

## SAFETY DATA SHEET Clear Digoutable Polyester Resin, Part A

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

1. Identification	
Product identifier	
Product name	Clear Digoutable Polyester Resin, Part A
Product number	PE7501A, EPE7501RP250G, ZE
Recommended use of the chemical and restrictions on use	
Application	Resin.
Uses advised against	No specific uses advised against are identified.
Details of the supplier of the s	afety data sheet
Supplier	ELECTROLUBE. A division of HK WENTWORTH LTD HK WENTWORTH-AMERICA PO Box 126257 Benbrook, Texas 76126 USA info@hkw.us.com +1 888-501-9203
Emergency telephone numbe	<u>r</u>
Emergency telephone	+1 202 464 2554 (USA only) +44 1235 239670
2. Hazard(s) identification	
Classification of the substance	e or mixture
Physical hazards	Not Classified
Health hazards	Not Classified
Environmental hazards	Not Classified
Label elements Hazard statements Other hazards	NC Not Classified
This product does not contain any substances classified as PBT or vPvB.	
3. Composition/information on ingredients	
Mixtures	
Composition comments	None of the ingredients are required to be listed.
4. First-aid measures	
Description of first aid measures	

General information	Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.
Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.
Ingestion	Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.
Skin Contact	Remove affected person from source of contamination. Rinse immediately with plenty of water.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue.
Most important symptoms and	effects, both acute and delayed
General information	See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Prolonged inhalation of high concentrations may damage respiratory system.
Ingestion	Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.
Skin contact	Prolonged contact may cause dryness of the skin.
Eye contact	May cause temporary eye irritation.
Indication of immediate medic	al attention and special treatment needed
Notes for the doctor	Treat symptomatically.
Specific treatments	No special treatment required.
5. Fire-fighting measures	
Extinguishing media	
Suitable extinguishing media	The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Special hazards arising from t	he substance or mixture
Specific hazards	Containers can burst violently or explode when heated, due to excessive pressure build-up.
Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.
Advice for firefighters	
Protective actions during firefighting	Avoid breathing fire gases or vapors. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapors and protect men stopping the leak.

Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.	
6. Accidental release measure	S	
Personal precautions, protectiv	Personal precautions, protective equipment and emergency procedures	
Personal precautions	No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage.	
Environmental precautions		
Environmental precautions	Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).	
Methods and material for conta	ainment and cleaning up	
Methods for cleaning up	Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Reuse or recycle products wherever possible. Approach the spillage from upwind. Small Spillages: If the product is soluble in water, dilute the spillage with water and mop it up. Alternatively, or if it is not water-soluble, absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. Large Spillages: If leakage cannot be stopped, evacuate area. Flush spilled material into an effluent treatment plant, or proceed as follows. Contain and absorb spillage with sand, earth or other non-combustible material. Place waste in labeled, sealed containers. Clean contaminated objects and areas thoroughly, observing environmental regulations. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.	
Reference to other sections	For personal protection, see Section 8. For waste disposal, see Section 13.	
7. Handling and storage		
Precautions for safe handling		
Usage precautions	Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimize spills. Keep container tightly sealed when not in use. Avoid the formation of mists.	
Advice on general occupational hygiene	Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.	
Conditions for safe storage, inc	cluding any incompatibilities	
Storage precautions	Store away from incompatible materials (see Section 10). Store in accordance with local regulations.	
Storage class	Unspecified storage.	
Specific end uses(s)		
Specific end use(s)	The identified uses for this product are detailed in Section 1.	

8. Exposure Controls/personal protection

**Control parameters** 

#### Occupational exposure limits

#### Cyclohexanone

Long-term exposure limit (8-hour TWA): OSHA 50 ppm 200 mg/m<sup>3</sup> Long-term exposure limit (8-hour TWA): ACGIH 20 ppm Short-term exposure limit (15-minute): ACGIH 50 ppm A3, Sk OSHA = Occupational Safety and Health Administration. ACGIH = American Conference of Governmental Industrial Hygienists. A3 = Confirmed Animal Carcinogen with Unknown Relevance to Humans. Sk = Danger of cutaneous absorption.

