MET-MOUNT 2 HARDENER
Safety Data Sheet

SECTION 1: Identification

1.1. Identification

Product form	:	Mixtures
CAS No	:	None - mix
Product code	:	M336H
Trade name	:	MET-MOUNT 2 HARDENER

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

Use of the substance/mixture	:	Epoxy Hardener

1.3. Details of the supplier of the safety data sheet

METLAB CORPORATION
4011 HYDE PARK BLVD. NIAGARA
FALLS NY 14305
800-828-6866

1.4. Emergency telephone number

Emergency number	:	ChemTel 813-248-0585

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin corrosion/irritation Category 1A	H314
Skin sensitization Category 1	H317
Reproductive toxicity Category 1B	H360
Hazardous to the aquatic environment - Acute Hazard Category 2	H401
Hazardous to the aquatic environment - Chronic Hazard Category 2	H411

Full text of H statements : see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :

GHS05 GHS07 GHS08 GHS09

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H360 - May damage fertility or the unborn child
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) :
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe mist/vapors/spray
P264 - Wash all contact areas thoroughly after handling
P272 - Contaminated work clothing must not be allowed out of the workplace
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection
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
P308+P313 - If exposed or concerned: Get medical advice/attention
P310 - Immediately call a POISON CENTER or doctor/physician
P321 - Specific treatment: See SDS Section 4.

P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P363 - Wash contaminated clothing before reuse
P391 - Collect spillage
P405 - Store locked up
P501 - Dispose of contents/container to special waste facility in accordance with regional/national regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Polyoxyalkyleneamine	(CAS No) 9046-10-0	< 50	Skin Corr. 1C, H314 Eye Dam. 1, H318 Aquatic Acute 3, H402 Aquatic Chronic 3, H412
Benzene-1,3-dimethaneamine	(CAS No) 1477-55-0	< 50	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 2 (Inhalation:vapor), H330 Skin Corr. 1A, H314 Eye Dam. 1, H318 Aquatic Acute 3, H402 Aquatic Chronic 3, H412
P-tert-butyl Phenol	(CAS No) 98-54-4	< 50	Skin Irrit. 2, H315 Eye Dam. 1, H318 Repr. 1B, H360 Aquatic Chronic 2, H411
Polyamidoamine	(CAS No) TRADE SECRET	< 50	Eye Dam. 1, H318 Skin Sens. 1, H317
Triphenyl phosphite	(CAS No) 101-02-0	< 50	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Triethanolamine substance with OEL values	(CAS No) 102-71-6	< 50	Not classified
1,2-ethanediamine, N,N'-bis(2-aminoethyl)-	(CAS No) 112-24-3	< 1	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317
Piperazine	(CAS No) 110-85-0	< 1	Skin Corr. 1B, H314 Eye Dam. 1, H318 Resp. Sens. 1B, H334 Skin Sens. 1, H317 Repr. 2, H361 Aquatic Acute 3, H402
1-piperazineethanamine	(CAS No) 140-31-8	< 1	Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 3, H412

***Chemical name, CAS number and/or exact concentration have been withheld as a trade secret**

Full text of hazard classes and H-statements : see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : IF exposed or concerned: Get medical advice/attention. Call a physician immediately. If medical advice is needed, have product container or label at hand.

First-aid measures after inhalation : If symptoms occur: go into open air and ventilate suspected area. Move the affected person away from the contaminated area and into the fresh air. Call a poison center/doctor/physician if you feel unwell.

First-aid measures after skin contact : Rinse skin with plenty of water or shower. Remove/Take off immediately all contaminated clothing. Get immediate medical advice/attention. Dispose of contaminated leather articles. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash clothing frequently. Keep work clothing separately.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Causes severe skin burns and eye damage. Symptoms may be delayed.

Symptoms/injuries after inhalation : Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Dry/sore throat. FOLLOWING SYMPTOMS MAY APPEAR LATER: Respiratory difficulties. Possible inflammation of the respiratory tract. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Symptoms/injuries after skin contact : Allergic skin rash. Caustic burns/corrosion of the skin. Destruction of tissue. ON CONTINUOUS EXPOSURE/CONTACT: Repeated exposure to this material can result in absorption through skin causing significant health hazard.

