

Safety Data Sheet



Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name • Buehler Epothin 2 Hardener / SDS# 9130500

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

Relevant identified use(s) • Epoxy

1.3 Details of the supplier of the safety data sheet

Manufacturer • BUEHLER, a division of Illinois Tool Works Inc.
41 Waukegan Road
Lake Bluff, IL 60044
United States

Telephone (Technical) • 847-295-6500

1.4 Emergency telephone number

Manufacturer • 800-424-9300 - CHEMTREC

Section 2: Hazards Identification

EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]
According to: EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

2.1 Classification of the substance or mixture

- CLP**
- Acute Toxicity Oral 4 - H302
 - Acute Toxicity Dermal 3 - H311
 - Skin Corrosion 1B - H314
 - Skin Sensitization 1 - H317
 - Serious Eye Damage 1 - H318
 - Acute Toxicity Inhalation 3 - H331
 - Reproductive Toxicity 2 - H361f
 - Hazardous to the aquatic environment Chronic 2 - H411
- DSD/DPD**
- Toxic (T)
 - Corrosive (C)
 - Irritant (Xi)
 - Substances Toxic To Reproduction - Category 2
 - Dangerous to the Environment (N)
 - R23/24/25, R34, R41, R43, R51, R53, R62

2.2 Label Elements

CLP

DANGER

- Hazard statements** • H302 - Harmful if swallowed
 H311 - Toxic in contact with skin
 H314 - Causes severe skin burns and eye damage.
 H317 - May cause an allergic skin reaction
 H318 - Causes serious eye damage
 H331 - Toxic if inhaled
 H361f - Suspected of damaging fertility.
 H411 - 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 mists, vapours, and/or spray.
 P264 - Wash thoroughly after handling.
 P270 - Do not eat, drink or smoke when using this product.
 P271 - Use only outdoors or in a well-ventilated area.
 P272 - Contaminated work clothing should not be allowed out of the workplace.
 P273 - Avoid release to the environment.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 P281 - Use personal protective equipment as required.
- Response** • P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P311 - Call a POISON CENTER or doctor/physician.
 P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P310 - Immediately call a POISON CENTER or doctor/physician.
 P321 - Specific treatment, see supplemental first aid information.
 P363 - Wash contaminated clothing before reuse.
 P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P301+P312 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
 P330 - Rinse mouth.
 P331 - Do NOT induce vomiting.
 P308+P313 - IF exposed or concerned: Get medical advice/attention.
 P391 - Collect spillage.

- Storage/Disposal** • P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
 P405 - Store locked up.
 P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

- Supplemental information** • This product consists of an ingredient of unknown toxicity at <20% via the oral route, <30% via the dermal route, and 69.1-90% via inhalation.

DSD/DPD

- Risk phrases** • R23/24/25 - Toxic by inhalation, in contact with skin and if swallowed.
 R34 - Causes burns.
 R41 - Risk of serious damage to eyes.
 R43 - May cause sensitisation by skin contact.
 R51 - Toxic to aquatic organisms.
 R53 - May cause long-term adverse effects in the aquatic environment.
 R62 - Possible risk of impaired fertility.

- Safety phrases** • S24 - Avoid contact with skin.
 S26 - In case of contact with eyes, rinse immediately with plenty of water and seek

medical advice.

S27 - Take off immediately all contaminated clothing.

S36 - Wear suitable protective clothing.

S37 - Wear suitable gloves.

S39 - Wear eye/face protection.

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S57 - Use appropriate containment to avoid environmental contamination.

2.3 Other Hazards

CLP • According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

DSD/DPD • According to European Directive 1999/45/EC this material is considered dangerous.

UN GHS

According to: UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

2.1 Classification of the substance or mixture

UN GHS

- Acute Toxicity Oral 4
- Acute Toxicity Dermal 3
- Skin Corrosion 1B
- Skin Sensitization 1
- Serious Eye Damage 1
- Acute Toxicity Inhalation 3
- Respiratory Sensitization 1
- Hazardous to the aquatic environment Acute 2
- Hazardous to the aquatic environment Chronic 2

2.2 Label elements

UN GHS

DANGER



Hazard statements • Harmful if swallowed
 Toxic in contact with skin
 Causes severe skin burns and eye damage.
 May cause an allergic skin reaction
 Causes serious eye damage
 Toxic if inhaled
 May cause allergy or asthma symptoms or breathing difficulties if inhaled
 Toxic to aquatic life
 Toxic to aquatic life with long lasting effects

Precautionary statements

Prevention • Do not breathe mists, vapours, and/or spray.
 Wash thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Contaminated work clothing should not be allowed out of the workplace.
 Avoid release to the environment.
 Wear protective gloves/protective clothing/eye protection/face protection.
 In case of inadequate ventilation wear respiratory protection.

Response • IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 Immediately call a POISON CENTER or doctor/physician.
 Specific treatment, see supplemental first aid information.

Wash contaminated clothing before reuse.
If skin irritation or rash occurs: Get medical advice/attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
Rinse mouth.
Do NOT induce vomiting.
Collect spillage.

