

SAFETY DATA SHEET

1. Identification

Product identifier EX-88- Hardener
Other means of identification
SDS number 01188
Product code 01188, 01188C, 01288, 01288C, 01287, 01183
Recommended use High Gloss Coating
Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name Environmental Technology, Inc.
Address 300 S. Bay Depot Road
Fields Landing
CA 95537
Telephone Telephone number 707-443-9323
E-mail mail@eti-usa.com
Contact person Technical Director
Emergency phone number CHEMTREC 800-424-9300

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Acute toxicity, oral Category 4
Skin corrosion/irritation Category 1
Serious eye damage/eye irritation Category 1
Sensitization, skin Category 1
Reproductive toxicity (fertility, the unborn child) Category 2
OSHA defined hazards Not classified.

Label elements



Signal word Danger
Hazard statement Harmful if swallowed. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Suspected of damaging fertility. Suspected of damaging the unborn child.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection.
Response If swallowed: Rinse mouth. Do not induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Specific treatment (see this label).
Storage Store locked up.
Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information

None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Polyoxypropylenediamine	Proprietary	20-60
Nonyl phenol	Proprietary	10-60
Alkyl Ether Amine	Proprietary	1-25
N-Aminoethylpiperazine	Proprietary	1-25

The identities of the materials in this product are withheld as a trade secret (29CFR1910.1210(i)) and are available to a physician or paramedical personnel in an emergency situation.

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation	If inhaled, remove to fresh air. For breathing difficulties, oxygen may be necessary. Get medical attention immediately.
Skin contact	Wash contaminated clothing before reuse. Rinse skin thoroughly with lukewarm water for at least 15 minutes. Call a physician or poison control center immediately.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Call a physician or Poison Control Center immediately.
Most important symptoms/effects, acute and delayed	Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract. May cause an allergic skin reaction. Dermatitis. Rash. Contact can cause corrosive burns, corneal damage, and blindness. Itching, redness, swelling, burning or blistering of skin.
Indication of immediate medical attention and special treatment needed	Exposure may aggravate pre-existing skin disorders. Treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Water. Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	Move container from fire area if it can be done without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Ensure adequate ventilation. Do not breathe mist or vapor. Avoid contact with skin and eyes. Keep unnecessary personnel away. Keep out of low areas. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Keep unnecessary personnel away. This product is miscible in water. Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Collect and dispose of spillage as indicated in section 13 of the SDS. Prevent entry into waterways, sewer, basements or confined areas. Never return spills to original containers for re-use.

Environmental precautions Avoid discharge into drains, water courses or onto the ground. Contact local authorities in case of spillage to drain/aquatic environment.

7. Handling and storage

Precautions for safe handling Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Do not get this material in your eyes, on your skin, or on your clothing. Avoid contact during pregnancy/while nursing. Provide adequate ventilation. Use personal protective equipment as required. Wash contaminated clothing before reuse. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Keep out of reach of children.

Conditions for safe storage, including any incompatibilities Keep out of the reach of children. Store locked up. Store in tightly closed original container in a dry, cool and well-ventilated place. Store away from incompatible materials, see Section 10 of the SDS.

8. Exposure controls/personal protection

Occupational exposure limits No exposure limits noted for ingredient(s).

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines No exposure standards allocated. Use personal protective equipment as required. Keep working clothes separately.

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Chemical resistant gloves.

Other Wear appropriate chemical resistant clothing. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material. Wear appropriate chemical resistant clothing to prevent any possibility of skin contact.

Respiratory protection If ventilation is insufficient, suitable respiratory protection must be provided.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace. Wash at the end of each work shift and before eating, smoking and using the toilet.

9. Physical and chemical properties

Appearance Viscous liquid.

Physical state Liquid.

Form Liquid. Pourable liquid.

Color Clear.

Odor Minimal. Not distinct. Ammonia-like.