Symptoms/injuries after eye contact : Causes serious eye damage. Corrosion of the eye tissue. Lacrimation. Product vapor can cause lacrimation, conjunctivitis, and corneal edema when absorbed into the tissue of the eye. Corneal edema may give rise to a perception of "blue haze" or "fog" around lights. The effect is transient and has no known residual effects.

Symptoms/injuries after ingestion : burns of the upper digestive and respiratory tracts, abdominal pain, bloody vomiting, severe damage to the delicate tissue and danger of perforation. May cause stomach cramps and vomiting. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic symptoms : Animal studies suggest chronic overexposure effects may target the liver.

Triphenyl phosphite (101-02-0)	
Chronic symptoms	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Triethanolamine (102-71-6)	
Chronic symptoms	No effects known.

1-piperazineethanamine (140-31-8)	
Chronic symptoms	Repeated and/or prolonged exposure to vapors and/or aerosols may cause: Sore throat. Persistent cough. Asthma.

Piperazine (110-85-0)	
Chronic symptoms	Laboratory studies with *Piperazine* showed increased fetal deaths and fetal skeletal malformations in an oral 2-generation rat study.

1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)	
Chronic symptoms	*Triethylenetetramine (TETA) caused embryofetal toxicity and fetal malformations when fed to pregnant rats. Similar effects were not seen in studies in which this material was applied to the skin of rabbits, a more relevant route of industrial exposure. These effects are believed to be secondary to copper deficiency, resulting from the chelating activity of the amine. Repeated and prolonged overexposure may cause liver or kidney effects. . Animal studies suggest chronic overexposure effects may target the liver.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Irritating and/or toxic gases or fumes likely if involved in fire or exposed to extreme heat.

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Advice for firefighters

Firefighting instructions	:	Use water spray or fog for cooling exposed containers.
Protection during firefighting	:	Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
Other information	:	Burning produces stinking and toxic fumes.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	:	Only qualified personnel equipped with suitable protective equipment may intervene.

6.1.1. For non-emergency personnel

Protective equipment	:	Gloves. Protective goggles. Rubber apron, boots.
Emergency procedures	:	Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe mist/vapors/spray.

6.1.2. For emergency responders

Protective equipment	:	Impermeable boots and protective equipment. complete protective suit against chemicals.
Emergency procedures	:	Stop release. Prevent product from entering drains. Dike and contain spill. Absorb remaining liquid with sand or inert absorbent and remove to safe place. Decontaminate the spill surface area using a neutralization solution (see list); scrubbing the surface with a broom or brush helps the decontamination solution to penetrate into porous surfaces. Wait at least 15 minutes after first application of the neutralization solution. Cover the area with absorbent material and shovel this into an approved metal container.

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment	:	Dike and contain spill. Soak up small spill with inert solids. Sweep or shovel spills into appropriate container for disposal.
Methods for cleaning up	:	Notify authorities if product enters sewers or public waters.
Other information	:	Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	:	When heated, material emits irritating fumes.
Precautions for safe handling	:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Avoid contact with skin and eyes. Do not breathe mist/vapors/spray.
Hygiene measures	:	Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	:	Store locked up. Do not expose to temperatures exceeding 50 °C/ 122 °F. Store in a dry place.
Incompatible materials	:	concentrated strong acids. Mineral acids.
Maximum storage period	:	12 months
Storage temperature	:	<= 10 °C
Storage area	:	Keep locked up. Store at ambient temperature. Keep container closed when not in use.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Polyoxyalkyleneamine (9046-10-0)
Not applicable

Triphenyl phosphite (101-02-0)		
Not applicable		

Triethanolamine (102-71-6)		
ACGIH	ACGIH TWA (mg/m³)	5 mg/m³
Not applicable		

1-piperazineethanamine (140-31-8)
Not applicable

Piperazine (110-85-0)		
DNEL	DNEL	0.3 mg/m³ Workers, Short Term Inhalation, Local & Systemic effects
PNEC	PNEC	1.25 mg/l Fresh Water, Assessment Factors
Not applicable		

Polyamidoamine (TRADE SECRET)
Not applicable

1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)
Not applicable

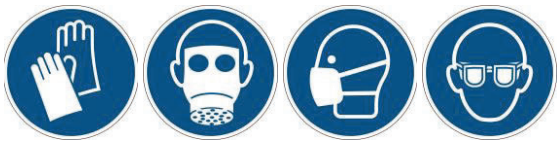
Benzene-1,3-dimethaneamine (1477-55-0)		
ACGIH	ACGIH Ceiling (mg/m³)	0.1 mg/m³ (m-Xylene alfa,alfa'-diamine; USA; Momentary value; TLV - Adopted Value)

P-tert-butyl Phenol (98-54-4)
Not applicable

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Personal protective equipment : Gloves. Insufficient ventilation: wear respiratory protection. On heating: wear respiratory equipment. Protective goggles.



