Material Safety Data Sheet

SECTION 1- Chemical Product and Company Identification

PRODUCT NAME: TPU-188 2 K ACRYLIC URE CATALYST
IDENTIFICATION NUMBER: TPU-188 Part B **DATE PRINTED** 3/1/2007
PRODUCT USE/CLASS:

SUPPLIER:
Marine Industrial Paint Co., Inc.
4590 60th Ave North.
St. Petersburg, Fl. 33714

MANUFACURER:
Marine Industrial Paint Co., Inc.
4590 60th Ave North.
St. Petersburg, Fl. 33714

EMERGENCY TELEPPHONE:
727-527-3382 8 A.M. - 5 P.M.

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PREPARER : Steven C Halliday PHONE: 727-527-3382 PREPARE DATE: 3/1/2007

SECTION 2 – Composition and Information on Ingredients

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT%
01	POLYMERIC HEXAMETHYLENE DISOCYANATE	28182-81-2	75.0%
02	HEXAMETHYLENE DIISOCYANATE	822-06-0	5.0%
03	Xylene (Mixed Isomers)	1330-20-7	15.0%
04	Toluene	108-88-3	0.1%
05	Butyl Acetate Normal 98%	123-86-4	15.0%
06	Ethyl Benzene	100-41-4	5.0%
07	Benzene	71-43-2	0.1%

EXPOSURE LIMITS

	ACGIH		OSHA		COMPANY	
ITEM	TLV-TWA	TLV-STEL	PEL-TWA	PEL-CEILING	TLV-TWA	SKIN
01	N.E.	N.E.			0.5 mg/M3	YES
02	.005 ppm	N.E.			0.2 ppm	YES
03	100 ppm	150 ppm	100 ppm		100 ppm	YES
04	50 ppm Skin	50 ppm Skin	100 ppm		50 ppm Skin	YES
05	150 ppm	200 ppm	150 ppm			YES
06	100 ppm	125 ppm	100 ppm		100 ppm	YES
07	N.E.	N.E.	1 ppm		N.E.	YES

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

SECTION 3- Hazards Identification

*** EMERGENCY OVERVIEW *:** Aspiration hazard if swallowed. Can enter lungs and cause damage. Causes severe skin and eye irritation. May cause allergic respiratory reaction. Avoid contact with skin and clothing. Wash thoroughly after handling. Flammable liquid and vapor.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: This material may cause eye irritation. Direct contact with the liquid or exposure to vapors or mists may cause stinging, tearing and redness. Chronic eye contact may result in corneal reaction. Prolonged vapor contact may cause conjunctivitis.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: May cause skin sensitization, an allergic reaction, which becomes evident on re-exposure to this material.

EFFECTS OF OVEREXPOSURE – INHALATION: HDI Vapors or mists at concentrations above the TLV can irritate the mucous membranes in the respiratory tract causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function. Persons with a pre-existing , non specific bronchial hyperactivity can respond to concentrations below the TLV with symptoms as well as an asthma attack. Exposure above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema. These effects are usually reversible.

EFFECTS OF OVEREXPOSURE – INGESTION: Ingestion of excessive amounts may cause irritation to the digestive tract and signs of nervous system depression. ASPIRATION HAZARD! This material can enter the lungs during swallowing or vomiting causing lung and inflammation and damage.

EFFECTS OF OVEREXPOSURE – CHRONIC HAZARDS: Reports have associated repeated and prolonged occupational over-exposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling this product may be harmful or fatal. Contains Xylene. Xylene causes harm to the fetus in lab animal studies. The relevance of these findings to humans is uncertain. Xylene is not expected to cause cancer in humans since it has not been known to cause it in laboratory animals. Xylene is not listed as a carcinogen by the International Agency for Research on Cancer, The National Toxicology Program, or the Occupational Safety and Health Administration. Ethyl benzene is a component of xylene and has been shown to cause cancer in laboratory animals. The relevance of this finding to humans is uncertain. IARC (International Agency for Research on Cancer) has classified ethyl benzene as a possible human carcinogen. Light aromatic solvent naphtha causes harm to the human fetus in animal lab studies. The relevance of these findings to humans is uncertain. Contains methyl ethyl ketone. MEK has been shown to cause harm to the fetus in animal lab studies. The relevance of these findings to humans is uncertain. Overexposure to this material in lab animal studies has shown mild, reversible liver and kidney effects. Contains Toluene. Persons with pre-existing heart disorders may be more susceptible to irregular heartbeats if exposed to high concentrations of this material. Intentional misuse by deliberate inhalation has been show to cause liver, kidney and brain damage. Exposure to high concentrations can cause irreversible changes to the genetic material (DNA) of a cell. Pre- existing liver and kidney disorders may be aggravated by exposure to this material. Contains polyisocyanates. As a result of previous repeated exposures or a single larger dose, certain individuals (Continued on page 3)

SECTION 3- Hazards Identification contd.

may develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels below the TLV. Symptoms include chest tightness, wheezing, cough, shortness of breath or asthma attack that can be immediate or delayed for several hours after exposure. Chronic overexposure to isocyanantes has been reported to cause lung damage, including decrease in lung function, which may be permanent.