#### Cyclohexanone (CAS: 108-94-1)

Immediate danger to life 700 ppm and health

#### Exposure controls

Protective equipment	
Appropriate engineering controls	Provide adequate ventilation. Good general ventilation should be adequate to control worker exposure to airborne contaminants.
Eye/face protection	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with OSHA 1910.133. The following protection should be worn: Chemical splash goggles.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with OSHA 1910.138 and be demonstrated to be impervious to the chemical and resist degradation. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.
Other skin and body protection	Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.
Hygiene measures	Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Provide adequate ventilation. Large Spillages: If ventilation is inadequate, suitable respiratory protection must be worn.
Environmental exposure controls	Not regarded as dangerous for the environment.
9. Physical and Chemical Pro	operties

Information on basic physical and chemical properties

Appearance	Liquid.
Color	Colorless to pale yellow.
Odor	Not known.
Odor threshold	Not available.
рН	Not available.
Melting point	Not available.
Initial boiling point and range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Evaporation factor	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	Not available.
Other flammability	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Bulk density	1 kg/l
Solubility(ies)	Not available.
Partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	4500 mPa s @ 23°C/73.4°F
Explosive properties	Not considered to be explosive.
Oxidizing properties	Does not meet the criteria for classification as oxidizing.
10. Stability and reactivity	
Reactivity	See the other subsections of this section for further details.
Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions	No potentially hazardous reactions known.
Conditions to avoid	There are no known conditions that are likely to result in a hazardous situation.
Materials to avoid	No specific material or group of materials is likely to react with the product to produce a hazardous situation.

Hazardous decomposition<br/>productsDoes not decompose when used and stored as recommended. Thermal decomposition or<br/>combustion products may include the following substances: Harmful gases or vapors.

11. Toxicological information			
Information on toxicological ef	Information on toxicological effects		
Toxicological effects	Not regarded as a health hazard under current legislation.		
Acute toxicity - oral Notes (oral LD₅₀)	Based on available data the classification criteria are not met.		
Acute toxicity - dermal Notes (dermal LD <sub>50</sub> )	Based on available data the classification criteria are not met.		
Acute toxicity - inhalation Notes (inhalation LC <sub>50</sub> )	Based on available data the classification criteria are not met.		
Skin corrosion/irritation Animal data	Based on available data the classification criteria are not met.		
Serious eye damage/irritation Serious eye damage/irritation	Based on available data the classification criteria are not met.		
Respiratory sensitization Respiratory sensitization	Based on available data the classification criteria are not met.		
Skin sensitization Skin sensitization	Based on available data the classification criteria are not met.		
Germ cell mutagenicity Genotoxicity - in vitro	Based on available data the classification criteria are not met.		
Carcinogenicity Carcinogenicity	Based on available data the classification criteria are not met.		
IARC carcinogenicity	Contains a substance which may be potentially carcinogenic. IARC Group 3 Not classifiable as to its carcinogenicity to humans.		
Reproductive toxicity Reproductive toxicity - fertility	Based on available data the classification criteria are not met.		
Reproductive toxicity - development	Based on available data the classification criteria are not met.		
Specific target organ toxicity - STOT - single exposure	single exposure Not classified as a specific target organ toxicant after a single exposure.		
Specific target organ toxicity - STOT - repeated exposure	<b>repeated exposure</b> Not classified as a specific target organ toxicant after repeated exposure.		
Aspiration hazard Aspiration hazard	Based on available data the classification criteria are not met.		
General information	No specific health hazards known. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.		
Inhalation	Prolonged inhalation of high concentrations may damage respiratory system.		

Ingestion	Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.
Skin Contact	Prolonged contact may cause dryness of the skin.
Eye contact	May cause temporary eye irritation.
Route of entry	Ingestion Inhalation Skin and/or eye contact
Target Organs	No specific target organs known.
12. Ecological Information	
Ecotoxicity	Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.
Toxicity	Based on available data the classification criteria are not met.
Persistence and degradability	
Persistence and degradability	The degradability of the product is not known.
Bioaccumulative potential	
Bio-Accumulative Potential	No data available on bioaccumulation.
Partition coefficient	Not available.
Mobility in soil	
Mobility	No data available.
Other adverse effects	
Other adverse effects	None known.
Other adverse effects           13. Disposal considerations	None known.
	None known.
13. Disposal considerations	None known. The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.
13. Disposal considerations Waste treatment methods	The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and
13. Disposal considerations Waste treatment methods General information	The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste packaging should be collected for reuse or recycling. Incineration or landfill should only be considered when recycling is not feasible. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water
13. Disposal considerations         Waste treatment methods         General information         Disposal methods	The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste packaging should be collected for reuse or recycling. Incineration or landfill should only be considered when recycling is not feasible. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water
13. Disposal considerations         Waste treatment methods         General information         Disposal methods         14. Transport information	The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste packaging should be collected for reuse or recycling. Incineration or landfill should only be considered when recycling is not feasible. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority.
13. Disposal considerations         Waste treatment methods         General information         Disposal methods         14. Transport information         General	The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste packaging should be collected for reuse or recycling. Incineration or landfill should only be considered when recycling is not feasible. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority.
13. Disposal considerations         Waste treatment methods         General information         Disposal methods         14. Transport information         General         UN Number	The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste packaging should be collected for reuse or recycling. Incineration or landfill should only be considered when recycling is not feasible. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority.
13. Disposal considerations         Waste treatment methods         General information         Disposal methods         14. Transport information         General         UN Number         Not applicable.	The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste packaging should be collected for reuse or recycling. Incineration or landfill should only be considered when recycling is not feasible. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority.