Materials for protective clothing : butyl rubber. chloroprene rubber. neoprene. nitrile rubber.

Hand protection : Gloves.

Eye protection : Safety glasses.

Skin and body protection : Long sleeved protective clothing.

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment. Wear gas mask if conc. in air > exposure limit.

Thermal hazard protection : Use insulated gloves when handling this material hot.

Environmental exposure controls : Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Clear, colorless liquid.

Color : clear

Odor : Acrid ammoniacal

Odor threshold : No data available

pH : No data available

Melting point : Not applicable

Freezing point : < 0 °C

Boiling point : No data available

Flash point	:	> 90 °C
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	Not applicable.
Vapor pressure	:	< 1 mm Hg @ 20 deg C
Relative vapor density at 20 °C	:	No data available
Relative density	:	No data available
Specific gravity / density	:	1 g/cm³
Solubility	:	completely soluble.
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	150 cP
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

N-Nitrosamines, many of which are known to be potent carcinogens, may be formed when the product comes in contact with nitrous acid, nitrites or atmospheres with high nitrous oxide concentrations. . Reaction with amines in large amounts or under uncontrolled conditions may produce extreme heat with noxious smoke and fumes.

10.4. Conditions to avoid

Overheating.

10.5. Incompatible materials

Strong acids.

10.6. Hazardous decomposition products

Hazardous decomposition products may be released during prolonged heating like smoke, carbon monoxide and dioxide, nitrogen oxides (NOx). Ammonia.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Polyoxyalkyleneamine (9046-10-0)	
LD50 oral rat	2885 mg/kg
LD50 dermal rabbit	2979 mg/kg
ATE US (oral)	2885.000 mg/kg body weight
ATE US (dermal)	2979.000 mg/kg body weight

Triphenyl phosphite (101-02-0)	
LD50 oral rat	1600 mg/kg
LD50 dermal rabbit	2000 - 5000 mg/kg
ATE US (oral)	1600.000 mg/kg body weight
ATE US (dermal)	2000.000 mg/kg body weight

Triethanolamine (102-71-6)	
LD50 oral rat	6400 mg/kg

Triethanolamine (102-71-6)	
LD50 dermal rat	> 2000 µg/kg
ATE US (oral)	6400.000 mg/kg body weight

1-piperazineethanamine (140-31-8)	
LD50 oral rat	2097 mg/kg
LD50 dermal rabbit	866 mg/kg
ATE US (oral)	500.000 mg/kg body weight
ATE US (dermal)	866.000 mg/kg body weight

Piperazine (110-85-0)	
LD50 oral rat	2600 mg/kg OECD 401
LD50 dermal rabbit	8300 mg/kg OECD 402
ATE US (oral)	2600.000 mg/kg body weight
ATE US (dermal)	8300.000 mg/kg body weight

1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)	
LD50 oral rat	1716 mg/kg
LD50 dermal rabbit	1465 mg/kg
ATE US (oral)	1716.000 mg/kg body weight
ATE US (dermal)	1465.000 mg/kg body weight

Benzene-1,3-dimethaneamine (1477-55-0)	
LD50 oral rat	980 mg/kg
LD50 dermal rabbit	2000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	2.4 mg/l/4h (Rat)
ATE US (oral)	980.000 mg/kg body weight
ATE US (dermal)	2000.000 mg/kg body weight
ATE US (vapors)	1.340 mg/l/4h
ATE US (dust, mist)	2.400 mg/l/4h

P-tert-butyl Phenol (98-54-4)	
LD50 oral rat	> 2000 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value)

Skin corrosion/irritation : Causes severe skin burns and eye damage.