Storage/Disposal • Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Supplemental information • This product consists of an ingredient of unknown toxicity at <20% via the oral route, <30% via the dermal route, and 69.1-90% via inhalation.

2.3 Other hazards

UN GHS • According to the Globally Harmonized System for Classification and Labeling (GHS) this product is considered hazardous.

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012

- Acute Toxicity Oral 4
- Acute Toxicity Dermal 3
- Skin Corrosion 1B
- Skin Sensitization 1
- Serious Eye Damage 1
- Acute Toxicity Inhalation 3
- Respiratory Sensitization 1

2.2 Label elements

OSHA HCS 2012

DANGER



Hazard statements • Harmful if swallowed
Toxic in contact with skin
Causes severe skin burns and eye damage.
May cause an allergic skin reaction
Causes serious eye damage
Toxic if inhaled
May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statements

Prevention • Do not breathe mists, vapours, and/or spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
In case of inadequate ventilation wear respiratory protection.

Response • IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
If on skin: Wash with plenty of water .
Immediately call a POISON CENTER or doctor/physician.
Specific treatment, see supplemental first aid information.

Wash contaminated clothing before reuse.
 If skin irritation or rash occurs: Get medical advice/attention.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
 Rinse mouth.
 Do NOT induce vomiting.

Storage/Disposal • Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Supplemental information • This product consists of an ingredient of unknown toxicity at <20% via the oral route, <30% via the dermal route, and 69.1-90% via inhalation.

2.3 Other hazards

OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to: WHMIS

2.1 Classification of the substance or mixture

WHMIS

- Very Toxic - D1A
- Other Toxic Effects - D2A
- Other Toxic Effects - D2B
- Corrosive - E

2.2 Label elements

WHMIS



- Very Toxic - D1A
- Other Toxic Effects - D2A
- Other Toxic Effects - D2B
- Corrosive - E

2.3 Other hazards

WHMIS

- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance.

3.2 Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
				UN GHS: Acute Tox. 3 (skn, orl); Eye Irrit.	

Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	CAS: 9046-10-0	10% TO 30%	Ingestion/Oral-Rat LD50 • 242 mg/kg Skin-Rabbit LD50 • 360 mg/kg	2 EU DSD/DPD: T; R24/25; Xi; R36 EU CLP: Acute Tox. 3, H301 ; Acute Tox. 3, H311; Eye Irrit. 2, H319 OSHA HCS 2012: Acute Tox. 3 (skn, orl); Eye Irrit. 2	NDA
Phenol, p-(tert-butyl)-	CAS: 98-54-4 EU Index: 604-090-00-8 EINECS: 202-679-0	10% TO 30%	Ingestion/Oral-Rat LD50 • 3250 µL/kg Skin-Rabbit LD50 • 2520 µL/kg	UN GHS: Eye Dam. 1; Aquatic Acute 2; Aquatic Chronic 2 EU DSD/DPD: Repr. Cat. 3; R62; Xi; R38-41 EU CLP: Repr. 2, H361f; Skin Irrit. 2, H315; Eye Dam. 1, H318 OSHA HCS 2012: Eye Dam. 1	NDA
Methylamine, m-phenylenebis-	CAS: 1477-55-0 EINECS: 216-032-5	10% TO 30%	Ingestion/Oral-Rat LD50 • 930 mg/kg Inhalation-Rat LC50 • 700 ppm 1 Hour(s) Skin-Rabbit LD50 • 2 g/kg	UN GHS: Acute Tox. 4 (orl, skn); Acute Tox. 3 (inhl); Skin Corr. 1B; Eye Dam. 1; Aquatic Acute 3; Aquatic Chronic 3 EU DSD/DPD: Xi; R41; C; R34; R21/22; T; R23; R52-53 EU CLP: Skin Corr. 1B, H314; Eye Dam. 1, H318; Acute Tox. 4, H312; Acute Tox. 4, H302; Acute Tox. 3, H331; Aquatic Chronic 3, H412 OSHA HCS 2012: Acute Tox. 4 (orl, skn); Acute Tox. 3 (inhl); Skin Corr. 1B; Eye Dam. 1	NDA
Trimethylhexamethylene diamine	CAS: 3236-53-1 EINECS: 221-792-6	< 10%	NDA	UN GHS: Acute Tox. 4 (orl); Aquatic Chronic 3 EU DSD/DPD: Xn; R22 EU CLP: Acute Tox. 4, H302 OSHA HCS 2012: Acute Tox. 4 (orl)	NDA
Triethylenetetramine	CAS: 112-24-3 EC Number: 203-950-6 EU Index: 612-059-00-5	< 10%	Ingestion/Oral-Rat LD50 • 2500 mg/kg Skin-Rabbit LD50 • 805 mg/kg	UN GHS: Skin Sens. 1; Acute Tox. 4 (skn); Eye Dam. 1; Skin Corr. 1B; Resp. Sens. 1; Aquatic Acute 2; Aquatic Chronic 2; Acute Tox. 5 (orl) EU DSD/DPD: Annex VI, Table 3.2: Xn, R21; C, R34; R43; R52-53 EU CLP: Annex VI, Table 3.1: Acute Tox. 4, H312; Skin Corr. 1B, H314; Skin Sens. 1, H317; Aquatic Chronic 3, H412 OSHA HCS 2012: Skin Sens. 1; Acute Tox. 4 (skn); Eye Dam. 1; Skin Corr. 1B; Resp. Sens. 1	NDA
Triethanolamine	CAS: 102-71-6 EC Number: 203-049-8	< 10%	Ingestion/Oral-Rat LD50 • 4920 µL/kg Skin-Rabbit LD50 • >20 mL/kg	UN GHS: Skin Irrit. 3; Eye Irrit. 2; Skin Sens. 1B EU DSD/DPD: Xi; R36; R43 EU CLP: Eye Irrit. 2, H319; Skin Sens. 1B, H317 OSHA HCS 2012: Eye Irrit. 2; Skin Sens. 1B	NDA
Phosphorous acid, triphenyl ester	CAS: 101-02-0 EC Number: 202-908-4 EU Index: 015-105-00-7	< 10%	Ingestion/Oral-Rat LD50 • 444 mg/kg	UN GHS: Skin Irrit. 2; Eye Irrit. 2; Acute Tox. 4 (orl) EU DSD/DPD: Annex VI, Table 3.2: Xi, R36/38; N, R50, R53 EU CLP: Annex VI, Table 3.1: Eye Irrit. 2, H319; Skin Irrit. 2, H315; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 OSHA HCS 2012: Skin Irrit. 2; Eye Irrit. 2; Acute Tox. 4 (orl)	NDA
Hydroxy alkylated polyamine	CAS: 26950-63-0	< 10%	NDA	UN GHS: Not Classified EU DSD/DPD: Not Classified EU CLP: Not Classified	NDA