No transport warning sign required.

#### Transport labels

No transport warning sign required.

#### DOT transport labels

No transport warning sign required.

#### Packing group

Not applicable.

#### Environmental hazards

Environmentally Hazardous Substance No.

#### Special precautions for user

Not applicable.

DOT TIH Zone Not applicable.

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

#### 15. Regulatory information

#### **US Federal Regulations**

#### SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

None of the ingredients are listed or exempt.

#### CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

The following ingredients are listed or exempt:

Cyclohexanone Final CERCLA RQ: 5000(2270) pounds (Kilograms)

#### SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None of the ingredients are listed or exempt.

#### SARA 313 Emission Reporting

None of the ingredients are listed or exempt.

#### CAA Accidental Release Prevention

None of the ingredients are listed or exempt.

#### FDA - Essential Chemical

None of the ingredients are listed or exempt.

#### **FDA - Precursor Chemical**

None of the ingredients are listed or exempt.

#### SARA (311/312) Hazard Categories

None of the ingredients are listed or exempt.

#### OSHA Highly Hazardous Chemicals

None of the ingredients are listed or exempt.

#### **US State Regulations**

### California Proposition 65 Carcinogens and Reproductive Toxins

The following ingredients are listed or exempt:

*1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich* Known to the State of California to cause developmental and reproductive toxicity.

### California Air Toxics "Hot Spots" (A-I)

None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-II) None of the ingredients are listed or exempt.

### California Directors List of Hazardous Substances

The following ingredients are listed or exempt:

Cyclohexanone

### Massachusetts "Right To Know" List

The following ingredients are listed or exempt:

Cyclohexanone

#### Rhode Island "Right To Know" List The following ingredients are listed or exempt:

Cyclohexanone

Minnesota "Right To Know" List The following ingredients are listed or exempt:

Cyclohexanone

#### New Jersey "Right To Know" List

The following ingredients are listed or exempt:

Cyclohexanone

#### Pennsylvania "Right To Know" List

The following ingredients are listed or exempt:

Cyclohexanone

#### Inventories

US - TSCA

The following ingredients are listed or exempt:

1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich

Cyclohexanone

#### US - TSCA 12(b) Export Notification

None of the ingredients are listed or exempt.

#### 16. Other information

Training advice	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
Issued by	Bethany Turner
Revision date	9/11/2017
Revision	0

**SDS No.** 2068

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.



## SAFETY DATA SHEET Clear Digoutable Polyester Resin, Part B

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

1. Identification		
Product identifier		
Product name	Clear Digoutable Polyester Resin, Part B	
Product number	PE7501B, EPE7501RP250G, ZE	
Recommended use of the che	Recommended use of the chemical and restrictions on use	
Application	Hardener.	
Uses advised against	No specific uses advised against are identified.	
Details of the supplier of the s	afety data sheet	
Supplier	ELECTROLUBE. A division of HK WENTWORTH LTD HK WENTWORTH-AMERICA PO Box 126257 Benbrook, Texas 76126 USA info@hkw.us.com +1 888-501-9203	
Emergency telephone number	<u>r</u>	
Emergency telephone	+1 202 464 2554 (USA only) +44 1235 239670	
2. Hazard(s) identification		
Classification of the substance	e or mixture	
Physical hazards	Not Classified	
Health hazards	Not Classified	
Environmental hazards	Not Classified	
Label elements		
Hazard statements	NC Not Classified	
Other hazards		
This product does not contain any substances classified as PBT or vPvB.		
2. Composition information on ingradiante		