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Triethanolamine (102-71-6)	
NOAEL (chronic,oral,animal/male,2 years)	> 250 mg/kg body weight OECD 451 DERMAL; 103 weeks/5 days/week No effects seen
NOAEL (chronic,oral,animal/female,2 years)	> 250 mg/kg body weight OECD 451 DERMAL; 103 weeks/5 days/week No effects seen
IARC group	3 - Not classifiable

Reproductive toxicity : May damage fertility or the unborn child.

Specific target organ toxicity (single exposure) : Not classified

Polyoxyalkyleneamine (9046-10-0)	
NOAEL (dermal,rat/rabbit)	Rat

Specific target organ toxicity (repeated exposure) : Not classified

Polyoxyalkyleneamine (9046-10-0)	
LOAEL (oral,rat,90 days)	239 mg/kg bodyweight/day
LOAEL (dermal,rat/rabbit,90 days)	250 mg/kg bodyweight/day Rat
NOAEL (subacute,oral,animal/male,28 days)	239 mg/kg body weight

1-piperazineethanamine (140-31-8)	
NOAEL (oral,rat,90 days)	151 - 285 mg/kg bodyweight/day OECD 422

Aspiration hazard	:	Not classified
Symptoms/injuries after inhalation	:	Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Dry/sore throat. FOLLOWING SYMPTOMS MAY APPEAR LATER: Respiratory difficulties. Possible inflammation of the respiratory tract. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Symptoms/injuries after skin contact	:	Allergic skin rash. Caustic burns/corrosion of the skin. Destruction of tissue. ON CONTINUOUS EXPOSURE/CONTACT: Repeated exposure to this material can result in absorption through skin causing significant health hazard.
Symptoms/injuries after eye contact	:	Causes serious eye damage. Corrosion of the eye tissue. Lacrimation. Product vapor can cause lacrimation, conjuctivitis, and corneal edema when absorbed into the tissue of the eye. Corneal edema may give rise to a perception of "blue haze" or "fog" around lights. The effect is transient and has no known residual effects.
Symptoms/injuries after ingestion	:	burns of the upper digestive and respiratory tracts, abdominal pain, bloody vomiting, severe damage to the delicate tissue and danger of perforation. May cause stomach cramps and vomiting. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Chronic symptoms	:	Animal studies suggest chronic overexposure effects may target the liver.

Triphenyl phosphite (101-02-0)	
Chronic symptoms	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Triethanolamine (102-71-6)	
Chronic symptoms	No effects known.

1-piperazineethanamine (140-31-8)	
Chronic symptoms	Repeated and/or prolonged exposure to vapors and/or aerosols may cause: Sore throat. Persistent cough. Asthma.

Piperazine (110-85-0)	
Chronic symptoms	Laboratory studies with *Piperazine* showed increased fetal deaths and fetal skeletal malformations in an oral 2-generation rat study.

1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)	
Chronic symptoms	*Triethylenetetramine (TETA) caused embryofetal toxicity and fetal malformations when fed to pregnant rats. Similar effects were not seen in studies in which this material was applied to the skin of rabbits, a more relevant route of industrial exposure. These effects are believed to be secondary to copper deficiency, resulting from the chelating activity of the amine. Repeated and prolonged overexposure may cause liever or kidney effects. . Animal studies suggest chronic overexposure effects may target the liver.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Toxic to aquatic life with long lasting effects. Toxic to aquatic life.

Polyoxyalkyleneamine (9046-10-0)	
LC50 fish 1	772 mg/l OECD 203 Fish, Acute Static 96 hr
EC50 Daphnia 1	418 mg/l ISO, Static
EC50 Daphnia 2	80 mg/l OEDC 202 Daphnia sp. Fresh Water
ErC50 (algae)	15 mg/l OECD 201 72H fresh water
NOEC chronic algae	0.32 mg/l Static, 72 hr

Triphenyl phosphite (101-02-0)	
LC50 fish 1	0.7 mg/l

Triethanolamine (102-71-6)	
LC50 fish 1	11800 mg/l 96 hr Flow-Through
EC50 Daphnia 1	610 mg/l Daphnia 48-Hr Static (ASTM)
EC50 other aquatic organisms 1	> 1000 mg/l Bacteria 180 min Static OECD 209 Activated Sludge
EC50 Daphnia 2	2040 mg/l

