Safety Data Sheet

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

1.1 Product identifier

Product Name • **Buehler Epo-Color Hardener**

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

Relevant identified use(s) • Epoxy activator

1.3 Details of the supplier of the safety data sheet

Manufacturer • BUEHLER, a division of Illinios 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 4 - H312
Skin Corrosion 1B - H314
Skin Sensitization 1 - H317
Serious Eye Damage 1 - H318
Hazardous to the aquatic environment Chronic 2 - H411

DSD/DPD • Corrosive (C)
Harmful (Xn)
Dangerous to the Environment (N)
R21/22, R34, R43, R51, R53

2.2 Label Elements

CLP

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
  H318 - Causes serious eye damage
  H411 - Toxic to aquatic life with long lasting effects

Precautionary statements

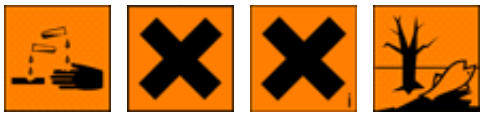
Prevention
- P260 - Do not breathe mists, vapours, and/or spray.
  P264 - Wash thoroughly after handling.
  P270 - Do not eat, drink or smoke when using this product.
  P272 - Contaminated work clothing should not be allowed out of the workplace.
  P273 - Avoid release to the environment.
  P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Response
- P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  P310 - Immediately 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.
  P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
  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.
  P391 - Collect spillage.

Storage/Disposal
- P405 - Store locked up.
  P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Supplemental information
- 50 - 80 percent of this product consists of an ingredient of unknown toxicity.

DSD/DPD



Risk phrases
- R21/22 - Harmful in contact with skin and if swallowed.
  R34 - Causes burns.
  R43 - May cause sensitisation by skin contact.
  R51 - Toxic to aquatic organisms.
  R53 - May cause long-term adverse effects in the aquatic environment.

Safety phrases
- S24 - Avoid contact with skin.
  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 4
  Skin Corrosion 1B
  Skin Sensitization 1
  Respiratory Sensitization 1

2.2 Label elements

UN GHS

DANGER

Hazard statements

- Harmful if swallowed
  Harmful in contact with skin
  Causes severe skin burns and eye damage.
  May cause an allergic skin reaction
  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.
  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 (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.

Storage/Disposal

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

Supplemental information

- 50 - 80 percent of this product consists of an ingredient of unknown toxicity.

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 4
Skin Corrosion 1B
Skin Sensitization 1
Serious Eye Damage 1
Respiratory Sensitization 1

2.2 Label elements

OSHA HCS 2012

DANGER

Hazard statements

- Harmful if swallowed
  Harmful in contact with skin
  Causes severe skin burns and eye damage.
  May cause an allergic skin reaction
  Causes serious eye damage
  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.
  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.
  Take off contaminated clothing and wash it 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 locked up.
  Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Supplemental information

- 50 - 80 percent of this product consists of an ingredient of unknown toxicity.

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

- Toxic - D1B
  Other Toxic Effects - D2B
  Corrosive - E

2.2 Label elements

WHMIS

- Toxic - D1B
  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**
Reaction products with ethylene oxide	**CAS:**28063-82-3	50% TO 80%	NDA	**UN GHS:** Not Classified **EU DSD/DPD:** Not Classified **EU CLP:** Not Classified **OSHA HCS 2012:** Not Classified	NDA
Diethylenetriamine	**CAS:**111-40-0 **EC Number:**203-865-4 **EU Index:**612-058-00-X	10% TO 30%	NDA	**UN GHS:** Skin Corr. 1B; Eye Dam. 1; Skin Sens. 1; Resp. Sens. 1; Acute Tox. 4 (skn, orl) **EU DSD/DPD:** Annex VI, Table 3.2: Xn; R21/22; C; R34; R43 **EU CLP:** Annex VI, Table 3.1: Acute Tox. 4 *, H312; Acute Tox. 4 *, H302; Skin Corr. 1B, H314; Skin Sens. 1, H317 **OSHA HCS 2012:** Skin Corr. 1B; Eye Dam. 1; Skin Sens. 1; Resp. Sens. 1; Acute Tox. 4 (skn, orl)	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
Phenol	**CAS:**108-95-2 **EC Number:**203-632-7 **EU Index:**604-001-00-2	< 1%	Ingestion/Oral-Rat LD50 • 317 mg/kg Inhalation-Rat LC50 • 316 mg/m³ 4 Hour(s)	**UN GHS:** Flam. Liq. 4; Skin Corr. 1B; Eye Dam. 1; Acute Tox. 4 (orl); Acute Tox. 3 (skn); Acute Tox. 1 (inhl); Muta. 2; STOT SE 3: Resp. Irrit.; STOT RE 1 (Liver & Kidney); STOT SE 3: Narc.; Acute Aquatic 2 **EU DSD/DPD:** Annex VI, Table 3.2: T; R23/24/25 C; R34; Xn; R48/20/21/22; Muta. Cat. 3; R68 **EU CLP:** Annex VI, Table 3.1: Muta. 2, H341; Acute Tox. 3*, H301; Acute Tox. 1, H330; Acute Tox. 3*, H311; STOT RE 2, H373; Skin Corr. 1B, H314	NDA