3. Composition/information on ingredients

#### Mixtures

2,4,6-Tris(dimethylaminom	ethyl)phenol 1-5%
CAS number: 90-72-2	
<b>Classification</b> Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Irrit. 2A - H319	
Cyclohexanone CAS number: 108-94-1	1-5%
Classification Flam. Liq. 3 - H226 Acute Tox. 4 - H332	
The full text for all hazard sta	atements is displayed in Section 16.
4. First-aid measures	
Description of first aid meas	ures
General information	Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.
Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.
Ingestion	Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.
Skin Contact	Remove affected person from source of contamination. Rinse immediately with plenty of water.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue.
Most important symptoms a	nd effects, both acute and delayed
General information	See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Prolonged inhalation of high concentrations may damage respiratory system.
Ingestion	Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.
Skin contact	Prolonged contact may cause dryness of the skin.
Eye contact	May cause temporary eye irritation.
Indication of immediate med	ical attention and special treatment needed
Notes for the doctor	Treat symptomatically.
Specific treatments	No special treatment required.

5. Fire-fighting measures	
Extinguishing media	
	The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Special hazards arising from the	e substance or mixture
Specific hazards	Containers can burst violently or explode when heated, due to excessive pressure build-up.
Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.
Advice for firefighters	
firefighting	Avoid breathing fire gases or vapors. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapors and protect men stopping the leak. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.
for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.
6. Accidental release measures	3
Personal precautions, protective	e equipment and emergency procedures
	No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage.
Environmental precautions	
•	Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).
Methods and material for contai	inment and cleaning up
	Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Reuse or recycle products wherever possible. Approach the spillage from upwind. Small Spillages: If the product is soluble in water, dilute the spillage with water and mop it up. Alternatively, or if it is not water-soluble, absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. Large Spillages: If leakage cannot be stopped, evacuate area. Flush spilled material into an effluent treatment plant, or proceed as follows. Contain and absorb spillage with sand, earth or other non-combustible material. Place waste in labeled, sealed containers. Clean contaminated objects and areas thoroughly, observing environmental regulations. The contaminated
	absorbent may pose the same hazard as the spilled material. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

7. Handling and storage

Precautions for safe handling			
Usage precautions	Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimize spills. Keep container tightly sealed when not in use. Avoid the formation of mists.		
Advice on general occupational hygiene	Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.		
Conditions for safe storage, ir	ncluding any incompatibilities		
Storage precautions	Store away from incompatible materials (see Section 10). Store in accordance with local regulations.		
Storage class	Chemical storage.		
Specific end uses(s)			
Specific end use(s)	The identified uses for this product are detailed in Section 1.		
8. Exposure Controls/persona	Il protection		
Control parameters			
Occupational exposure limits	Occupational exposure limits		
Cyclohexanone			
<b>U</b> 1 (	our TWA): OSHA 50 ppm 200 mg/m³		
Long-term exposure limit (8-hour TWA): ACGIH 20 ppm			
A3, Sk	Short-term exposure limit (15-minute): ACGIH 50 ppm A3. Sk		
OSHA = Occupational Safety and Health Administration. ACGIH = American Conference of Governmental Industrial Hygienists. A3 = Confirmed Animal Carcinogen with Unknown Relevance to Humans. Sk = Danger of cutaneous absorption.			
	Cyclohexanone (CAS: 108-94-1)		
Immediate danger to life 700 ppm and health			
Exposure controls			
Protective equipment			



Appropriate engineering controls

Eye/face protection

Provide adequate ventilation. Good general ventilation should be adequate to control worker exposure to airborne contaminants.

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with OSHA 1910.133. The following protection should be worn: Chemical splash goggles.

Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with OSHA 1910.138 and be demonstrated to be impervious to the chemical and resist degradation. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.
Other skin and body protection	Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.
Hygiene measures	Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Provide adequate ventilation. Large Spillages: If ventilation is inadequate, suitable respiratory protection must be worn.
Environmental exposure controls	Not regarded as dangerous for the environment.

9. Physical and Chemical Properties

#### Information on basic physical and chemical properties

Information on basic physical	and chemical properties
Appearance	Liquid.
Color	Colorless to pale yellow.
Odor	Not known.
Odor threshold	Not available.
рН	Not available.
Melting point	Not available.
Initial boiling point and range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Evaporation factor	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	Not available.
Other flammability	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Bulk density	1.04 kg/l
Solubility(ies)	Not available.

