



Material Safety Data Sheet

Issuing Date 16-May-2011

Revision Date

Revision Number 0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name HPS-5i CATALYST
Product Code(s) 999598
UN-Number UN3082
Recommended Use Resin hardening agent
Product Technology Epoxy

Supplier Address

Ennis Paint Inc.
5910 North Central Expressway
Suite 1050
Dallas TX 75206
T: 800.331.8118
800.331.8118 (For Technical Inquiries)

Chemical Emergency Phone Number Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview

Harmful if inhaled
May cause eye, skin, respiratory irritation with repeated or prolonged contact
May cause sensitization by inhalation and skin contact
Aspiration hazard if swallowed - can enter lungs and cause damage

Appearance Amber

Physical State Liquid.

Odor Odorless

Potential Health Effects

Acute Toxicity

Eyes
Skin

May cause slight irritation. May cause redness and tearing.
May cause irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.

Inhalation

Harmful if inhaled. May cause irritation of respiratory tract. May cause sensitization of susceptible persons by inhalation of aerosol or dust.

Ingestion

Harmful: may cause lung damage if swallowed. Ingestion may cause irritation to mucous membranes.

Chronic Effects

Repeated contact may cause allergic reactions in very susceptible persons.

Aggravated Medical Conditions

Skin disorders. Allergies. Pre-existing eye disorders. Respiratory disorders. Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates.

Environmental Hazard

See Section 12 for additional Ecological Information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
Polyhexamethylene Diisocyanate	28182-81-2	60-100
Hexamethylene diisocyanate	822-06-0	1-5

4. FIRST AID MEASURES

General Advice	Call a doctor immediately if allergic signs, particularly in the respiratory tract, are observed
Eye Contact	Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. In the case of skin irritation or allergic reactions see a physician. Remove and wash contaminated clothing before re-use.
Inhalation	Move victim to fresh air. Apply artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. Call a physician immediately.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. Call a physician or Poison Control Center immediately.
Notes to Physician	Treat symptomatically.
Protection of First-aiders	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

5. FIRE-FIGHTING MEASURES

Flammable Properties	Combustible material: may burn but does not ignite readily.			
Flash Point	338°F / 170°C			
Flashpoint Method	EN 22719			
Suitable Extinguishing Media	Dry chemical, CO ₂ , water spray or regular foam.			
Hazardous Combustion Products	Isocyanates.			
Explosion Data				
Sensitivity to Mechanical Impact	None			
Sensitivity to Static Discharge	None			
Protective Equipment and Precautions for Firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.			
NFPA	Health Hazard 2	Flammability 1	Instability 0	Physical and Chemical Hazards -
HMIS	Health Hazard 2*	Flammability 1	Physical Hazard 1	Personal Protection -

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Use personal protective equipment. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.
Environmental Precautions	Prevent entry into waterways, sewers, basements or confined areas.
Methods for Containment	Dike far ahead of liquid spill for later disposal.
Methods for Cleaning Up	Take up with sand or other noncombustible absorbent material and place into containers for later disposal. Pump any free liquid into an appropriate closed container. Clean up spill area with a decontamination solution made up of 50% isopropyl alcohol, 45% water, and 5% concentrated ammonia solution. The solution should cover the area for at least one hour. Collect rinsate for disposal.

7. HANDLING AND STORAGE

Handling	Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists.
Storage	Keep container tightly closed in a dry and well-ventilated place. Keep at temperatures below 35° C.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hexamethylene diisocyanate 822-06-0	TWA: 0.005 ppm		Ceiling: 0.020 ppm 10 min Ceiling: 0.140 mg/m ³ 10 min TWA: 0.005 ppm TWA: 0.035 mg/m ³

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health.

Other Exposure Guidelines	Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).
Engineering Measures	Showers Eyewash stations Ventilation systems
Personal Protective Equipment	
Eye/Face Protection	Tightly fitting safety goggles.
Skin and Body Protection	Impervious butyl rubber gloves. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Respiratory Protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hygiene Measures	When using, do not eat, drink or smoke. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Provide regular cleaning of equipment, work area and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Amber.	Odor	Odorless.
Odor Threshold	No information available	Physical State	Liquid
pH	No information available.		
Flash Point	338°F / 170°C	Flashpoint Method	EN 22719
Autoignition Temperature	490°C	Decomposition Temperature	No information available.
Boiling Point/Boiling Range	No information available	Melting Point/Range	No information available
Flammability Limits in Air	No information available.	Explosion Limits	No information available.
Specific Gravity	1.13	Water Solubility	Insoluble in water.
Solubility	No information available.	Evaporation Rate	No information available
Vapor Pressure	<0.0001 hPa @ 20 °C	Vapor Density	No data available

10. STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions.
Incompatible Products	Amines. Water. Strong bases. Alcohols. Metals.
Conditions to Avoid	Excessive heat.
Hazardous Decomposition Products	Hydrogen cyanide. Isocyanates.
Hazardous Polymerization	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information

LD50 Oral:	5000 mg/kg (rat)
Eye Contact	Slightly irritating.
Skin Contact	Slightly irritating.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Polyhexamethylene Diisocyanate			= 18500 mg/m ³ (Rat) 1 h
Hexamethylene diisocyanate	= 710 mg/kg (Rat)	= 570 mg/kg (Rabbit)	= 0.29 mg/L (Rat) 1 h = 0.15 mg/L (Rat) 4 h

Chronic Toxicity

Chronic Toxicity	Repeated contact may cause allergic reactions in very susceptible persons.
Carcinogenicity	Contains no ingredient listed as a carcinogen.
Sensitization	Maximisation Test guinea pig: sensitizing Method: OECD Test Guideline 406 guinea pig: Not sensitizing by inhalation Method: Pulmonary sensitizaion study following intradermal and inhalative induction.
Target Organ Effects	None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity

LC50 Brachydanio rerio: \geq 100 mg/l 96 h
Method: OECD Test Guideline 203

EC0 daphnia magna: \geq 100 mg/l 48h
Method: OECD Test Guideline 202

EC0 scenedesmus subspicatus: $>$ 100 mg/l 72 h
Method: OECD Test Guideline 201

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Hexamethylene diisocyanate		LC50 96 h: = 26.1 mg/L static (Brachydanio rerio)	EC50 = 15.7 mg/L 30 min EC50 = 25.5 mg/L 15 min EC50 = 53.2 mg/L 5 min	

Persistence and Degradability Not readily biodegradable.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT

UN-Number	UN3082
Proper Shipping name	Environmentally hazardous substances, liquid, n.o.s.
Hazard Class	9
Subsidiary Class	None
Packing Group	III
Description	UN3082, Environmentally hazardous substances, liquid, n.o.s. (hexamethylene diisocyanate), 9, PG III
Emergency Response Guide Number	171

TDG

UN-Number	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.
Hazard Class	9
Packing Group	III
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., 9, PG III

MEX

UN-Number	UN3082
Proper Shipping Name	Environmentally hazardous substances, liquid, n.o.s.
Hazard Class	9
Packing Group	III
Description	UN3082 Environmentally hazardous substances, liquid, n.o.s. (hexamethylene diisocyanate), 9, III

ICAO

UN-Number	UN3082
Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.
Hazard Class	9
Packing Group	III
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (hexamethylene diisocyanate), 9, PG III

IATA

UN-Number	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.
Hazard Class	9
Packing Group	III
ERG Code	9L
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (hexamethylene diisocyanate), 9, PG III

IMDG/IMO

UN-Number	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.
Hazard Class	9
Packing Group	III
EmS No.	F-A, S-F
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (hexamethylene diisocyanate), 9, PG III

RID

UN-Number	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.

Hazard Class	9
Packing Group	III
Classification Code	M6
Description	UN3082 Environmentally hazardous substance, liquid, n.o.s.(hexamethylene diisocyanate),9,III

ADR

UN-Number	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.
Hazard Class	9
Packing Group	III
Classification Code	M6
Description	UN3082 Environmentally hazardous substance, liquid, n.o.s.(hexamethylene diisocyanate),9,III

ADN

UN-No	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.
Hazard Class	9
Packing Group	III
Classification Code	M6
Special Provisions	274, 335, 601
Description	UN3082 Environmentally hazardous substance, liquid, n.o.s.,9,III
Hazard Labels	9
Limited Quantity	LQ7

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Hexamethylene diisocyanate	822-06-0	1-5	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Hexamethylene diisocyanate	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Hexamethylene diisocyanate	X	X		X	

International Regulations

Canada

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.

WHMIS Hazard Class

D1A Very toxic materials

D2A Very toxic materials

D2B Toxic materials



16. OTHER INFORMATION

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Issuing Date 16-May-2011

Revision Date

Revision Note Initial Release.

General Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication and it does not purport to be all inclusive and shall be used only as a guide. We urge each customer or recipient of this MSDS to study it carefully to become aware of and understand the potential hazards associated with the product. The information given is designed only as a guide 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 material or in any process, unless specified in the text. Any use of the product not in conformance with this MSDS or in combination with any other product or process is the responsibility of the user. Customary precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed. Wash hands before breaks and at the end of work. Remove all soiled and contaminated clothing immediately.

End of Safety Data Sheet