

SAFETY DATA SHEET
THERMALLY CONDUCTIVE EPOXY 2220A

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

1. Identification**Product identifier****Product name** THERMALLY CONDUCTIVE EPOXY 2220A**Product number** ER2220A, 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 safety data sheet****Supplier** HK WENTWORTH-AMERICA
HK WENTWORTH-AMERICA
PO BOX 271347
FLOWER MOUND
TEXAS 75027
USA
info@hkw.co.uk**Emergency telephone number****Emergency telephone** +1 202 464 2554 (USA only)
+44 1235 239670**2. Hazard(s) Identification****Classification of the substance or mixture**

EC No 1272/2008

Physical hazards Not Classified**Health hazards** Skin Irrit. 2 - H315 Skin Sens. 1 - H317**Environmental hazards** Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410**Label elements****Pictogram****Signal word**

Warning

Hazard statementsH315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H410 Very toxic to aquatic life with long lasting effects.

THERMALLY CONDUCTIVE EPOXY 2220A**Precautionary statements**

P261 Avoid breathing vapor/ spray.
P264 Wash contaminated skin thoroughly after handling.
P272 Contaminated work clothing must not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302+P352 If on skin: Wash with plenty of water.
P321 Specific treatment (see medical advice on this label).
P332+P313 If skin irritation occurs: Get medical advice/ attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.
P501 Dispose of contents/ container in accordance with national regulations.

Contains

NEOPENTYL GLYCOL DIGLYCIDYL ETHER, EPOXY RESIN (Number average MW <= 700)

Other hazards

This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients**Mixtures**

ZINC OXIDE CAS number: 1314-13-2 M factor (Acute) = 1 M factor (Chronic) = 1	30-60%
Classification Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410	
NEOPENTYL GLYCOL DIGLYCIDYL ETHER CAS number: 17557-23-2	5-10%
Classification Skin Irrit. 2 - H315 Skin Sens. 1 - H317	
EPOXY RESIN (Number average MW <= 700) CAS number: 25068-38-6	5-10%
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 Aquatic Chronic 2 - H411	

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CYCLOHEXANONE	<1%
CAS number: 108-94-1	
Classification Flam. Liq. 3 - H226 Acute Tox. 4 - H302 Acute Tox. 4 - H332	

The Full Text for all Hazard Statements are Displayed in Section 16.

4. First-aid measures**Description of first aid measures**

General information	Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.
Inhalation	Remove affected person from source of contamination. 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. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.
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. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.
Skin Contact	It is important to remove the substance from the skin immediately. In the event of any sensitization symptoms developing, ensure further exposure is avoided. Remove contamination with soap and water or recognized skin cleansing agent. Get medical attention if symptoms are severe or persist after washing.
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. If it is suspected that volatile contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

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	May cause sensitization or allergic reactions in sensitive individuals. May cause irritation.
Skin contact	May cause skin sensitization or allergic reactions in sensitive individuals. Redness. Irritating to skin.
Eye contact	Irritating to eyes.

Indication of immediate medical attention and special treatment needed

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Notes for the doctor

Treat symptomatically. May cause sensitization or allergic reactions in sensitive individuals.

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 the 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. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

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 measures
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. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material. Avoid contact with skin and eyes.

Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground. 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 containment and cleaning up

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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. 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. Dangerous for the environment. Do not empty into drains. 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. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. 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. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

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, including any incompatibilities

Storage precautions

Store in accordance with local regulations. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Bund storage facilities to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent.

Storage class

Miscellaneous hazardous material storage.

Specific end uses(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

8. Exposure Controls/personal protection

Control parameters

Occupational exposure limits

ZINC OXIDE

Long-term exposure limit (8-hour TWA): ACGIH 2 mg/m³

Short-term exposure limit (15-minute): ACGIH 10 mg/m³

Long-term exposure limit (8-hour TWA): OSHA 5 mg/m³

Long-term exposure limit (8-hour TWA): OSHA 5 mg/m³

Long-term exposure limit (8-hour TWA): OSHA 15 mg/m³

fume
respirable fraction
total dust

CYCLOHEXANONE

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Long-term exposure limit (8-hour TWA): ACGIH 20 ppm

Short-term exposure limit (15-minute): ACGIH 50 ppm

A3, Sk

Long-term exposure limit (8-hour TWA): OSHA 50 ppm 200 mg/m³

ACGIH = American Conference of Governmental Industrial Hygienists.

OSHA = Occupational Safety and Health Administration.

A3 = Confirmed Animal Carcinogen with Unknown Relevance to Humans.

Sk = Danger of cutaneous absorption.

Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimize worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimize exposure.

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. Wear tight-fitting, chemical splash goggles or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

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. Preventive industrial medical examinations should be carried out. Warn cleaning personnel of any hazardous properties of the product.

Respiratory protection

Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134.