Diisononylcyclohexyl phthalate	CAS:474919-59-0	< 10%	NDA	<p>OSHA HCS 2012: Not Classified</p> <p>UN GHS: Not Classified EU DSD/DPD: Not Classified EU CLP: Not Classified OSHA HCS 2012: Not Classified</p>	NDA
Piperazine, 1-(2-aminoethyl)-	CAS:140-31-8 EC Number:205-411-0 EU Index:612-105-00-4	< 1%	Ingestion/Oral-Rat LD50 • 2140 µL/kg Skin-Rabbit LD50 • 880 µL/kg	<p>UN GHS: Skin Corr. 1C; Eye Dam. 1; Acute Tox. 4 (orl)</p> <p>EU DSD/DPD: Annex VI, Table 3.2: Xn, R21/22; C, R34; R43; R52, R53</p> <p>EU CLP: Annex VI, Table 3.1: Acute Tox. 4 *, H312; Acute Tox. 4 *, H302; Skin Corr. 1B, H314; Skin Sens. 1, H317; Aquatic Chronic 3, H412</p> <p>OSHA HCS 2012: Skin Corr. 1C; Eye Dam. 1; Acute Tox. 4 (orl)</p>	NDA
Piperazine	CAS:110-85-0 EC Number:203-808-3	< 1%	NDA	<p>UN GHS: Flam. Liq. 4; Skin Corr. 1C; Eye Dam. 1; Resp. Sens. 1; Acute Tox. 4 (orl); Acute Tox. 5 (skn)</p> <p>EU DSD/DPD: Repr. Cat. 3, R62, R63 C, R34 R42/43</p> <p>EU CLP: Repr. 2, H361fd; Skin Corr. 1B, H314; Resp. Sens. 1, H334; Skin Sens. 1, H317</p> <p>OSHA HCS 2012: Flam. Liq. 4; Skin Corr. 1C; Eye Dam. 1; Resp. Sens. 1; Acute Tox. 4 (orl)</p>	NDA
Phenol	CAS:108-95-2 EC Number:203-632-7 EU Index:604-001-00-2	< 1%	Skin-Rabbit LD50 • 630 mg/kg Inhalation-Rat LC50 • 316 mg/m ³ 4 Hour(s)	<p>UN GHS: Acute Tox. 4 (Orl); Acute Tox. 3 (Skn); Acute Tox. 1 (Inhl); Skin Corr. 1B; Eye Dam. 1; Muta. 2 (Orl); STOT SE 3: Narc. (Inhl); STOT RE 1 (Liver, Kidney; Or, Inhl); Aquatic Acute 1; Aquatic Chronic 3</p> <p>EU DSD/DPD: Annex VI, Table 3.2: Muta. Cat. 3, R68; T, R23/24/25; Xn, R48/20/21/22; C, R34</p> <p>EU CLP: Annex VI, Table 3.1: Muta. 2, H341; Acute Tox. 1*, H331; Acute Tox. 3*, H311; Acute Tox. 3*, H301; STOT RE 2 *, H373**; Skin Corr. 1B, H314</p> <p>OSHA HCS 2012: Acute Tox. 4 (Orl); Acute Tox. 3 (Skn); Acute Tox. 1 (Inhl); Skin Corr. 1B; Eye Dam. 1; Muta. 2 (Orl); STOT SE 3: Narc. (Inhl); STOT RE 1 (Liver, Kidney; Or, Inhl)</p>	NDA

See Section 16 for full text of H-statements and R-phrases.