				OSHA HCS 2012: Flam. Liq. 4; Skin Corr. 1B; Eye Dam. 1; Acute Tox. 4 (orl); Acute Tox. 3 (skn); Acute Tox. 1 (inhl); Muta. 2; STOT SE 3: Resp. Irrit.; STOT RE 1 (Liver & Kidney); STOT SE 3: Narc.	

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.

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.
  Wash spill area with soap and water.

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/m3 TWA	5 ppm TWA; 19 mg/m3 TWA
	Ceilings	Not established	15.6 ppm Ceiling (15 min); 60 mg/m3 Ceiling (15 min)	Not established
Diethylenetriamine (111-40-0)	TWAs	1 ppm TWA	1 ppm TWA; 4 mg/m3 TWA	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	Light yellow liquid with ammoniacal odor.
Color	Light yellow.	Odor	Ammoniacal
Odor Threshold	Data lacking		
General Properties			
Boiling Point	311 to 404 F(155 to 206.6667 C)	Melting Point/Freezing Point	Data lacking
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	= 1.042 Water=1	Water Solubility	Data lacking
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	212 F(100 C) PMCC (Pensky-Martins Closed Cup)	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 Lewis or mineral acids. Reaction with epoxy resins and isocyanates in large amounts or under uncontrolled conditions releases considerable heat and may release acrid fumes. Reaction with some nitrates or nitrites can cause the formation of cancer-causing nitrosoamines.

10.6 Hazardous decomposition products

- Oxides of carbon, oxides of nitrogen, ammonia. Toxic fumes of POx.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Components		
Diethylenetriamine (10% TO 30%)	111-40-0	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 1080 mg/kg; *Behavioral*:**Convulsions or effect on seizure threshold**; Skin-Rabbit LD50 • 1090 mg/kg; **Irritation:** Skin-Rabbit • 500 mg-Open • Moderate irritation
Phenol (< 1%)	108-95-2	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 317 mg/kg; *Behavioral*:**Convulsions or effect on seizure threshold**; Inhalation-Rat LC50 • 316 mg/m³; Inhalation-Rat TCLo • 110 mg/m³ 4 Hour(s); *Behavioral*:**Somnolence (general depressed activity)**; *Blood*:**Changes in serum composition (e.g., TP, bilirubin cholesterol)**; *Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels*:**Proteases**; Skin-Rabbit LD50 • 630 mg/kg; **Irritation:** Eye-Rabbit • 5 mg • Severe irritation; Skin-Rabbit • 535 mg-Open • Severe irritation; **Mutagen:** Micronucleus test • Ingestion/Oral-Mouse • 265 mg/kg; **Reproductive:** 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)**; **Tumorigen / Carcinogen:** Skin-Mouse TDLo • 16 g/kg 40 Week(s)-Intermittent; *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Skin and Appendages:Other*:**Tumors**
Phosphorous acid, triphenyl ester (< 10%)	101-02-0	**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