Partition coefficient	Not available.	
Auto-ignition temperature	Not available.	
Decomposition Temperature	Not available.	
Viscosity	5600 mPa s @ 23°C/73.4°F	
Explosive properties	Not considered to be explosive.	
Oxidizing properties	Does not meet the criteria for classification as oxidizing.	
10. Stability and reactivity		
Reactivity	See the other subsections of this section for further details.	
Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.	
Possibility of hazardous reactions	No potentially hazardous reactions known.	
Conditions to avoid	There are no known conditions that are likely to result in a hazardous situation.	
Materials to avoid	No specific material or group of materials is likely to react with the product to produce a hazardous situation.	
Hazardous decomposition products	Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.	
11. Toxicological information		
Information on toxicological eff	iects	
Toxicological effects	Not regarded as a health hazard under current legislation.	
Acute toxicity - oral		
Acute toxicity - oral Notes (oral LD <sub>50</sub> )	Based on available data the classification criteria are not met.	
Acute toxicity - oral Notes (oral LD∞) ATE oral (mg/kg)		
Acute toxicity - oral Notes (oral LD <sub>50</sub> )	Based on available data the classification criteria are not met.	
Acute toxicity - oral Notes (oral LD <sub>50</sub> ) ATE oral (mg/kg) Acute toxicity - dermal Notes (dermal LD <sub>50</sub> ) Acute toxicity - inhalation	Based on available data the classification criteria are not met. 35,033.63	
Acute toxicity - oral Notes (oral LD <sub>50</sub> ) ATE oral (mg/kg) Acute toxicity - dermal Notes (dermal LD <sub>50</sub> ) Acute toxicity - inhalation Notes (inhalation LC <sub>50</sub> )	Based on available data the classification criteria are not met. 35,033.63 Based on available data the classification criteria are not met.	
Acute toxicity - oral Notes (oral LD <sub>50</sub> ) ATE oral (mg/kg) Acute toxicity - dermal Notes (dermal LD <sub>50</sub> ) Acute toxicity - inhalation	Based on available data the classification criteria are not met. 35,033.63 Based on available data the classification criteria are not met. Based on available data the classification criteria are not met.	
Acute toxicity - oral Notes (oral LD <sub>50</sub> ) ATE oral (mg/kg) Acute toxicity - dermal Notes (dermal LD <sub>50</sub> ) Acute toxicity - inhalation Notes (inhalation LC <sub>50</sub> ) ATE inhalation (gases ppm) ATE inhalation (vapours mg/l) ATE inhalation (dusts/mists	Based on available data the classification criteria are not met. 35,033.63 Based on available data the classification criteria are not met. Based on available data the classification criteria are not met. 420,403.59	
Acute toxicity - oral Notes (oral LD <sub>50</sub> ) ATE oral (mg/kg) Acute toxicity - dermal Notes (dermal LD <sub>50</sub> ) Acute toxicity - inhalation Notes (inhalation LC <sub>50</sub> ) ATE inhalation (gases ppm) ATE inhalation (vapours mg/l)	Based on available data the classification criteria are not met. 35,033.63 Based on available data the classification criteria are not met. Based on available data the classification criteria are not met. 420,403.59 1,027.65	
Acute toxicity - oral Notes (oral LD <sub>50</sub> ) ATE oral (mg/kg) Acute toxicity - dermal Notes (dermal LD <sub>50</sub> ) Acute toxicity - inhalation Notes (inhalation LC <sub>50</sub> ) ATE inhalation (gases ppm) ATE inhalation (vapours mg/l) ATE inhalation (dusts/mists mg/l) Skin corrosion/irritation	<ul> <li>Based on available data the classification criteria are not met.</li> <li>35,033.63</li> <li>Based on available data the classification criteria are not met.</li> <li>Based on available data the classification criteria are not met.</li> <li>420,403.59</li> <li>1,027.65</li> <li>140.13</li> </ul>	