Section 4 - First Aid Measures

4.1 Description of first aid measures

Inhalation

- Move victim to fresh air. Administer oxygen if breathing is difficult. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give artificial respiration if victim is not breathing. Get medical attention immediately.

Skin

- For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing. If irritation develops and persists, get medical attention.

- Eye**
- Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Get medical attention immediately.
- Ingestion**
- If swallowed, rinse mouth with water (only if the person is conscious) Do NOT induce vomiting. Give victim a glass of water or milk. Never give anything by mouth to an unconscious person. Do not use mouth-to-mouth method if victim ingested the substance. Obtain medical attention immediately if ingested.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media • Alcohol foam, CO₂, dry chemical, foam, water fog.

Unsuitable Extinguishing Media • No data available

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards • Containers may explode when heated.

Hazardous Combustion Products • Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion.

5.3 Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
Wear positive pressure self-contained breathing apparatus (SCBA).
SMALL FIRES: Move containers from fire area if you can do it without risk.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions • Ventilate enclosed areas. Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Emergency Procedures • ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Do not get water inside container.

6.2 Environmental precautions

- Avoid run off to waterways and sewers.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures • Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal

Considerations.

Section 7 - Handling and Storage**7.1 Precautions for safe handling****Handling**

- Handle and open container with care. Use only with adequate ventilation. Use caution when combining with water; DO NOT add water to corrosive liquid, ALWAYS add corrosive liquid to water while stirring to prevent release of heat, steam and fumes. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe mist, vapors, and spray. Do not get in eyes, on skin, or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities**Storage**

- Keep container tightly closed. Store in a cool, dry, well-ventilated place.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection**8.1 Control parameters**

Exposure Limits/Guidelines				
	Result	ACGIH	NIOSH	OSHA
Phenol (108-95-2)	TWAs	5 ppm TWA	5 ppm TWA; 19 mg/m ³ TWA	5 ppm TWA; 19 mg/m ³ TWA
	Ceilings	Not established	15.6 ppm Ceiling (15 min); 60 mg/m ³ Ceiling (15 min)	Not established
Piperazine (110-85-0)	TWAs	0.03 ppm TWA (inhalable fraction and vapor)	Not established	Not established
Methylamine, m-phenylenebis- (1477-55-0)	Ceilings	0.1 mg/m ³ Ceiling	0.1 mg/m ³ Ceiling	Not established
Triethanolamine (102-71-6)	TWAs	5 mg/m ³ TWA	Not established	Not established

8.2 Exposure controls**Engineering Measures/Controls**

- Good general ventilation 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.

Personal Protective Equipment**Respiratory**

- In case of insufficient ventilation, wear suitable respiratory equipment. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face

- Wear chemical splash safety goggles.

Skin/Body

- Wear appropriate gloves. Wear long sleeves and/or protective coveralls.

Environmental Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Clear thick liquid with acrid ammoniacal odor.
Color	Clear	Odor	Acrid ammoniacal.
Odor Threshold	Data lacking		
General Properties			
Boiling Point	Data lacking	Melting Point/Freezing Point	Data lacking
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	= 1 Water=1	Water Solubility	Moderately soluble
Viscosity	Data lacking	Explosive Properties	Data lacking
Oxidizing Properties:	Data lacking		
Volatility			
Vapor Pressure	Data lacking	Vapor Density	> 1 Air=1
Evaporation Rate	< 1 n-Butyl Acetate = 1		
Flammability			
Flash Point	90 C(194 F)	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- Excess heat.

10.5 Incompatible materials

- Strong bases or oxidants. Strong Lewis or mineral acids. 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 epoxy resins or isocyanates in very large amounts or under uncontrolled conditions may produce extreme heat with noxious smoke and fumes. Reaction with epoxy resins in large amounts or under uncontrolled conditions releases considerable heat and may release acrid fumes.

