhaust ventilation should be used as required to maintain levels below the TLV whenever MDI is processed, heated or spray applied. Standard reference sources regarding industrial ventilation (ie., ACGIH Industrial Ventilation) should be consulted for guidance about adequate ventilation. An air-supplied respirator must be worn during spray applications, during long-term (over 1 hour) exposures, when the product is heated, in environments of high concentrations well above the TLV of 0.005 ppm, or where airborne isocyanate concentrations are unknown. For short-term (less than 1 hour) emergency situations at concentrations at or near the TLV, an air purifying respirator equipped with organic cartridges or canisters and dust filters can be used. However, due to the poor warning properties of MDI, proper fit and timely replacement of filter elements must be ensured. Observe OSHA regulations for respirator use (29 CFR 1910.134).

MONITORING: MDI exposure levels must be monitored by accepted monitoring techniques to ensure that the TLV is not exceeded. See Volume 1 (Chapter 17) and Volume 3 (Chapter 3) in Patty's Industrial Hygiene and Toxicology for sampling strategy.

SECTION VII - EMPLOYEE PROTECTION RECOMMENDATIONS, CONT.

MEDICAL SURVEILLANCE: Medical supervision of all employees who handle or come in contact with isocyanates is recommended. These should include preemployment and periodic medical examinations with respiratory function tests (FEV, FVC as a minimum). Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or sensitization should be excluded from working with MDI. Once a person is diagnosed as sensitized to MDI, nor further exposure can be permitted.

ADDITIONAL PROTECTIVE MEASURES: Safety showers and eyewash stations should be available. Educate and train employees in safe use of product. Follow all label instructions. For additional information, see Mobay's "Health and Safety Information for Diphenylmethane Diisocyanate (MDI) - Monomeric, Polymeric, and Modified" MDI 83N.

SECTION VIII - REACTIVITY DATA

STABILITY: Stable under normal conditions

HAZARDOUS POLYMERIZATION: None under normal conditions; may occur if in contact with moisture or other materials which react with isocyanates; may occur at temperatures over 400°F.

HAZARDOUS DECOMPOSITION PRODUCTS: by heat and fire: CO₂, CO, oxides of nitrogen, traces of HCN, MDI.

CONDITIONS TO AVOID: Contact with moisture and other materials which react with isocyanates. Temperatures above maximum storage temperature.

INCOMPATIBILITY (MATERIALS TO AVOID): Avoid contact with water, alcohols, amines and strong bases. Material can cause some corrosion to copper alloys and aluminum.

SECTION IX - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Evacuate non-essential personnel. Ventilate the area. Equip clean-up crew with appropriate protective equipment (i.e., clothing, respiratory, etc. See Safe Handling and Use Information Section VIII). Dike or impound spilled material and control further spillage if feasible. Notify appropriate authorities if necessary. Cover spill with sawdust, vermiculite, Fuller's earth or other absorbent material; pour liquid decontaminant over spillage -- allow to react at least 10 min., collect material in open containers -- add further amounts of decontamination solution. Remove containers to safe place -- cover loosely and allow to stand for 24 to 48 hours. Wash down area with liquid decontaminant and flush spill area with water. Decontamination solutions: Ammonium hydroxide (0-10%), detergent (2-5%) and balance water.

WASTE DISPOSAL METHOD: Waste may be incinerated or disposed of in compliance with Federal, State or local environmental control regulations. Empty containers must be handled with care due to product residue. DO NOT HEAT OR CUT EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH.

SECTION X - SPECIAL PRECAUTIONS & STORAGE DATA

STORAGE TEMPERATURE (Min/Max): 32°F (0°C) / 122°F (50°C)

AVERAGE SHELF LIFE: 6 months at 77°F (25°C)

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep material away from heat, sparks and open flames. Containers should be tightly closed to prevent contamination, foreign materials and moisture. Containers must be grounded when filling or emptying. Do not reseal if contamination is suspected. At maximum storage temperatures noted, material may slowly polymerize without hazard. Ideal storage temperature range is 50 - 81°F (10 - 27°C).

OTHER PRECAUTIONS: If container of material is exposed to high heat, container can pressurize and burst. If moisture enters container, pressure can build up due to reaction producing CO₂, which can cause sealed container to pressurize and burst. Do not reseal if contamination is suspected.

SECTION XI - SHIPPING DATA

D.O.T. Shipping Name: PAINT, 3, UN1263, PGII

D.O.T. Hazard Class: Flammable Liquid

EMERGENCY RESPONSE GUIDE: 27

D.O.T. Placards: Flammable

SECTION XII - REGULATORY INFORMATION

This product may contain the following toxic chemicals subject to the reporting requirements of Section 313 of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

<u>CAS #</u>	<u>CHEMICAL NAME</u>	<u>% by Weight</u>
1330-20-7	Xylene	See Section II
108-88-3	Toluene	See Section II
100-41-4	Ethyl Benzene	See Section II

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