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Environmental exposure controls

Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Viscous liquid.
Color	Grey.
Odor	Not known.
Odor threshold	No information available.
pH	No information available.
Melting point	No information available.
Initial boiling point and range	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapor pressure	No information available.
Vapor density	No information available.
Relative density	2.38 @ 20°C/68°F
Bulk density	No information available.
Solubility(ies)	Insoluble in water.
Partition coefficient	No information available.
Auto-ignition temperature	No information available.
Decomposition Temperature	No information available.
Viscosity	95000 mPa s @ 20°C/68°F

10. Stability and reactivity

Reactivity	There are no known reactivity hazards associated with this product.
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.

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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 effects

Acute toxicity - oral

Notes (oral LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data Irritating.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

Respiratory sensitization

Respiratory sensitization Based on available data the classification criteria are not met.

Skin sensitization

Skin sensitization May cause skin sensitization or allergic reactions in sensitive individuals.

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

None of the ingredients are listed or exempt.

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 - single exposure

STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

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

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

May cause sensitization or allergic reactions in sensitive individuals. May cause irritation.

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Skin Contact	May cause skin sensitization or allergic reactions in sensitive individuals. Redness. Irritating to skin.
Eye contact	Irritating to eyes.
Acute and chronic health hazards	The product contains an epoxy resin. May cause sensitization or allergic reactions in sensitive individuals.
Route of entry	Ingestion Inhalation Skin and/or eye contact
Target Organs	No specific target organs known.
Medical considerations	Skin disorders and allergies.

12. Ecological Information

Ecotoxicity Dangerous for the environment if discharged into watercourses.

Toxicity

Toxicity Aquatic Acute 1 - H400 Very toxic to aquatic life. Aquatic Chronic 1 - H410 Very toxic to aquatic life with long lasting effects.

Ecological information on ingredients.

ZINC OXIDE

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

Chronic aquatic toxicity

NOEC 0.01 < NOEC ≤ 0.1

Degradability Non-rapidly degradable

M factor (Chronic) 1

EPOXY RESIN (Number average MW ≤ 700)

Acute toxicity - fish LC₅₀, 96 hours: 3.1 mg/l, Fish

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 1.4-1.7 mg/l, Daphnia magna

Acute toxicity - aquatic plants IC₅₀, 72 hours: 220 mg/l, Algae

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 No information available.

Mobility in soil

Mobility No data available.

Results of PBT and vPvB assessment

THERMALLY CONDUCTIVE EPOXY 2220A**Results of PBT and vPvB
assessment**

This product does not contain any substances classified as PBT or vPvB.

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. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods

Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

14. Transport information**General**

For US Domestic transportation this product is classified as a Consumer Commodity. For International transportation this product is classified as UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS EPOXY RESIN (Number average MW ≤ 700), ZINC OXIDE)

UN Number

UN No. (TDG)	3082
UN No. (IMDG)	3082
UN No. (ICAO)	3082
UN No. (DOT)	ID8000

UN proper shipping name

Proper shipping name (TDG) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS EPOXY RESIN (Number average MW ≤ 700), ZINC OXIDE)

Proper shipping name (IMDG) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS EPOXY RESIN (Number average MW ≤ 700), ZINC OXIDE)

Proper shipping name (ICAO) Consumer Commodity ID 8000, Class 9

Proper shipping name (DOT) CONSUMER COMMODITY

Proper Shipping Name (DOT) Consumer Commodity ORM-D

Transport hazard class(es)

DOT hazard class	9
DOT hazard label	9
TDG class	ORM-D (Other Regulated Material D).
TDG label(s)	No DOT label requirement noted

THERMALLY CONDUCTIVE EPOXY 2220A**IMDG Class** 9**ICAO class/division** 9**Transport labels****DOT transport labels****Packing group****TDG Packing Group** III**IMDG packing group** III**ICAO packing group** III**Environmental hazards****Environmentally Hazardous Substance****Special precautions for user**

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

EmS F-A, S-F

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

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

The following ingredients are listed or exempt:

ZINC OXIDE

1.0 %

THERMALLY CONDUCTIVE EPOXY 2220A

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:

AMORPHOUS SILICA

Known to the State of California to cause cancer.

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

The following ingredients are listed or exempt:

ZINC OXIDE

Present.

AMORPHOUS SILICA

Present.

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:

ZINC OXIDE

Present.

AMORPHOUS SILICA

Present.

CYCLOHEXANONE

Present.

Massachusetts "Right To Know" List

The following ingredients are listed or exempt:

ZINC OXIDE

Present.

AMORPHOUS SILICA

Present.

CYCLOHEXANONE

Present.

Rhode Island "Right To Know" List

The following ingredients are listed or exempt:

THERMALLY CONDUCTIVE EPOXY 2220A*ZINC OXIDE*

Present.

CYCLOHEXANONE

Present.

Minnesota "Right To Know" List

The following ingredients are listed or exempt:

ZINC OXIDE

Present.

AMORPHOUS SILICA

Present.

CYCLOHEXANONE

Present.

New Jersey "Right To Know" List

The following ingredients are listed or exempt:

ZINC OXIDE

Present.

CYCLOHEXANONE

Present.