10.6 Hazardous decomposition products

- Oxides of carbon. Toxic nitrogenous oxides.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Components		
Methylamine, m-phenylenebis- (10% TO 30%)	1477-55-0	Acute Toxicity: Ingestion/Oral-Rat LD50 • 930 mg/kg; Inhalation-Rat LC50 • 700 ppm 1 Hour(s); <i>Sense Organs and Special Senses:Eye: Lacrimation; Lungs, Thorax, or Respiration: Respiratory depression</i> ; Skin-Rabbit LD50 • 2 g/kg; Irritation: Eye-Rabbit • 50 µg 24 Hour(s) • Severe irritation; Skin-Rabbit • 750 µg 24 Hour(s) • Severe irritation
Phenol, p-(tert-butyl)- (10% TO 30%)	98-54-4	Acute Toxicity: Ingestion/Oral-Rat LD50 • 3250 µL/kg; Skin-Rabbit LD50 • 2520 µL/kg; Irritation: Eye-Rabbit • 10 mg • Severe irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Multi-dose Toxicity: Inhalation-Rat TCLo • 67 mg/m ³ 6 Hour(s) 122 Day(s)-Intermittent; <i>Blood: Changes in other cell count (unspecified)</i> ; Tumorigen / Carcinogen: Ingestion/Oral-Hamster TDLo • 252 g/kg 20 Week(s)-Continuous; <i>Tumorigenic: Neoplastic by RTECS criteria; Gastrointestinal: Tumors</i>
Triethylenetetramine (< 10%)	112-24-3	Acute Toxicity: Ingestion/Oral-Rat LD50 • 2500 mg/kg; Skin-Rabbit LD50 • 805 mg/kg; Irritation: Eye-Rabbit • 49 mg • Severe irritation; Skin-Rabbit • 490 mg-Open • Severe irritation; Reproductive: Ingestion/Oral-Rat TDLo • 8715 mg/kg (1-21D preg); <i>Reproductive Effects: Specific Developmental Abnormalities: Musculoskeletal system; Reproductive Effects: Specific Developmental Abnormalities: Homeostasis</i>
Piperazine, 1-(2-aminoethyl)- (< 1%)	140-31-8	Acute Toxicity: Ingestion/Oral-Rat LD50 • 2140 µL/kg; Skin-Rabbit LD50 • 880 µL/kg; Irritation: Eye-Rabbit • 20 mg 24 Hour(s) • Moderate irritation; Skin-Rabbit • 5 mg 24 Hour(s) • Severe irritation; Reproductive: Ingestion/Oral-Rat TDLo • 1680 mg/kg (28D male); <i>Reproductive Effects: Paternal Effects: Spermatogenesis</i>
Piperazine (< 1%)	110-85-0	Acute Toxicity: Ingestion/Oral-Rat LD50 • 1900 mg/kg; <i>Behavioral: Excitement; Behavioral: Changes in motor activity (specific assay)</i> ; <i>Behavioral: Muscle contraction or spasticity</i> ; Inhalation-Mouse LC50 • 5400 mg/m ³ 2 Hour(s); <i>Behavioral: Excitement; Behavioral: Changes in motor activity (specific assay)</i> ; <i>Behavioral: Muscle contraction or spasticity</i> ; Irritation: Eye-Rabbit • 250 µg • Severe irritation
Triethanolamine (< 10%)	102-71-6	Acute Toxicity: Ingestion/Oral-Rat LD50 • 4920 µL/kg; <i>Sense Organs and Special Senses: Eye: Lacrimation; Gastrointestinal: Hypermotility, diarrhea; Skin and Appendages: Other: Hair</i> ; Skin-Rabbit LD50 • >20 mL/kg; Multi-dose Toxicity: Inhalation-Mouse TCLo • 125 mg/m ³ 6 Hour(s) 3 Week(s)-Intermittent; <i>Cardiac: Changes in heart weight; Blood: Pigmented or nucleated red blood cells; Blood: Changes in erythrocyte (RBC) count</i> ; Skin-Mouse TDLo • 630 mg/kg 104 Week(s)-Continuous; <i>Liver: Angiosarcoma</i> ; Skin-Mouse TDLo • 100 mg/kg 104 Week(s)-Continuous; <i>Liver: Other changes</i> ; <i>Liver: Tumors</i> ; Skin-Rat TDLo • 45990 mg/kg 2 Year(s)-Intermittent; <i>Kidney, Ureter, and Bladder: Tumors</i> ; <i>Skin and Appendages: After topical exposure: Primary irritation; Tumorigenic: Increased incidence of tumors in susceptible strains</i>
		Acute Toxicity: Ingestion/Oral-Rat LD50 • 317 mg/kg; Ingestion/Oral-Mouse TDLo • 265 mg/kg 12 Hour(s); <i>Blood: Changes in bone marrow not included above</i> ; Inhalation-Rat LC50 • 316 mg/m ³ ; Inhalation-Mouse TCLo • 15 ppm 6 Minute(s); <i>Lungs, Thorax, or Respiration: Respiratory depression</i> ; Inhalation-Rat TCLo • 110 mg/m ³ 4 Hour(s); <i>Behavioral: Somnolence (general depressed activity)</i> ; <i>Blood: Changes in serum composition (e.g., TP, bilirubin cholesterol)</i> ; <i>Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Proteases</i> ; Irritation: Eye-Rabbit • 5 mg • Severe irritation; Skin-Pig • 400 µL 30 Second(s) • Severe irritation; Skin-Rabbit • 535 mg-Open • Severe irritation; Multi-dose Toxicity: Ingestion/Oral-Mouse TDLo • 174 mg/kg 28 Day(s)-Continuous; <i>Brain and Coverings: Other degenerative changes</i> ; <i>Blood: Changes in erythrocyte (RBC) count</i> ; <i>Immunological Including Allergic: Decrease in immune response</i> ; Ingestion/Oral-Mouse TDLo • 2800 mg/kg 10 Day(s)-Intermittent; <i>Nutritional and Gross Metabolic: Gross Metabolite Changes: Weight loss or decreased</i>

