Material Safety Data Sheet

ENNIS-FLINT
A Traffic Safety Solutions Company

Issuing Date 16-May-2011 **Revision Date** 16-Mar-2015 **Revision Number** 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name **HPS-2 CATALYST**

Product Code(s) **999299**

UN-Number UN3267

Recommended Use Resin hardening agent

Product Technology Epoxy

Supplier Address
Ennis-Flint
115 Todd Court
Thomasville, NC 27360
T: 800.331.8118
800.331.8118 (For Technical Inquiries)

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

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview

Corrosive
The product causes burns of eyes, skin and mucous membranes.
Harmful if swallowed
Harmful if absorbed through skin
May produce an allergic reaction
Contains a known or suspected reproductive toxin

Appearance Amber **Physical State** Liquid. **Odor** Slight, Phenolic

Potential Health Effects

Principle Routes of Exposure Eye contact. Skin contact. Inhalation.

Acute Toxicity

Eyes Corrosive to the eyes and may cause severe damage including blindness.

Skin Causes burns. Harmful if absorbed through skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Inhalation Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate.

Ingestion Harmful if swallowed. Ingestion causes burns of the upper digestive and respiratory tract.

Chronic Effects Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Contains material that may cause adverse reproductive effects.

Aggravated Medical Conditions Allergies. Skin disorders. Respiratory disorders. Pre-existing eye disorders. Reproductive system.

Environmental Hazard Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. See Section 12 for additional Ecological Information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

.

Chemical Name	CAS-No	Weight %
4-Nonylphenol, branched	84852-15-3	40-70
Diethylene triamine	111-40-0	15-40
Bisphenol A - Epichlorohydrin polymer	25068-38-6	10-30
Bisphenol A	80-05-7	5-10
1-(2-Aminoethyl) piperazine	140-31-8	1-5

4. FIRST AID MEASURES

General Advice Call 911 or emergency medical service. Remove and isolate contaminated clothing and shoes.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

Skin Contact Wash off immediately with soap and plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Call a physician immediately.

Inhalation Move victim to fresh air. Apply artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.

Ingestion Call a physician or Poison Control Center immediately. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person.

Notes to Physician Treat symptomatically.

Protection of First-aiders Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

5. FIRE-FIGHTING MEASURES

Flammable Properties Combustible material: may burn but does not ignite readily.

Flash Point 206.6°F / 97°C

Suitable Extinguishing Media Use: Water spray. Carbon dioxide (CO_2). Foam. Dry powder.

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. Additional chemical protective clothing may be required to protect from toxic decomposition products.

NFPA	**Health Hazard** 3	**Flammability** 1	**Instability** 0	**Physical and Chemical Hazards** -
HMIS	**Health Hazard** 3*	**Flammability** 1	**Physical Hazard** 0	**Personal Protection** -

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Stop leak if you can do it without risk. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Do not get in eyes, on skin, or on clothing.

Environmental Precautions

Should not be released into the environment. Prevent entry into waterways, sewers, basements or confined areas. Do not allow material to contaminate ground water system. Prevent product from entering drains.

Methods for Containment

Dike far ahead of liquid spill for later disposal.

Methods for Cleaning Up

Dam up. Soak up with inert absorbent material. Take up mechanically and collect in suitable container for disposal.

7. HANDLING AND STORAGE

Handling

Wear personal protective equipment. Ensure adequate ventilation. Do not breathe vapors or spray mist. Do not eat, drink or smoke when using this product. Do not get in eyes, on skin, or on clothing. Remove and wash contaminated clothing before re-use.

Storage

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep in properly labeled containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Diethylene triamine 111-40-0	TWA: 1 ppm S*	(vacated) TWA: 1 ppm (vacated) TWA: 4 mg/m^3	TWA: 1 ppm TWA: 4 mg/m^3

OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. 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. Face-shield.

Skin and Body Protection

Appropriate protective and chemical resistant gloves, clothing and splash protection, or fully encapsulating vapor protective clothing to prevent exposure. For materials of construction consult protective clothing manufacturer's specifications.

