

PRODUCT NAME: T-422 Reduced Hardener  
 PRODUCT CODE: T-422R

HMIS CODES: H F R P  
 3\*2 1 K

===== SECTION I - MANUFACTURER IDENTIFICATION =====

MANUFACTURER'S NAME: NCP Coatings, Inc.  
 ADDRESS : P.O. Box 307  
 225 Fort Street  
 Niles, MI 49120

EMERGENCY PHONE: 1-800-424-9300

REVISION DATE: 11/15/06

DATE PRINTED: 2/2/2010

INFORMATION PHONE: 1-269-683-3377

NAME OF PREPARER : NCP Technical Staff

===== SECTION II - HAZARDOUS INGREDIENTS/SARA III INFORMATION =====

REPORTABLE COMPONENTS	CAS NUMBER	VAPOR PRESSURE mm Hg @ TEMP	WEIGHT PERCENT
Hexamethylene Diisocyanate Homopolymer OSHA PEL: NE ACGIH TLV: NE	28182-81-2	<0.01 68F	65-70%
Parachlorobenzotrifluoride OSHA PEL NE ACGIH TLV NE	98-56-6	5.3 68F	25-30%
Butyl Acetate OSHA PEL 150 PPM TWA ACGIH TLV 150 PPM TWA	123-86-4	8.4 68F	1-5%
Light Aromatic Petroleum distillates OSHA PEL 100 PPM TWA ACGIH TLV 100 PPM TWA	64742-95-6	4 68F	1-5%
* 1,2,4 Trimethylbenzene OSHA PEL 25 PPM TWA ACGIH TLV 25 PPM TWA	95-63-6	NE NE	1.18

\* Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

Warning: Detectable amounts of a chemical known to the state of California to cause cancer and/or birth defects or other reproductive harm may be present in this product.

CARCINOGENICITY: NTP CARCINOGEN: No IARC MONOGRAPHS: No  
 OSHA REGULATED: No

All chemicals in this product are listed, or are exempt from listing on the TSCA inventory.

===== SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS =====

BOILING RANGE: 260F - 400F

SPECIFIC GRAVITY (H2O=1): 1.18

VAPOR DENSITY: Heavier than air.                      EVAPORATION RATE: SLOWER THAN ETHER  
COATING V.O.C.: .92  
SOLUBILITY IN WATER: Not applicable  
APPEARANCE AND ODOR: Liquid and odor of solvents.

===== SECTION IV - FIRE AND EXPLOSION HAZARD DATA =====

Flash Point : 135F (57C)                                      METHOD USED: SETAFLASH

FLAMMABLE LIMITS IN AIR BY VOLUME- LOWER: 0.9                      UPPER: 12.6

EXTINGUISHING MEDIA:  
Dry chemical, foam, or CO2.

**SPECIAL FIREFIGHTING PROCEDURES**

Wear self-contained breathing apparatus, with a full facepiece operated in the positive pressure mode, and full protective clothing. Water may be used to cool closed containers to prevent an increase in pressure and a possible autoignition or explosion of the container contents when exposed to extreme heat.

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

Keep containers tightly closed. Isolate from heat, sparks, electrical equipment, and open flame. Closed containers may explode when exposed to extreme heat. Application to hot surfaces requires special precautions.

===== SECTION V - REACTIVITY DATA =====

**STABILITY:**

This material has been found to be stable under reasonable conditions of storage and use.

**CONDITIONS TO AVOID**

High temperatures.

**INCOMPATIBILITY (MATERIALS TO AVOID)**

Avoid contact with water, alcohols, amines, strong bases, combustible material, metal compounds, and surface active materials.

**HAZARDOUS DECOMPOSITION OR BYPRODUCTS**

By high heat and fire: carbon dioxide, carbon monoxide, oxides of nitrogen, HCN, HDI and other undetermined aliphatic fragments.

**HAZARDOUS POLYMERIZATION:**

Will not occur.

===== SECTION VI - HEALTH HAZARD DATA =====

**INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE**

Prolonged or repeated exposure to high concentrations in a confined area may cause respiratory system irritation.

**SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE**

Eye contact: Severe irritation, tearing, redness and blurred vision.

**SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE**

May be absorbed through the skin. Prolonged or repeated contact can result in defatting and drying of the skin which may result in dermatitis. Prolonged or repeated contact may cause irritation.

**INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE**

Moderately toxic. May cause burns of mouth and throat, abdominal pain, nausea, vomiting, diarrhea, dizziness, weakness, thirst, collapse and possible coma. Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury.

**HEALTH HAZARDS (ACUTE AND CHRONIC)**

**ACUTE INHALATION**

Isocyanate 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 an asthma attack. Exposure well above the exposure limits may lead to bronchitis, bronchial spasm, and pulmonary edema. These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms (e.g. fever, chills) has also been reported. Solvent vapors may cause dryness of the throat and tightness of the chest. Other possible symptoms of overexposure include headache, nausea, narcosis, fatigue and loss of appetite.

**CHRONIC INHALATION**

As a result of previous repeated overexposure or a single large dose, certain individuals will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanates at levels well below applicable exposure limits. These symptoms, which include chest tightness, wheezing, cough, shortness of breath or asthmatic 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. Chronic overexposure to isocyanates has also been reported to cause lung damage, including decrease in lung function, which may be permanent. Sensitization may be either temporary or permanent. Chronic overexposure to organic solvents has been associated with various neurotoxic effects including

permanent brain and nervous system damage. Symptoms include loss of memory, loss of intellectual ability and loss of coordination.

**ACUTE SKIN CONTACT**

Isocyanates react with skin protein and moisture and can cause irritation. Symptoms of skin irritation are reddening, swelling, rash, scaling or blistering. Some persons may develop skin sensitization from skin contact. Cured material is difficult to remove. Repeated or prolonged skin contact with solvents can result in dry, defatted and cracked skin causing increased susceptibility to infection. In addition, skin contact may develop into dermatitis. Solvents can penetrate the skin and may cause systemic effects similar to those identified under acute inhalation symptoms.

**CHRONIC SKIN CONTACT**

Prolonged contact with isocyanates may cause reddening, swelling, rash, scaling or blistering. In those who have developed a skin sensitization, these symptoms can develop as a result of contact with very small amounts of liquid material or even as a result of vapor only exposure.

**ACUTE EYE CONTACT**

Liquid, aerosols and vapors of this product (isocyanate and solvents) are irritating and can cause tearing, reddening, and swelling accompanied by a stinging sensation and/or a feeling like that of fine dust in the eyes.

**ACUTE INGESTION**

Ingestion can result in irritation and possible corrosive action in the mouth, stomach, tissues and digestive tract. Vomiting may cause aspiration of the solvent resulting in chemical pneumonitis.

**CHRONIC INGESTION**

None reported. Expected to be similar to effects listed for acute ingestion

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE**

Anesthesia, respiratory tract irritation, dermatitis, nausea, and vomiting

**EMERGENCY AND FIRST AID PROCEDURES**

**INHALATION**

Move person to fresh air. If breathing is difficult administer oxygen or artificial respiration as needed. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic.

**EYE CONTACT**

Flush with clean, lukewarm water for at least 15 minutes, while lifting eyelids, to ensure that the chemical is being flushed from the eyes. Refer individual to physician or ophthalmologist for immediate follow up.

**SKIN CONTACT**

Remove contaminated clothing and shoes immediately. Wash affected areas thoroughly with soap and water. Wash contaminated clothing and clean shoes thoroughly before reuse. For severe exposures, get under a safety shower after removing clothing, then get medical attention. For lesser exposures, seek medical attention if irritation develops or persists.

**INGESTION**

DO NOT INDUCE VOMITING. Give 1 to 2 glasses of milk or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON. Consult physician.

**NOTES TO PHYSICIAN**

**INHALATION:** This product is a pulmonary sensitizer. Treatment is essentially symptomatic. An individual having a pulmonary sensitization reaction to this material must be removed from any further exposure to isocyanate.

**EYE CONTACT:** Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation frequently.

**SKIN CONTACT:** This product is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn.

**INGESTION:** Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the product

**===== SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE =====**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Evacuate nonessential personnel. Remove all sources of ignition. Ventilate area. Notify appropriate authorities if necessary. Cleanup personnel should wear appropriate personal protective equipment. (See Section VIII). Dike or impound spilled material and control further spillage if feasible. Do not allow material to leak into surface water supplies, sewers, or ground water. Cover the spill with sawdust, vermiculite, Fuller's earth or other absorbent material. Pour decontamination solution over the spill area and allow to react for at least 10 minutes. Collect material in open containers and add further amounts of decontamination solution. Remove container to a safe place, cover loosely and allow to stand for 24 to 48 hours. Dispose of material in accordance with all local, state and federal regulations.