Triethanolamine (102-71-6)	
ErC50 (algae)	512 mg/l 72 Hr Static DIN DIN 38412
NOEC (chronic)	16 mg/l Daphnia 21 day Semi-Static

1-piperazineethanamine (140-31-8)	
LC50 fish 1	2190 mg/l 96 Hr Static
EC50 Daphnia 1	58 mg/l 48 Hr OECD 202
EC50 other aquatic organisms 2	511 mg/l iso 9509:2006 Bacteria 2 Hr Static
Threshold limit algae 2	> 1000 mg/l (EC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Selenastrum capricornutum; Fresh water)

1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)	
Threshold limit algae 1	>= 100 mg/l (ErC50; DIN 38412-9; 72 h; Scenedesmus subspicatus)

Benzene-1,3-dimethaneamine (1477-55-0)	
LC50 fish 1	87.6 mg/l
EC50 Daphnia 1	15.2 mg/l OECD 202
EC50 other aquatic organisms 1	32.1 mg/l Pseudokirchneriella subcapitata (algae) - 72 h OECD 201
Threshold limit algae 1	12 mg/l (EC50; 72 h)

P-tert-butyl Phenol (98-54-4)	
LC50 fish 1	≈ 5.14 mg/l Pimephales promelas (fathead minnow)
EC50 Daphnia 1	4.8 mg/l
ErC50 (algae)	11.2 mg/l Desmodesmus subspicatus

12.2. Persistence and degradability

Polyoxyalkyleneamine (9046-10-0)	
Persistence and degradability	Not readily biodegradable.

Triphenyl phosphite (101-02-0)	
Persistence and degradability	Hydrolysis in water.

Triethanolamine (102-71-6)	
Persistence and degradability	Readily biodegradable, according to appropriate OECD test.

1-piperazineethanamine (140-31-8)	
Persistence and degradability	not readily degradable in water.
Chemical oxygen demand (COD)	0.56 g O_2/g substance

1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)	
Persistence and degradability	Not readily biodegradable in water. No (test)data on mobility of the substance available. Photodegradation in the air.

Benzene-1,3-dimethaneamine (1477-55-0)	
Persistence and degradability	Not readily biodegradable in water.

12.3. Bioaccumulative potential

Polyoxyalkyleneamine (9046-10-0)	
Log Pow	1.34

Triphenyl phosphite (101-02-0)	
BCF fish 1	250 - 500 (BCF)
Log Pow	4.98 - 6.62 (Calculated)
Bioaccumulative potential	High potential for bioaccumulation (Log Kow > 5).

Triethanolamine (102-71-6)	
BCF fish 2	< 3.9 mg/l
Log Pow	-2.3

1-piperazineethanamine (140-31-8)	
BCF fish 1	0.3 - 6.3 OECD 305: Cyprinus carpio; 4-6 weeks Flow-through ; Fresh water;
Log Pow	-1.48
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)	
Bioaccumulative potential	Bioaccumulation: not applicable.

Benzene-1,3-dimethaneamine (1477-55-0)	
BCF fish 1	< 2.7 (BCF)
Log Pow	0.15
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

P-tert-butyl Phenol (98-54-4)	
Log Pow	3.29

12.4. Mobility in soil

Triphenyl phosphite (101-02-0)	
Ecology - soil	Toxic to flora.

1-piperazineethanamine (140-31-8)	
Log Koc	log Koc,4.57; Read-across; GLP

12.5. Other adverse effects

Effect on global warming : No known effects from this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Landfilling of free liquid not recommended. Fuels burning or incineration preferred for material disposed of in "as sold" condition if regulations permit.

Sewage disposal recommendations : Do not discharge into drains or the environment.

Waste disposal recommendations : Collect all waste in suitable and labeled containers and dispose according to local legislation. Dispose in a safe manner in accordance with local/national regulations. For small amounts, mix resin and hardener according to product directions and allow to harden. When cured, product is non-hazardous, and may be placed in industrial or municipal landfill if local regulations permit.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN2735 Polyamines, liquid, corrosive, n.o.s. (Aliphatic amine blend), 8, II

UN-No.(DOT) : UN2735

Proper Shipping Name (DOT) : Polyamines, liquid, corrosive, n.o.s.
Aliphatic amine blend

Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136

Packing group (DOT) : II - Medium Danger

Hazard labels (DOT) : 8 - Corrosive

Dangerous for the environment : Yes

Marine pollutant : Yes

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202

DOT Packaging Bulk (49 CFR 173.xxx) : 242

DOT Symbols : G - Identifies PSN requiring a technical name

Emergency Response Guide (ERG) Number : 153

Transport by sea

UN-No. (IMDG) : 2735
Proper Shipping Name (IMDG) : POLYAMINES, LIQUID, CORROSIVE, N.O.S.
Class (IMDG) : 8 - Corrosive substances
Packing group (IMDG) : II - substances presenting medium danger
Limited quantities (IMDG) : 1 L

Air transport

UN-No. (IATA) : 2735
Proper Shipping Name (IATA) : Polyamines, liquid, corrosive, n.o.s.
Class (IATA) : 8 - Corrosives
Packing group (IATA) : II - Medium Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Polyoxyalkyleneamine (9046-10-0)	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Inventory Update Reporting Rule, i.e, Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(C))

Triphenyl phosphite (101-02-0)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

1-piperazineethanamine (140-31-8)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

Piperazine (110-85-0)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

Polyamidoamine (TRADE SECRET)	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Inventory Update Reporting Rule, i.e, Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(C))
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)	
SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard Immediate (acute) health hazard

P-tert-butyl Phenol (98-54-4)	
SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard Immediate (acute) health hazard

15.2. International regulations

CANADA

No additional information available

Piperazine (110-85-0)	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

EU-Regulations

efi Polymers Epoxy Hardener 50126 (None - mix)	
RoHS Substance	No
SVHC	No

Polyoxyalkyleneamine (9046-10-0)	
SVHC	No
RoHS Substance	No

Triphenyl phosphite (101-02-0)	
SVHC	No
RoHS Substance	No

Triethanolamine (102-71-6)	
SVHC	No
RoHS Substance	No

1-piperazineethanamine (140-31-8)	
SVHC	No
RoHS Substance	No

Piperazine (110-85-0)	
SVHC	No
RoHS Substance	No

Polyamidoamine (TRADE SECRET)	
SVHC	No
RoHS Substance	No

1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)	
SVHC	No
RoHS Substance	No

Benzene-1,3-dimethaneamine (1477-55-0)	
SVHC	No
RoHS Substance	No

P-tert-butyl Phenol (98-54-4)	
SVHC	No
RoHS Substance	No

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

1,2-ethanediamine, N,N'-bis(2-aminoethyl)- (112-24-3)
U.S. - New Jersey - Right to Know Hazardous Substance List

Benzene-1,3-dimethaneamine (1477-55-0)
U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Other information : DISCLAIMER: To the best of our knowledge, the information contained in this MSDS is accurate or is obtained from sources believed to be accurate. However, no liability, expressed or implied, is assumed for the accuracy or completeness of the information contained herein. Buyer assumes liability in its use of the material.

Full text of H-phrases:

H302	Harmful if swallowed
H311	Toxic in contact with skin
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
H319	Causes serious eye irritation
H330	Fatal if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H360	May damage fertility or the unborn child.
H361	Suspected of damaging fertility or the unborn child
H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H402	Harmful 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

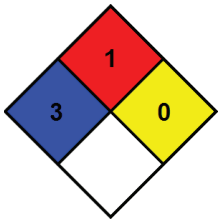
Abbreviations and acronyms:

	N.A. - Not Applicable N.E. - Not Established N.D. - Not Determined ACGIH = American Conference of Governmental Industrial Hygienists OSHA = US Occupational Health and Safety Administration TLV-TWA = Threshold Limit Value-Time Weighted Average (8 hrs) STEL = Short-Term Exposure Limit (15 min) C = Ceiling Value PEL = Permissible Exposure Limit OEL = Occupational Exposure Limit IDLH = Immediately Dangerous to Life and Health ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor PNEC = Predicted No Effect Concentration LOAEL = Lowest Observed Adverse Effect Level NOAEL = No Observed Adverse Effect Level NOAEC = No Observed Adverse Effect Concentration

NFPA health hazard : 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard : 1 - Must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

* - Chronic (long-term) health effects may result from repeated overexposure

Flammability : 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection : D

D - Face shield and eye protection, Gloves, Synthetic apron

METLAB CORPORATION:

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product