Odor threshold Not available.

pH ≥ 11.7

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point $> 249.8\text{ }^{\circ}\text{F}$ ($> 121.0\text{ }^{\circ}\text{C}$) Closed Cup

Evaporation rate Not available.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	> 1 (Air=1)
Relative density	1.15
Solubility(ies)	
Solubility (water)	Slightly soluble (0.1-1%)
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport. Read and follow manufacturer's recommendations.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Reacts violently with strong acids. This product may react with oxidizing agents. Do not mix with other chemicals. Contact with incompatible materials. Avoid incompatible materials and intense heat.
Incompatible materials	Acids. Strong oxidizing agents. Oxidizing agents.
Hazardous decomposition products	None expected under normal conditions of use.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Under normal conditions of intended use, this material does not pose a risk to health. Harmful if swallowed. Causes digestive tract burns.
Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard. When heated, the vapors/fumes given off may cause respiratory tract irritation.
Skin contact	Causes severe skin burns. May cause an allergic skin reaction. May be harmful if absorbed through skin.
Eye contact	Causes eye burns. Causes serious eye damage.
Symptoms related to the physical, chemical and toxicological characteristics	Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract. May cause an allergic skin reaction. Dermatitis. Rash. Contact can cause corrosive burns, corneal damage, and blindness. Itching, redness, swelling, burning or blistering of skin.

Information on toxicological effects

Acute toxicity Harmful if swallowed. May be harmful if absorbed through skin. May cause digestive tract burns.

Components	Species	Test Results
N-Aminoethylpiperazine (CAS Proprietary)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	880 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Corrosive to skin and eyes.
Serious eye damage/eye irritation	Causes eye burns. Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	Due to partial or complete lack of data the classification is not possible.
Skin sensitization	May cause an allergic skin reaction.

Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	Possible reproductive hazard. Possible risk of harm to the unborn child. Possible risk of impaired fertility.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Due to the high viscosity the product is not an aspiration hazard.
Chronic effects	Prolonged exposure may cause chronic effects. Possible adverse reproductive and developmental effects.

12. Ecological information

Ecotoxicity Expected to be very toxic to aquatic organisms. May cause long-term adverse effects in the environment.

Components	Species	Test Results
N-Aminoethylpiperazine (CAS Proprietary)		
Aquatic		
Fish	LC50	Fathead minnow (<i>Pimephales promelas</i>) 1950 - 2460 mg/l, 96 hours
Nonyl phenol (CAS Proprietary)		
Aquatic		
Crustacea	EC50	Clam (<i>Mulinia lateralis</i>) 0.0379 mg/l, 48 hours
Fish	LC50	Winter flounder (<i>Pleuronectes americanus</i>) 0.017 mg/l, 96 hours
Polyoxypropylenediamine (CAS Proprietary)		
Aquatic		
<i>Chronic</i>		
Algae	NOEC	Algae 0.32 mg/l, 72 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available on bioaccumulation.
Mobility in soil	No data available.
Other adverse effects	None known.

13. Disposal considerations

Disposal instructions	Dispose in accordance with applicable federal, state, and local regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Do not allow this material to drain into sewers/water supplies.
Contaminated packaging	Dispose in accordance with applicable federal, state, and local regulations.

14. Transport information

DOT	
UN number	UN1760
UN proper shipping name	Corrosive liquids, n.o.s.
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Special precautions for user	Not available.
Special provisions	IB3, T7, TP1, TP28

Packaging exceptions 154
Packaging non bulk 203
Packaging bulk 241

IATA

UN number UN1760
UN proper shipping name Corrosive liquids, n.o.s.
Transport hazard class(es)
 Class 8
 Subsidiary risk -
 Label(s) 8
Packing group III
Packaging exceptions: 2.7.2.1
Environmental hazards Yes
Special precautions for user Not available.

IMDG

UN number UN1760
UN proper shipping name Corrosive liquids, n.o.s.
Transport hazard class(es)
 Class 8
 Subsidiary risk -
 Label(s) 8
Packing group III
Special provisions: 223, 274
Packaging exceptions: 3.4.1
Environmental hazards
 Marine pollutant Yes
EmS F-A, S-B
Special precautions for user Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

N-Aminoethylpiperazine (CAS Proprietary)

US. New Jersey Worker and Community Right-to-Know Act

N-Aminoethylpiperazine (CAS Proprietary)

US. Pennsylvania Worker and Community Right-to-Know Law

N-Aminoethylpiperazine (CAS Proprietary)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 06-May-2016
Revision date -
Version # 01

NFPA Ratings



References

ACGIH
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.