GHS Properties	Classification
Respiratory sensitization	**EU/CLP** • Data lacking **OSHA HCS 2012** • Respiratory Sensitizer 1 **UN GHS** • Respiratory Sensitizer 1
Serious eye damage/Irritation	**EU/CLP** • Serious Eye Damage 1 **OSHA HCS 2012** • Serious Eye Damage 1 **UN GHS** • Data lacking
Acute toxicity	**EU/CLP** • Acute Toxicity - Dermal 4 - ATEmix (dermal) = 1067 mg/kg; Acute Toxicity - Oral 4 - ATEmix (oral) = 771 mg/kg **OSHA HCS 2012** • Acute Toxicity - Dermal 4 - ATEmix (dermal) = 1090 mg/kg; Acute Toxicity - Oral 4 - ATEmix (oral) = 797 mg/kg **UN GHS** • Acute Toxicity - Dermal 4 - ATEmix (dermal) = 1090 mg/kg; Acute Toxicity - Oral 4 - ATEmix (oral) = 797 mg/kg

Aspiration Hazard	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking **UN GHS** • Data lacking
Carcinogenicity	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking **UN GHS** • Data lacking
Skin corrosion/Irritation	**EU/CLP** • Skin Corrosion 1B **OSHA HCS 2012** • Skin Corrosion 1B **UN GHS** • Skin Corrosion 1B
Skin sensitization	**EU/CLP** • Skin Sensitizer 1 **OSHA HCS 2012** • Skin Sensitizer 1 **UN GHS** • Skin Sensitizer 1
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** • Data lacking **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)
- 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)
- Harmful 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 distrubances.

Key to abbreviations

LC = Lethal Concentration
LD = Lethal Dose
TC = Toxic Concentration
TD = Toxic Dose

Section 12 - Ecological Information

12.1 Toxicity

- 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, Chronic

Inventory						
Component	**CAS**	**Canada DSL**	**Canada NDSL**	**EU EINECS**	**EU ELNICS**	**TSCA**
Diethylenetriamine	111-40-0	Yes	No	Yes	No	Yes
Phenol	108-95-2	Yes	No	Yes	No	Yes
Phosphorous acid, triphenyl ester	101-02-0	Yes	No	Yes	No	Yes
Reaction products with ethylene oxide	28063-82-3	Yes	No	No	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	D1A, E
• Diethylenetriamine	111-40-0	D2B, E

Canada - WHMIS - Ingredient Disclosure List

• Phosphorous acid, triphenyl ester	101-02-0	1 %
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	1 %
• Diethylenetriamine	111-40-0	0.1 %

Environment

Canada - CEPA - Priority Substances List

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	Priority Substance List 2 (substance not considered toxic)
• Diethylenetriamine	111-40-0	Not Listed

United States

Labor

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

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	Not Listed
• Diethylenetriamine	111-40-0	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	Not Listed
• Diethylenetriamine	111-40-0	Not Listed

Environment

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

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed

• Phenol	108-95-2	
• Diethylenetriamine	111-40-0	Not Listed

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

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	1000 lb final RQ; 454 kg final RQ
• Diethylenetriamine	111-40-0	Not Listed

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

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	Not Listed
• Diethylenetriamine	111-40-0	Not Listed

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

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	1000 lb EPCRA RQ
• Diethylenetriamine	111-40-0	Not Listed

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

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	500 lb lower TPQ; 10000 lb upper TPQ
• Diethylenetriamine	111-40-0	Not Listed

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

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	1.0 % de minimis concentration
• Diethylenetriamine	111-40-0	Not Listed

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

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	Not Listed
• Diethylenetriamine	111-40-0	Not Listed

United States - California

Environment

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

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	Not Listed
• Diethylenetriamine	111-40-0	Not Listed

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

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	Not Listed

• Diethylenetriamine	111-40-0	Not Listed

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

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	Not Listed
• Diethylenetriamine	111-40-0	Not Listed

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

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	Not Listed
• Diethylenetriamine	111-40-0	Not Listed

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

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	Not Listed
• Diethylenetriamine	111-40-0	Not Listed

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

• Phosphorous acid, triphenyl ester	101-02-0	Not Listed
• Reaction products with ethylene oxide	28063-82-3	Not Listed
• Phenol	108-95-2	Not Listed
• Diethylenetriamine	111-40-0	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
  H311 - Toxic in contact with skin
  H315 - Causes skin irritation
  H319 - Causes serious eye irritation
  H330 - Fatal if inhaled
  H341 - Suspected of causing genetic defects.
  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

  R23/24/25 - Toxic by inhalation, in contact with skin and if swallowed.
  R36/38 - Irritating to eyes and skin.
  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.
  R68 - Possible risk of irreversible effects.

Revision Date
- 24/September/2015

Preparation Date
- 27/November/2012

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