Phenol (< 1%)	108-95-2	<p>weight gain; Related to Chronic Data:Death in the Other Multiple Dose data type field; Inhalation-Rat TClO • 5 mg/m³ 4 Hour(s) 17 Week(s)-Intermittent; Liver:Liver function tests impaired; Endocrine:Effect on menstrual cycle; Blood:Changes in leucocyte (WBC) count; Inhalation-Rat TClO • 150 µg/m³ 8 Hour (s) 26 Week(s)-Intermittent; Kidney, Ureter, and Bladder:Changes in tubules (including acute renal failure, acute tubular necrosis); Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:Phosphatases;</p> <p>Mutagen: Micronucleus test • Ingestion/Oral-Mouse • 265 mg/kg; DNA Inhibition • Ingestion/Oral-Mouse • 20 g/kg;</p> <p>Reproductive: Ingestion/Oral-Rat TDLo • 300 mg/kg (6-15D preg); Reproductive Effects:Effects on Fertility:Post-implantation mortality; Ingestion/Oral-Rat TDLo • 300 mg/kg (6-15D preg); Reproductive Effects:Effects on Fertility:Post-implantation mortality; Reproductive Effects:Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus); Ingestion/Oral-Rat TDLo • 1200 mg/kg (6-15D preg); Reproductive Effects:Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus);</p> <p>Tumorigen / Carcinogen: Skin-Mouse • 4000 mg/kg 24 Week(s)-Intermittent; Tumorigenic:Neoplastic by RTECS criteria; Skin and Appendages:Other:Tumors</p>
Phosphorous acid, triphenyl ester (< 10%)	101-02-0	<p>Acute Toxicity: Ingestion/Oral-Rat LD50 • 444 mg/kg; Inhalation-Rat LClO • >6700 mg/m³ 1 Hour(s); Irritation: Eye-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Skin-Rabbit • 500 mg • Severe irritation</p>
Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-(10% TO 30%)	9046-10-0	<p>Acute Toxicity: Ingestion/Oral-Rat LD50 • 242 mg/kg; Behavioral:Convulsions or effect on seizure threshold; Gastrointestinal:Ulceration or bleeding from stomach; Blood:Hemorrhage; Skin-Rabbit LD50 • 360 mg/kg; Lungs, Thorax, or Respiration:Other changes; Blood:Hemorrhage; Skin and Appendages:After systemic exposure:Dermatitis, other;</p> <p>Irritation: Eye-Rabbit • 100 mg • Severe irritation</p>

GHS Properties	Classification
Respiratory sensitization	<p>EU/CLP • Data lacking</p> <p>OSHA HCS 2012 • Respiratory Sensitizer 1</p> <p>UN GHS • Respiratory Sensitizer 1</p>
Serious eye damage/Irritation	<p>EU/CLP • Serious Eye Damage 1</p> <p>OSHA HCS 2012 • Serious Eye Damage 1</p> <p>UN GHS • Serious Eye Damage 1</p>
Acute toxicity	<p>EU/CLP • Acute Toxicity - Dermal 3 - ATEmix (dermal) = 632 mg/kg; Acute Toxicity - Inhalation 3 - ATEmix (inhl) = 2.4 mg/L (4h-V); Acute Toxicity - Oral 4 - ATEmix (oral) = 472 mg/kg</p> <p>OSHA HCS 2012 • Acute Toxicity - Dermal 3 - ATEmix (dermal) = 638 mg/kg; Acute Toxicity - Inhalation 3 - ATEmix (inhl) = 3.1 mg/L (4h-V); Acute Toxicity - Oral 4 - ATEmix (oral) = 470 mg/kg</p> <p>UN GHS • Acute Toxicity - Dermal 3 - ATEmix (dermal) = 638 mg/kg; Acute Toxicity - Inhalation 3 - ATEmix (inhl) = 3.1 mg/L (4h-V); Acute Toxicity - Oral 4 - ATEmix (oral) = 470 mg/kg</p>
Aspiration Hazard	<p>EU/CLP • Data lacking</p> <p>OSHA HCS 2012 • Data lacking</p> <p>UN GHS • Data lacking</p>
Carcinogenicity	<p>EU/CLP • Data lacking</p> <p>OSHA HCS 2012 • Data lacking</p> <p>UN GHS • Data lacking</p>
Skin corrosion/Irritation	<p>EU/CLP • Skin Corrosion 1B</p> <p>OSHA HCS 2012 • Skin Corrosion 1B</p> <p>UN GHS • Skin Corrosion 1B</p>
Skin sensitization	<p>EU/CLP • Skin Sensitizer 1</p> <p>OSHA HCS 2012 • Skin Sensitizer 1</p> <p>UN GHS • Skin Sensitizer 1</p>

STOT-RE	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking UN GHS • Data lacking
STOT-SE	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking UN GHS • Data lacking
Toxicity for Reproduction	EU/CLP • Toxic to Reproduction 2 OSHA HCS 2012 • Data lacking UN GHS • Data lacking
Germ Cell Mutagenicity	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking UN GHS • Data lacking

Potential Health Effects

Inhalation

- Acute (Immediate)**
 - Toxic if inhaled. May cause corrosive burns - irreversible damage.
- Chronic (Delayed)**
 - Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin

- Acute (Immediate)**
 - Toxic in contact with skin. Causes severe skin burns and eye damage. May cause skin sensitization. Symptoms include redness, and skin rash.
- Chronic (Delayed)**
 - Repeated or prolonged exposure to corrosive materials will cause dermatitis.

