SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name or designation of the mixture	EX-74 Hardener
Registration number	-
Synonyms	None.
SDS number	23500H
Product code	12025, 23500, 23500C.
Issue date	21-March-2016
Version number	01
Revision date	-
Supersedes date	-

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	High Gloss Coating
Uses advised against	None known.

1.3. Details of the supplier of the safety data sheet

Manufacturer

Company name	Environmental Technology, Inc.
Address	300 S. Bay Depot Road Fields Landing CA 95537, USA.
Telephone number	001 707-443-9323
E-maill	eti@eti-usa.com
Contact person	Technical Director

Supplier

Company name	
Address	
Telephone number	

1.4. Emergency telepjhone number

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards

Acute toxicity, oral	Category 4	H302 - Harmful if swallowed.
Acute toxicity, dermal	Category 4	H312 - Harmful in contact with skin.
Skin corrosion/irritation	Category 1	H314 - Causes severe skin burns and eye damage.
Skin sensitisation	Category 1	H317 - May cause an allergic skin reaction.
Reproductive toxicity	Category 2	H361 - Suspected of damaging fertility or the unborn child.

Environmental hazards

Hazardous to the aquatic environment, acute aquatic hazard	Category 1	
Hazardous to the aquatic environment, long-term aquatic hazard	Category 1	H410 - Very toxic to aquatic life with long lasting effects.

Hazard summary Causes severe skin burns and eye damage. Harmful in contact with skin. Harmful if swallowed. May cause an allergic skin reaction. Possible reproductive hazard. Dangerous for the environment if discharged into watercourses.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: 3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine, Alkyl Ether Amine, Nonyl phenol, Polyoxypropylenediamine

Hazard pictograms

Signal word Danger

Hazard statements

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H361	Suspected of damaging fertility or the unborn child.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe mist or vapour.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P264	Wash thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.

Response

P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.

Storage

P405	Store locked up.

Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information None.

2.3. Other hazards None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Nonyl phenol	30 - 60	84852-15-3 284-325-5	-	601-053-00-8	
Classification:	Acute Tox. 4;H302, Skin Corr. 1B;H314, Repr. 2;H361d, Repr. 2;H361f, Aquatic Acute 1;H400, Aquatic Chronic 1;H410				
3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine	10 - 30	2855-13-2 220-666-8	-	612-067-00-9	
Classification:	Acute Tox. 4;H302, Acute Tox. 4;H312, Skin Corr. 1B;H314, Skin Sens. 1;H317, Aquatic Chronic 3;H412				

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Alkyl Ether Amine	10 - 30	39423-51-3 500-105-6	-	-	
Classification:	Acute Tox. 4;H302, Acute Tox. 4;H312, Eye Dam. 1;H318, Aquatic Chronic 2;H411				
Polyoxypropylenediamine	5 - 10	9046-10-0 -	-	-	
Classification:	Skin Corr. 1C;H314, Aquatic Chronic 2;H411				
Glyceryl poly(oxypropylene) triamine	1 - 5	64852-22-8 -	-	-	
Classification:	Skin Irrit. 2;H315, Eye Dam. 1;H318, Aquatic Chronic 3;H412				

Composition comments The full text for all H-statements is displayed in section 16. All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

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.

4.1. Description of 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 centre 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 centre 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 Centre immediately.

4.2. Most important symptoms and effects, both 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.

4.3. Indication of any immediate medical attention and special treatment needed Exposure may aggravate pre-existing skin disorders. Treat symptomatically. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards No unusual fire or explosion hazards noted.

5.1. Extinguishing media

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media Water. Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special fire fighting procedures Move containers from fire area if you can do so without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Ensure adequate ventilation. Do not breathe mist or vapour. 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.

For emergency responders Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

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

6.3. Methods and material 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.
6.4. Reference to other sections	For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling	Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapour. 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.
7.2. 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.
7.3. Specific end use(s)	High Gloss Coating

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Recommended monitoring procedures	Follow standard monitoring procedures.
Derived no-effect level (DNEL)	Not available.
Predicted no effect concentrations (PNECs)	Not available.
Exposure guidelines	No exposure standards allocated. Use personal protective equipment as required. Keep working clothes separately.

8.2. Exposure controls

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

General information	Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
Eye/face protection	Wear safety glasses with side shields (or goggles) and a face shield.
Skin protection	
- Hand protection	Chemical resistant gloves. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.
- Other	Wear appropriate chemical resistant clothing. 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.
Hygiene measures	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 or using the toilet.
Environmental exposure controls	Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Viscous liquid.
Physical state	Liquid.

Form	Liquid. Pourable liquid.
Colour	Clear. Slight yellow.
Odour	Slight ammonia odor.
Odour threshold	Not available.
pH	Not available
Melting point/freezing point	Not available.
Initial boiling point and boiling range	105.56 °C (222 °F)
Flash point	100.0 °C (212.0 °F) Pensky-Martens 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.
Vapour pressure	< 1 mm Hg at 68 F
Vapour density	Not available
Relative density	0.972 g/cm3
Solubility(ies)	Slightly soluble (0.1-1%)
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	1400 cP (25 °C (77 °F))
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.
9.2. Other information	
Density	8.00 lbs/gal
VOC (Weight %)	0 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Stable under normal temperature conditions and recommended use.
10.3. Possibility of hazardous reactions	Hazardous polymerisation does not occur.
10.4. Conditions to avoid	Avoid incompatible materials and intense heat. When product is mixed with Part A and left in a large mass a vigorous exothermic reaction may occur, and may result in charring of the reactants. Read and follow all instructions. Do not add nitrites, may form suspected cancer causing nitrosamines.
10.5. Incompatible materials	Acids. Strong oxidising agents.
10.6. Hazardous decomposition products	None expected under normal conditions of use.