**DECONTAMINATION SOLUTION**

Nonionic surfactant Tergitol TMN-10 (20%), water (80%) or concentrated ammonia (3-8%), detergent (2%) and water (90-95%).

**WASTE DISPOSAL METHOD**

Dispose material in accordance with all local, state, and federal regulations.

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

Keep away from heat, sparks, and open flame. Ground containers during storage and transfer operations. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Store in a cool, dry area. At maximum storage temperatures noted below, material may slowly polymerize without hazard. Ideal storage temperature range for ease of handling is 50-81F (10-27C). Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard.

**STORAGE INFORMATION**

Storage Temperature (MIN/MAX): -30F (-34C)/122F (50C)

If container is exposed to high heat, it can be pressurized and possibly rupture explosively. HDI reacts slowly with water to form CO2 gas. This gas can cause sealed containers to expand and possibly rupture explosively.

**OTHER PRECAUTIONS**

DERMAL LD50 .... Greater than 5,000 mg/kg (Rabbit)- based on results of tests conducted using specific HDI-homopolymer products.

SENSITIZATION ....Pulmonary and dermal sensitizer in animals.

Evidence exists that cross-sensitization between HDI and other isocyanates can, particularly hydrogenated MDI and TDI, can occur.

OTHER ACUTE EFFECTS: AMES TEST: negative for 100% solids material (solvent free)

===== SECTION VIII - CONTROL MEASURES =====

**RESPIRATORY PROTECTION**

Good industrial hygiene practice dictates that when isocyanate-based coatings are sprayed, brushed or otherwise used, some form of respiratory protection should be worn. During these exposures, the use of a supplied-air (either positive pressure or continuous flow-type) respirator is mandatory when ONE or MORE of the following conditions exists: (1) the airborne isocyanate concentrations are not known; or (2) the airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit; or (3) the airborne polyisocyanate (polymeric, oligomeric) concentrations exceed 5 mg/m3 averaged over 8 hours or 10 mg/m3 averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits); or (4) operations are performed in a confined space (see OSHA Confined Space Standard, 29 CFR 1910.146).

A properly fitted air-purifying (combination organic vapor and particulate) respirator, proven by tests to be effective in isocyanate-containing environments, and used in accordance with all recommendations made by the manufacturer, can be used when ALL of the following conditions are met: (1) the airborne isocyanate monomer concentrations are known to be below 0.05 ppm averaged over eight (8) hours (10 times 8 hour TWA exposure limit); and (2) the airborne polyisocyanate (polymeric, oligomeric) concentrations are known to be below 5 mg/m3 averaged over 8 hours or 10 mg/m3 averaged over 15 minutes (10 times the 8 hour TWA or the 15 minutes STEL exposure limits) and (3) a NIOSH certified End of Service Life Indicator or a change schedule based upon objective information or data is used to ensure that cartridges are replaced before the end of their service life. In addition, prefilters should be changed whenever breathing resistance increases due to particulate buildup.

**VENTILATION**

Sufficient ventilation in volume and pattern should be provided to keep the air concentration below current applicable OSHA PEL's or ACGIH TLV's. Remove

decomposition products formed during welding or flame cutting of surfaces coated with this product. For baking finishes, vent vapors emitted during the curing process.

**PROTECTIVE GLOVES**

Permeation resistant gloves (butyl rubber, nitrile rubber) should be used. Based on laboratory assessment tests it is recommended that latex gloves not be worn when working with isocyanates.

**EYE PROTECTION**

Use chemical goggles, safety glasses, or a face shield.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT**

Cover as much of the exposed skin area as possible with appropriate clothing (long sleeve shirts, etc). If skin creams are used, keep the area protected only by the cream to a minimum.

**WORK/HYGIENIC PRACTICES**

Wash hands before eating, smoking, or using restroom.

**===== SECTION IX - DISCLAIMER =====**

The foregoing data has been compiled from sources which the company, in good faith, believes to be dependable and is accurate and reliable to the best of our knowledge and belief. However, the company cannot make any warranty or representation respecting the accuracy or completeness of the data and assumes no responsibility for any liability or damages relating thereto or for advising you regarding the protection of your employees, customers, or others. User should consult OSHA and other applicable safety laws and regulations before use.