Eye

- Acute (Immediate)**
 - Causes serious eye damage.
- Chronic (Delayed)**
 - Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

Ingestion

- Acute (Immediate)**
 - Harmful if swallowed. May cause irreversible damage to mucous membranes.
- Chronic (Delayed)**
 - Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal disturbances.

Reproductive Effects

- Repeated and prolonged exposure may cause reproductive effects.

Key to abbreviations

LC = Lethal Concentration

LD = Lethal Dose

TC = Toxic Concentration

TD = Toxic Dose

Section 12 - Ecological Information

12.1 Toxicity

	CAS	
Buehler Epothin 2 Hardener / SDS# 9130500	NDA	<p>Aquatic Toxicity-Fish: 4 Day(s) LC50 <i>Fathead minnow</i> 4.71-5.62 mg/L Comments: Phenol, p-(tert-butyl)- (98-54-4) 96 Hour(s) LC50 <i>Cyprinus carpio (Common Carp)</i> 0.00175 mg/L Comments: Phenol (108-95-2) 28 Day(s) NOEC <i>Oryzias latipes (Japanese Medaka)</i> 2.63 mg/L Comments: Phenol (108-95-2)</p> <p>Aquatic Toxicity-Crustacea: 2 Day(s) EC50 <i>Water flea</i> 3.4-4.5 mg/L Comments: Phenol, p-(tert-butyl)- (98-54-4) 16 Day(s) NOEC <i>Daphnia magna (Water Flea)</i> 0.16 mg/L Comments: Phenol (108-95-2) 48 Hour(s) EC50 <i>Daphnia magna (Water Flea)</i> 4.2 mg/L Comments: Phenol (108-95-2)</p>

Aquatic Toxicity-Algae and Other Aquatic Plant(s): 4 Day(s) EC50 *Green Algae* 3.7 mg/L
 Comments: Triethylenetetramine (112-24-3)
 96 Hour(s) EC50 *Pseudokirchneriella subcapitata (Green Algae)* 0.0611 mg/L Comments: Phenol
 (108-95-2)

- Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

- Material data lacking.

12.3 Bioaccumulative potential

- Material data lacking.

12.4 Mobility in Soil

- Material data lacking.

12.5 Results of PBT and vPvB assessment

- No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN2735	Polyamines, liquid, corrosive, n.o.s. (Aliphatic amine blend)	8	III	NDA
TDG	UN2735	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Aliphatic amine blend)	8	III	NDA
IATA/ICAO	UN2735	Polyamines, liquid, corrosive, n.o.s. (Aliphatic amine blend)	8	III	NDA

14.6 Special precautions for user

- None specified.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Data lacking.

Section 15 - Regulatory Information

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

SARA Hazard Classifications

- Acute

Inventory						
Component	CAS	Canada DSL	Canada NDSL	EU EINECS	EU ELNICS	TSCA
Diisononylcyclohexyl phthalate	474919-59-0	Yes	No	No	No	Yes
Hydroxy alkylated polyamine	26950-63-0	Yes	No	No	No	Yes
Methylamine, m-phenylenebis-	1477-55-0	Yes	No	Yes	No	Yes
Phenol	108-95-2	Yes	No	Yes	No	Yes
Phenol, p-(tert-butyl)-	98-54-4	Yes	No	Yes	No	Yes
Phosphorous acid, triphenyl ester	101-02-0	Yes	No	Yes	No	Yes
Piperazine	110-85-0	Yes	No	Yes	No	Yes
Piperazine, 1-(2-aminoethyl)-	140-31-8	Yes	No	Yes	No	Yes
Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Yes	No	No	No	Yes
Triethanolamine	102-71-6	Yes	No	Yes	No	Yes
Triethylenetetramine	112-24-3	Yes	No	Yes	No	Yes
Trimethylhexamethylene diamine	3236-53-1	Yes	No	Yes	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	D2B, E
• Phenol	108-95-2	D1A, E
• Triethanolamine	102-71-6	Uncontrolled product according to WHMIS classification criteria
• Piperazine, 1-(2-aminoethyl)-	140-31-8	D1B, D2B, E
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	D1B, D2B, E
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

Canada - WHMIS - Ingredient Disclosure List

• Phosphorous acid, triphenyl ester	101-02-0	1 %
• Phenol, p-(tert-butyl)-	98-54-4	1 %
• Piperazine	110-85-0	0.1 %
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed

• Methylamine, m-phenylenebis-	1477-55-0	1 %
• Phenol	108-95-2	1 %
• Triethanolamine	102-71-6	1 %
• Piperazine, 1-(2-aminoethyl)-	140-31-8	1 %
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	0.1 %
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

Environment

Canada - CEPA - Priority Substances List

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	Not Listed
• Phenol	108-95-2	Priority Substance List 2 (substance not considered toxic)
• Triethanolamine	102-71-6	Not Listed
• Piperazine, 1-(2-aminoethyl)-	140-31-8	Not Listed
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	Not Listed
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	Not Listed
• Phenol	108-95-2	Not Listed
• Triethanolamine	102-71-6	Not Listed
• Piperazine, 1-(2-aminoethyl)-	140-31-8	Not Listed
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	Not Listed
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	Not Listed
• Phenol	108-95-2	Not Listed
• Triethanolamine	102-71-6	Not Listed