PRIMARY ROUTE(S) OF ENTRY: SKIN CONTACT INHALATION EYE CONTACT SKIN ABSORBTION INGESTION

SECTION 4 – First Aid Measures

FIRST AID - EYE CONTACT: If irritation and or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist seek medical attention. For direct contact hold eyelids apart and flush with clean water for at least 15 minutes.

FIRST AID – SKIN CONTACT: Remove contaminated clothing and shoes and flush affected area with large amounts of water. If skin is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged cleanse thoroughly with mild soap and water. If redness or irritation develops seek medical attention. Wash with soap and water. Get medical attention if irritation or persists.

FIRST AID – INHALATION : If respiratory symptoms or other symptoms of exposure develop, move victim away from the source of exposure and into fresh air. If symptoms persist, seek immediate medical attention. If victim is not breathing, immediately start artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

FIRST AID – INGESTION: This material is a potential aspiration hazard. DO NOT INDUCE VOMITTING. If swallowed seek emergency medical attention. If victim is drowsy or unconscious, place them on their left side with head down. If possible, do not leave the victim unattended.

SECTION 5 – Fire Fighting Measures

FLASH POINT: 80 F **(TAGLIABUE CLOSED CUP)**

LOWER EXPLOSIVE LIMIT: 1.0%
UPPER EXPLOSIVE LIMIT: 7.6%

AUTOIGNITION TEMPERATURE:

EXTINGUISHING MEDIA: FOAM / DRY CHEMICAL / CO2 / WATER FOG / ALCOHOL FOAM (Continued on page 4)

SECTION 5 – Fire Fighting Measures contd.

UNUSUAL FIRE AND EXPLOSIVE HAZARDS: Vapors may form explosive mixture with air. Vapors can travel back to a source of ignition and flash back. Flammable liquid. Can form explosive mixtures at temperatures at or above the flashpoint. "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT , WELD, BRAZE, SOLDER,DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, properly bunged and returned to a drum reconditioner, or properly disposed of.

SPECIAL FIREFIGHTING PROCEDURES: Wear appropriate protective equipment including respiratory protection as conditions warrant. Stop spill/release if it can be done without risk. Water spray may be useful in minimizing or dispersing vapors and cooling equipment exposed to heat and flames. Avoid spreading burning liquid with water used for cooling purposes.

SECTION 6 – Accidental Release Measures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Absorb spill with an inert absorbent material, then place in a chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls/Personal Protection Section)

SECTION 7 – Handling and Storage

HANDLING: Wash thoroughly after handling.

STORAGE: Use and store this material in a cool, dry, well ventilated area away from heat and all sources of ignition. Keep containers closed when not in use. Store only in approved containers. Protect containers against physical damage.

SECTION 8 – Exposure Controls / Personal Protection

ENGINEERING CONTROLS: Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. Use explosion proof ventilation equipment. Facilities storing or utilizing this product should be equipped with an eyewash facility and a safety shower. (Continued on page 5)

SECTION 8 – Exposure Controls / Personal Protection contd.

RESPIRATORY PROTECTION: A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying systems is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known or any other circumstances where air purifying respirators may not provide adequate protection. A respirator that is recommended or approved for use in isocyanate-containing environments (air purifying or fresh air supplied) may be necessary for spray applications or other situations such as high temperature use which may produce inhalation exposures. A supplied air respirator (either positive pressure or continuous flow type) is recommended. Before an air-purifying respirator can be used, air monitoring must be performed to measure airborne concentrations of HDI monomer and HDI polyisocyanate. Observe OSHA regulations for respirator use (29 CFR 1910.134)

SPRAY APPLICATION: Good industrial hygiene practice dictates that when isocyanate-based coatings are spray applied, some form of respiratory protection should be worn. During the spray application of this coating the use of a supplied air (either continuous flow or positive pressure type)respirator is mandatory when ONE OR MORE of the following conditions exist: the airborne isocyanate concentrations are not known, the airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over eight (8) hours (ten times the 8 hour TWA exposure limit); the airborne polyisocyanate (polymeric,oligomeric) concentrations exceed 5mg/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 operations are performed in a confined space. (See OSHA Confined Space Standard, 29CFR 1910.146). A properly fitted air-purifying (combination organic vapor and particulate) respirator, proven by test to be effective in isocyanate-coating spray paint environments and use in accordance with all recommendations made by the manufacturer, can be used when ALL of the following conditions are met: - The airborne isocyanate monomer concentrations are know to be below 0.05 ppm averaged over 8 hours and 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 and a NIOSH-Certified End of Service Indicator or a change schedule based on objective information or data is used to ensure cartridges are replaced at the end of their service life. In addition, pre-filters should be changed whenever breathing resistance increases due to particulate build-up.