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 before re-use. Keep away from food, drink and animal feeding stuffs. Provide regular cleaning of equipment, work area and clothing. For environmental protection, remove and wash all contaminated protective equipment before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Amber.	**Odor**	Slight, Phenolic.
Odor Threshold	No information available	**Physical State**	Liquid
pH	No information available.		
Flash Point	206.6°F / 97°C	**Autoignition Temperature**	No information available.
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	1.012 - 1.036	**Solubility**	No information available.
Evaporation Rate	<1 (BuAc = 1)	**Vapor Pressure**	No data available
Vapor Density	>1 (air = 1)	**VOC Content (%)**	None

10. STABILITY AND REACTIVITY

Stability Stable under recommended storage conditions.

Incompatible Products Strong oxidizing agents. Acids. Aldehydes. Copper. Copper alloys.

Conditions to Avoid Extremes of temperature and direct sunlight.

Hazardous Decomposition Products Carbon oxides. Nitrogen oxides (NOx).

Hazardous Polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information Harmful in contact with skin and if swallowed.

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Diethylene triamine	= 819 mg/kg (Rat)	= 672 mg/kg (Rabbit)	
Bisphenol A	= 3200 mg/kg (Rat)	= 3000 mg/kg (Rabbit)	
1-(2-Aminoethyl) piperazine	= 2140 mg/kg (Rat)	= 880 mg/kg (Rabbit)	
4-Nonylphenol, branched	= 580 mg/kg (Rat)	= 2031 mg/kg (Rabbit)	
Bisphenol A - Epichlorohydrin polymer	11400 mg/kg (Rat)		

Chronic Toxicity

Chronic Toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Contains material that may cause adverse reproductive effects.

Carcinogenicity Contains no ingredient listed as a carcinogen.

Reproductive Toxicity Product is or contains a chemical which is a known or suspected reproductive hazard.

Target Organ Effects Respiratory system. Reproductive system.

12. ECOLOGICAL INFORMATION

This product contains a chemical which is listed as a marine pollutant according to DOT.

Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
4-Nonylphenol, branched	EC50 72 h: 0.16 - 0.72 mg/L static (Pseudokirchneriella subcapitata) EC50 96 h: 0.36 - 0.48 mg/L static (Pseudokirchneriella subcapitata) EC50 72 h: = 1.3 mg/L (Desmodesmus subspicatus)	LC50 96 h: = 0.135 mg/L flow-through (Pimephales promelas) LC50 96 h: = 0.1351 mg/L flow-through (Lepomis macrochirus)		EC50 48 h: = 0.14 mg/L (Daphnia magna)
Diethylene triamine	EC50 72 h: = 1164 mg/L (Pseudokirchneriella subcapitata) EC50 96 h: = 345.6 mg/L (Pseudokirchneriella subcapitata) EC50 96 h: = 592 mg/L (Desmodesmus subspicatus)	LC50 96 h: = 1014 mg/L semi-static (Poecilia reticulata) LC50 96 h: = 248 mg/L static (Poecilia reticulata) LC50 96 h: = 430 mg/L semi-static (Leuciscus idus)	EC50 = 2000 mg/L 1 h EC50 = 96 mg/L 17 h	EC50 48 h: = 16 mg/L (Daphnia magna) EC50 24 h: = 37 mg/L (Daphnia magna)
Bisphenol A	EC50 96 h: = 2.5 mg/L (Pseudokirchneriella subcapitata)	LC50 96 h: 3.6-5.4 mg/L flow-through (Pimephales promelas) LC50 96 h: 4.0-5.5 mg/L static (Pimephales promelas) LC50 96 h: = 4 mg/L (Oncorhynchus mykiss) LC50 96 h: = 9.9 mg/L static (Brachydanio rerio)		EC50 48 h: 9.2 - 11.4 mg/L Static (Daphnia magna) EC50 48 h: = 10.2 mg/L (Daphnia magna) EC50 48 h: = 3.9 mg/L (Daphnia magna)
1-(2-Aminoethyl) piperazine	EC50 72 h: = 495 mg/L (Pseudokirchneriella subcapitata)	LC50 96 h: 1950-2460 mg/L flow-through (Pimephales promelas) LC50 96 h: > 1000 mg/L semi-static (Poecilia reticulata) LC50 96 h: >= 100 mg/L semi-static (Oncorhynchus mykiss)	EC50 > 10000 mg/L 17 h	EC50 48 h: = 32 mg/L (Daphnia magna)

Chemical Name	Log Pow
Diethylene triamine	-1.3
Bisphenol A	2.2
1-(2-Aminoethyl) piperazine	-1.48