Skin sensitization	
Skin sensitization	Based on available data the classification criteria are not met.
Germ cell mutagenicity	Based on available data the classification criteria are not met.
Genotoxicity - in vitro	Based on available data the classification criteria are not met.
Carcinogenicity Carcinogenicity	Based on available data the classification criteria are not met.
IARC carcinogenicity	Contains a substance which may be potentially carcinogenic. IARC Group 3 Not classifiable as to its carcinogenicity to humans.
Reproductive toxicity	
Reproductive toxicity - fertility	Based on available data the classification criteria are not met.
Reproductive toxicity - development	Based on available data the classification criteria are not met.
Specific target organ toxicity -	
STOT - single exposure	Not classified as a specific target organ toxicant after a single exposure.
Specific target organ toxicity -	
STOT - repeated exposure	Not classified as a specific target organ toxicant after repeated exposure.
Aspiration hazard Aspiration hazard	Based on available data the classification criteria are not met.
General information	No specific health hazards known. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Prolonged inhalation of high concentrations may damage respiratory system.
Ingestion	Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.
Skin Contact	Prolonged contact may cause dryness of the skin.
Eye contact	May cause temporary eye irritation.
Route of entry	Ingestion Inhalation Skin and/or eye contact
Target Organs	No specific target organs known.
12. Ecological Information	
Ecotoxicity	Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.
Toxicity	Based on available data the classification criteria are not met.
Persistence and degradability	
Persistence and degradability	The degradability of the product is not known.
Bioaccumulative potential	
Bio-Accumulative Potential	No data available on bioaccumulation.
Partition coefficient	Not available.
Mobility in soil	

Mobility	No data available.	
Other adverse effects		
Other adverse effects	None known.	
13. Disposal considerations		
Waste treatment methods		
General information	The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.	
Disposal methods	Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste packaging should be collected for reuse or recycling. Incineration or landfill should only be considered when recycling is not feasible. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority.	
14. Transport information		
General	The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DOT).	
UN Number		
Not applicable.		
UN proper shipping name		
Not applicable.		
Transport hazard class(es)		
No transport warning sign req	uired.	
Transport labels No transport warning sign required.		
DOT transport labels No transport warning sign required.		
Packing group		
Not applicable.		
Environmental hazards		
Environmentally Hazardous Substance No.		
Special precautions for user		
Not applicable.		
DOT TIH Zone	Not applicable.	
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.	
15. Regulatory information		

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#### **US Federal Regulations**

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities None of the ingredients are listed or exempt.

#### CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

The following ingredients are listed or exempt:

Cyclohexanone Final CERCLA RQ: 5000(2270) pounds (Kilograms)

SARA Extremely Hazardous Substances EPCRA Reportable Quantities None of the ingredients are listed or exempt.

SARA 313 Emission Reporting None of the ingredients are listed or exempt.

#### CAA Accidental Release Prevention

None of the ingredients are listed or exempt.

FDA - Essential Chemical

None of the ingredients are listed or exempt.

**FDA - Precursor Chemical** None of the ingredients are listed or exempt.

SARA (311/312) Hazard Categories None of the ingredients are listed or exempt.

OSHA Highly Hazardous Chemicals

None of the ingredients are listed or exempt.

#### **US State Regulations**

California Proposition 65 Carcinogens and Reproductive Toxins None of the ingredients are listed or exempt.

#### California Air Toxics "Hot Spots" (A-I) None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-II) None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances The following ingredients are listed or exempt:

Cyclohexanone

Massachusetts "Right To Know" List The following ingredients are listed or exempt: *Cyclohexanone* 

Rhode Island "Right To Know" List The following ingredients are listed or exempt: *Cyclohexanone* 

Minnesota "Right To Know" List The following ingredients are listed or exempt:

Cyclohexanone

## New Jersey "Right To Know" List

The following ingredients are listed or exempt:

Cyclohexanone

#### Pennsylvania "Right To Know" List

The following ingredients are listed or exempt:

Cyclohexanone

#### Inventories

US - TSCA

The following ingredients are listed or exempt:

Cyclohexanone

2,4,6-Tris(dimethylaminomethyl)phenol

Didodecyl 3,3'-thiodipropionate

Thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate]

#### US - TSCA 12(b) Export Notification

None of the ingredients are listed or exempt.

# 16. Other information

Training advice	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
Issued by	Bethany Turner
Revision date	9/12/2017
Revision	0
SDS No.	2078
Hazard statements in full	H226 Flammable liquid and vapor. H302 Harmful if swallowed. H315 Causes skin irritation. H319 Causes serious eye irritation. H332 Harmful if inhaled.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.