SECTION 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure	
Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard. When heated, the vapours/fumes given off may cause respiratory tract irritation.
Skin contact	Causes severe skin burns. May cause an allergic skin reaction. Harmful in contact with skin.
Eye contact	Causes serious eye damage.
Ingestion	Under normal conditions of intended use, this material does not pose a risk to health. Harmful if swallowed. Causes digestive tract burns.
Symptoms	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.

11.1. Information on toxicological effects

Acute toxicity	Harmful if swallowed. May be harmful if absorbed through skin.
Skin corrosion/irritation	Causes skin burns.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory sensitisation	Based on available data, the classification criteria are not met.
Skin sensitisation	May cause an allergic skin reaction.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Possible reproductive hazard. Possible risk of harm to the unborn child. Possible risk of impaired fertility.
Specific target organ toxicity - single exposure	Based on available data, the classification criteria are not met.
Specific target organ toxicity - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Due to the high viscosity the product is not an aspiration hazard.
Mixture versus substance information	No information available.
Other information	Prolonged exposure may cause chronic effects. Possible adverse reproductive and developmental effects.

SECTION 12: Ecological information

12.1. Toxicity Very toxic to aquatic life with long lasting effects.

Components		Species	Test results
Polyoxypropylenediamine (CAS 9046-10-0)			
Aquatic			
Chronic			
Algae	NOEC	Algae	0.32 mg/l, 72 hours

12.2. Persistence and degradability No data is available on the degradability of this product.

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water (log Kow)

Nonyl phenol (CAS 84852-15-3)	5.71

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil No data available.

12.5. Results of PBT and vPvB assessment Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	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).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
EU waste code	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Special precautions	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. UN number UN1760

14.2. UN proper shipping name Corrosive liquids, n.o.s. (Nonyl Phenol Mixture)

14.3. Transport hazard class(es)

Class 8

Subsidiary risk -

Label(s) 8

Hazard No. (ADR) Not available.

Tunnel restriction code Not available.

14.4. Packing group III

14.5. Environmental hazards Yes.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

RID

14.1. UN number UN1760

14.2. UN proper shipping name Corrosive liquids, n.o.s. (Nonyl Phenol Mixture)

14.3. Transport hazard class(es)

Class 8

Subsidiary risk -

Label(s) 8

14.4. Packing group III

14.5. Environmental hazards Yes.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ADN

14.1. UN number UN1760

14.2. UN proper shipping name Corrosive liquids, n.o.s. (Nonyl Phenol Mixture)

14.3. Transport hazard class(es)

Class 8

Subsidiary risk -

Label(s) 8

14.4. Packing group III

14.5. Environmental hazards Yes.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

14.1. UN number UN1760

14.2. UN proper shipping name Corrosive liquids, n.o.s. (Nonyl Phenol Mixture)

14.3. Transport hazard class(es)

Class 8

Subsidiary risk -

Label(s) 8

14.4. Packing group III

14.5. Environmental hazards Yes.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

14.1. UN number UN1760

14.2. UN proper shipping name Corrosive liquids, n.o.s. (Nonyl Phenol Mixture)

14.3. Transport hazard class(es)

Class 8

Subsidiary risk -

Label(s) 8

14.4. Packing group III

14.5. Environmental hazards

Marine pollutant Yes.

EmS Not available.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Nonyl phenol (CAS 84852-15-3)

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Nonyl phenol (CAS 84852-15-3)

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Nonyl phenol (CAS 84852-15-3)

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Nonyl phenol (CAS 84852-15-3)

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended

Not listed.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding, as amended

Nonyl phenol (CAS 84852-15-3)

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Nonyl phenol (CAS 84852-15-3)

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended

3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine (CAS 2855-13-2)
Nonyl phenol (CAS 84852-15-3)

Directive 94/33/EC on the protection of young people at work, as amended

3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine (CAS 2855-13-2)
Nonyl phenol (CAS 84852-15-3)

Other regulations The product is classified and labelled in accordance with EC directives or respective national laws. Pregnant women should not work with the product, if there is the least risk of exposure. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations Follow national regulation for work with chemical agents. Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended.

15.2. Chemical safety assessment No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations Not available.

References Not available.

Information on evaluation method leading to the classification of mixture	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
Full text of any H-statements not written out in full under Sections 2 to 15	H302 Harmful if swallowed. H312 Harmful in contact with skin. H314 Causes severe skin burns and eye damage. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H361d Suspected of damaging the unborn child. H361f Suspected of damaging fertility. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. H411 Toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects.
Training information	Follow training instructions when handling this material.
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available.