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

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Diethylene triamine	Toxic

14. TRANSPORT INFORMATION

DOT

UN-Number	UN3267
Proper shipping name	Corrosive liquid, basic, organic, n.o.s.
Hazard Class	8
Subsidiary Class	None
Packing Group	III
Marine Pollutant	This product contains a chemical which is listed as a marine pollutant according to DOT.
Description	UN3267,Corrosive liquid, basic, organic, n.o.s.(4-Nonylphenol, branched, Diethylene triamine),8,PG III,Marine Pollutant
Emergency Response Guide Number	153

TDG

UN-Number	UN3267
Proper Shipping Name	Corrosive liquid, basic, organic, n.o.s.
Hazard Class	8
Packing Group	III
Description	UN3267,CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.(4-Nonylphenol, branched, Diethylene triamine),8,PG III,Marine Pollutant

MEX

UN-Number	UN3267
Proper Shipping Name	Corrosive liquid, basic, organic, n.o.s.
Hazard Class	8
Packing Group	III
Description	UN3267 Corrosive liquid, basic, organic, n.o.s.(4-Nonylphenol, branched, Diethylene triamine),8,III

ICAO

UN-Number	UN3267
Proper shipping name	Corrosive liquid, basic, organic, n.o.s.
Hazard Class	8
Packing Group	III
Description	UN3267,Corrosive liquid, basic, organic, n.o.s.(4-Nonylphenol, branched, Diethylene triamine),8,PG III

IATA

UN-Number	UN3267
Proper Shipping Name	Corrosive liquid, basic, organic, n.o.s.
Hazard Class	8
Packing Group	III
ERG Code	8L
Description	UN3267,Corrosive liquid, basic, organic, n.o.s.(4-Nonylphenol, branched, Diethylene triamine),8,PG III

IMDG/IMO

UN-Number	UN3267
Proper Shipping Name	Corrosive liquid, basic, organic, n.o.s.
Hazard Class	8
Packing Group	III
EmS No.	F-A, S-B
Marine Pollutant	Product is a marine pollutant according to the criteria set by IMDG/IMO
Description	UN3267, Corrosive liquid, basic, organic, n.o.s.(4-Nonylphenol, branched, Diethylene triamine),8,PG III,Marine Pollutant

RID

UN-Number	UN3267
Proper Shipping Name	Corrosive liquid, basic, organic, n.o.s.
Hazard Class	8
Packing Group	III
Classification Code	C7
Description	UN3267 Corrosive liquid, basic, organic, n.o.s.(4-Nonylphenol, branched, Diethylene triamine),8,III

ADR

UN-Number	UN3267
Proper Shipping Name	Corrosive liquid, basic, organic, n.o.s.
Hazard Class	8
Packing Group	III
Classification Code	C7
Description	UN3267 Corrosive liquid, basic, organic, n.o.s.(4-Nonylphenol, branched, Diethylene triamine),8,III

ADN

UN-No	UN3267
Proper Shipping Name	Corrosive liquid, basic, organic, n.o.s.
Hazard Class	8
Packing Group	III
Classification Code	C7
Special Provisions	274
Description	UN3267 Corrosive liquid, basic, organic, n.o.s.(4-Nonylphenol, branched, Diethylene triamine),8,III
Hazard Labels	8
Limited Quantity	LQ22

15. REGULATORY INFORMATION

International Inventories

TSCA	All components are listed on the TSCA Inventory.
DSL	All components are listed either on the DSL or NDSL.

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - 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 %
Bisphenol A	80-05-7	5-10	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, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

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
Diethylene triamine	X	X	X		X
Bisphenol A	X	X	X		
1-(2-Aminoethyl) piperazine	X	X	X		

International Regulations

Chemical Name	Carcinogen Status	Exposure Limits
Diethylene triamine		Mexico: TWA 1 ppm Mexico: TWA 4.2 mg/m^3

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

E Corrosive material
D2A Very toxic materials
D2B Toxic materials

Canadian National Pollutant Release Inventory (NPRI)

Chemical Name	NPRI
Bisphenol A	X
4-Nonylphenol, branched	X

Legend

NPRI - National Pollutant Release Inventory

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	16-Mar-2015
Revision Note	Update Packing Group.

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