• Piperazine, 1-(2-aminoethyl)-	140-31-8	Not Listed
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	Not Listed
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	Not Listed
• Phenol	108-95-2	
• Triethanolamine	102-71-6	Not Listed
• Piperazine, 1-(2-aminoethyl)-	140-31-8	Not Listed
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	Not Listed
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	Not Listed
• Phenol	108-95-2	1000 lb final RQ; 454 kg final RQ
• Triethanolamine	102-71-6	Not Listed
• Piperazine, 1-(2-aminoethyl)-	140-31-8	Not Listed
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	Not Listed
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	Not Listed
• Phenol	108-95-2	Not Listed
• Triethanolamine	102-71-6	Not Listed
• Piperazine, 1-(2-aminoethyl)-	140-31-8	Not Listed
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	Not Listed
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	Not Listed
• Phenol	108-95-2	1000 lb EPCRA RQ
• Triethanolamine	102-71-6	Not Listed
• Piperazine, 1-(2-aminoethyl)-	140-31-8	Not Listed
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	Not Listed
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	Not Listed
• Phenol	108-95-2	500 lb lower TPQ; 10000 lb upper TPQ
• Triethanolamine	102-71-6	Not Listed
• Piperazine, 1-(2-aminoethyl)-	140-31-8	Not Listed
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	Not Listed
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	Not Listed
• Phenol	108-95-2	1.0 % de minimis concentration
• Triethanolamine	102-71-6	Not Listed
• Piperazine, 1-(2-aminoethyl)-	140-31-8	Not Listed
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	Not Listed
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	Not Listed
• Phenol	108-95-2	Not Listed
• Triethanolamine	102-71-6	Not Listed

• Piperazine, 1-(2-aminoethyl)-	140-31-8	Not Listed
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	Not Listed
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	Not Listed
• Phenol	108-95-2	Not Listed
• Triethanolamine	102-71-6	Not Listed
• Piperazine, 1-(2-aminoethyl)-	140-31-8	Not Listed
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	Not Listed
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	Not Listed
• Phenol	108-95-2	Not Listed
• Triethanolamine	102-71-6	Not Listed
• Piperazine, 1-(2-aminoethyl)-	140-31-8	Not Listed
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	Not Listed
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	Not Listed
• Phenol	108-95-2	Not Listed
• Triethanolamine	102-71-6	Not Listed
• Piperazine, 1-(2-aminoethyl)-	140-31-8	Not Listed
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	Not Listed
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	Not Listed
• Phenol	108-95-2	Not Listed
• Triethanolamine	102-71-6	Not Listed
• Piperazine, 1-(2-aminoethyl)-	140-31-8	Not Listed
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	Not Listed
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	Not Listed
• Phenol	108-95-2	Not Listed
• Triethanolamine	102-71-6	Not Listed
• Piperazine, 1-(2-aminoethyl)-	140-31-8	Not Listed
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	Not Listed
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Phenol, p-(tert-butyl)-	98-54-4	Not Listed
• Piperazine	110-85-0	Not Listed
• Hydroxy alkylated polyamine	26950-63-0	Not Listed
• Trimethylhexamethylene diamine	3236-53-1	Not Listed
• Methylamine, m-phenylenebis-	1477-55-0	Not Listed
• Phenol	108-95-2	Not Listed
• Triethanolamine	102-71-6	Not Listed
• Piperazine, 1-(2-aminoethyl)-	140-31-8	Not Listed
• Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-	9046-10-0	Not Listed
• Triethylenetetramine	112-24-3	Not Listed
• Diisononylcyclohexyl phthalate	474919-59-0	Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

Section 16 - Other Information**Relevant Phrases (code & full text)**

- H301 - Toxic if swallowed
- H312 - Harmful in contact with skin

H315 - Causes skin irritation
H319 - Causes serious eye irritation
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H341 - Suspected of causing genetic defects.
H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child.
H373 - May cause damage to organs through prolonged or repeated exposure.
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
H412 - Harmful to aquatic life with long lasting effects
R21 - Harmful in contact with skin.
R21/22 - Harmful in contact with skin and if swallowed.
R22 - Harmful if swallowed.
R23 - Toxic by inhalation.
R24/25 - Toxic in contact with skin and if swallowed.
R36/38 - Irritating to eyes and skin.
R38 - Irritating to skin.
R42/43 - May cause sensitisation by inhalation and skin contact.
R48/20/21/22 - Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R50 - Very toxic to aquatic organisms.
R52 - Harmful to aquatic organisms.
R63 - Possible risk of harm to the unborn child.
R68 - Possible risk of irreversible effects.

Revision Date

- 11/September/2015

Preparation Date

- 29/September/2013

Disclaimer/Statement of Liability

- To the best of our knowledge, the information contained in this SDS 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.

Key to abbreviations

NDA = No data available