NON-SPRAY OPERATIONS: During non spray operations such as brush or roll application, especially at elevated temperatures, it is possible to be exposed to airborne isocyanate vapors. Therefore, when the coatings system will be applied in a non-spray manner supplied air (either positive pressure or continuous-flow type) respirator is mandatory when ONE OR MORE of the following conditions exist: the airborne isocyanate concentrations are not known, the airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over (8) hours (or 10 times the 8-hour TWA limit); 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 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 may be used if all of the conditions listed under spray application are met. (Continued on page 6)

SECTION 8 – Exposure Controls / Personal Protection contd.

SKIN PROTECTION: Where contact is likely, wear chemical resistant gloves, a chemical suit, rubber boots, and chemical safety goggles plus a face shield.

EYE PROTECTION: Wear safety glasses with side shields (or goggles) and a face shield.

OTHER PROTECTIVE EQUIPMENT: No Information.

HYGENIC PRACTICES: Wash hands before eating. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material.

SECTION 9 – Physical and Chemical Properties

BOILLING RANGE: 175-286 F
ODOR: Xylene/B Acetate
APPEARANCE: Clear liquid
SOLUBILITY IN H20: No
FREEZE POINT: N.A.
VAPOR PRESSURE: 8 mm Hg
PHYSICAL STATE: Liquid

VAPOR DENSITY: Is heavier than air
ODOR THRESHOLD:
EVAPORATION RATE: Is slower than Ether

SPECIFIC GRAVITY: 0.8454
Ph @ 0.0 %:
VISCOSITY:

COEFFICIENT OF WATER / OIL DISTRIBUTION:
(See section 16 for abbreviation legend)

SECTION 10 – Stability and Reactivity

CONDITIONS TO AVOID: Avoid all possible sources of ignition.

INCOMPATIBILITY: This product is incompatible with strong acids or bases, oxidizing agents and selected amines.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion may yield carbon dioxide and/or carbon monoxide. Do not breathe smoke or fumes. Wear appropriate protective equipment.

HARZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

SECTION 11- Toxicological Properties

NO PRODUCT OR COMPONENT TOXOCOLOGICAL INFORMATION IS AVAILABLE.

SECTION 12 – Ecological Information

NO ECOLOGICAL INFORMATION

SECTION 13 – Disposal Considerations

DISPOSAL METHOD: Dispose of product in accordance with local, county, state and federal regulations.

SECTION 14 – Transportation Information

DOT PROPER SHIPPING NAME: Paint

DOT TECHNICAL NAME:

DOT HAZARD CLASS: 3 HAZARD SUBCLASS:

DOT UN/NA NUMBER: UN 1263 **PACKING GROUP**: III **RESP. GUIDE PAGE:**

SECTION 15 – Regulatory Information

US FEDERAL REGULATIONS - AS FOLLOWS:

OSHA - Hazardous by definition of Hazard communication Standard (29 CFR 1910.1200)

CERCLA - SARA HAZARD CATEGORY:
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 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD CHRONIC HEALTH HAZARD FIRE HAZARD

SARA SECTION 313: 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: (Continued on page 8)

SECTION 15 – Regulatory Information contd.

CHEMICAL NAME	CAS NUMBER	WT/WT % IS LESS THAN
Xylene (Mixed Isomers)	1330-20-7	15.0 %
Toluene	108-88-3	0.1%
Butyl Acetate Normal 98%	123-86-4	15.0%
Ethyl Benzene	10-41-4	5.0%
Benzene	71-43-2	0.1%

U.S. STATE REGULATIONS – AS FOLLOWS:

CALIFORNIA PROPOSITION 65:
WARNING: The chemical (s) noted below and contained in this product , are known to the state of California to cause cancer, birth defects or other reproductive harm :

CHEMICAL NAME	CAS NUMBER
Toluene	108-88-3
Benzene	71-43-2

INTERNATIONAL REGULATIONS – AS FOLLOWS:

CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for use of the 16 headings.

CANADIAN WHIM CLASS: NO INFORMATION AVAILABLE

SECTION 16 – Other Information

HMIS RATINGS – HEALTH: 2 FLAMMABILITY: 3 REACTIVITY: 1

PREVIOUS MSDS REVISION DATE: 03/07/07

VOLITILE ORGANIC COMPOUNDS (VOCS): 1.76 LBS/GAL , 211 GRAMS/LTR

LEGEND:

N.A. – Not Applicable N.E. – Not Established N.D. – Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.