Pennsylvania "Right To Know" List

The following ingredients are listed or exempt:

ZINC OXIDE

Present.

AMORPHOUS SILICA

Present.

CYCLOHEXANONE

Present.

Inventories**US - TSCA**

The following ingredients are listed or exempt:

NEOPENTYL GLYCOL DIGLYCIDYL ETHER

Present.

Aluminium Hydroxide

Present.

ZINC OXIDE

Present.

AMORPHOUS SILICA

Present.

EPOXY RESIN (Number average MW <= 700)

Present.

CYCLOHEXANONE

Present.

US - TSCA 12(b) Export Notification

None of the ingredients are listed or exempt.

16. Other information

THERMALLY CONDUCTIVE EPOXY 2220A

Training advice	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
Issued by	Bethan Massey
Revision date	10/3/2016
Revision	5
SDS No.	13493
Hazard statements in full	H226 Flammable liquid and vapor. H302 Harmful if swallowed. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H332 Harmful if inhaled. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. H411 Toxic to aquatic life with long lasting effects.
NFPA - health hazard	No health hazards specifically noted for fire situations. (0)
NFPA - flammability hazard	Burns only if pre-heated. (1)
NFPA - instability hazard	Normally stable. (0)
NFPA - special hazard	N/A.
ACA HMIS Health rating.	Minimal hazard. (0)
ACA HMIS Flammability rating.	Burns only if pre-heated. (1)
ACA HMIS Physical hazard rating.	Normally stable. (0)
ACA HMIS Personal protection rating.	B

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
THERMALLY CONDUCTIVE EPOXY 2220B

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

1. Identification**Product identifier****Product name** THERMALLY CONDUCTIVE EPOXY 2220B**Product number** ER2220B, 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 safety data sheet****Supplier** HK WENTWORTH-AMERICA
HK WENTWORTH-AMERICA
PO BOX 271347
FLOWER MOUND
TEXAS 75027
USA
info@hkw.co.uk**Emergency telephone number****Emergency telephone** +1 202 464 2554 (USA only)
+44 1235 239670**2. Hazard(s) identification****Classification of the substance or mixture****EC No 1272/2008****Physical hazards** Not Classified**Health hazards** Acute Tox. 4 - H302 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317**Environmental hazards** Aquatic Chronic 3 - H412**Label elements****Pictogram****Signal word**

Danger

Hazard statementsH302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.

THERMALLY CONDUCTIVE EPOXY 2220B

Precautionary statements

P260 Do not breathe vapor/ spray.
 P261 Avoid breathing vapor/ spray.
 P264 Wash contaminated skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P272 Contaminated work clothing must not be allowed out of the workplace.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 P301+P312 If swallowed: Call a poison center/ doctor if you feel unwell.
 P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
 P302+P352 If on skin: Wash with plenty of water.
 P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
 P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.
 P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 Immediately call a poison center/ doctor.
 P321 Specific treatment (see medical advice on this label).
 P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.
 P362+P364 Take off contaminated clothing and wash it before reuse.
 P363 Wash contaminated clothing before reuse.
 P405 Store locked up.
 P501 Dispose of contents/ container in accordance with national regulations.

Contains

ISOPHORONEDIAMINE, Salicylic acid

Other hazards

This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients

Mixtures

ISOPHORONEDIAMINE CAS number: 2855-13-2	60-100%
Classification Acute Tox. 4 - H302 Acute Tox. 4 - H312 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Aquatic Chronic 3 - H412	
Salicylic acid CAS number: 69-72-7	1-5%
Classification Acute Tox. 4 - H302 Eye Dam. 1 - H318	

THERMALLY CONDUCTIVE EPOXY 2220B**XYLENE****<1%**

CAS number: 1330-20-7

Classification

Flam. Liq. 3 - H226

Acute Tox. 4 - H312

Acute Tox. 4 - H332

Skin Irrit. 2 - H315

The Full Text for all Hazard Statements are Displayed in Section 16.

4. First-aid measures**Description of first aid measures****General information**

Get medical attention immediately. Show this Safety Data Sheet to the medical personnel. Chemical burns must be treated by a physician.

Inhalation

Remove affected person from source of contamination. 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. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.

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. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.

Skin Contact

It is important to remove the substance from the skin immediately. Take off immediately all contaminated clothing. Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes and get medical attention. Chemical burns must be treated by a physician.

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. If it is suspected that volatile contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

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

A single exposure may cause the following adverse effects: Corrosive to the respiratory tract. Symptoms following overexposure may include the following: Severe irritation of nose and throat.

Ingestion

May cause sensitization or allergic reactions in sensitive individuals. May cause chemical burns in mouth, esophagus and stomach. Symptoms following overexposure may include the following: Severe stomach pain. Nausea, vomiting.

THERMALLY CONDUCTIVE EPOXY 2220B

Skin contact	May cause skin sensitization or allergic reactions in sensitive individuals. Causes severe burns. Symptoms following overexposure may include the following: Pain or irritation. Redness. Blistering may occur.
Eye contact	Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.

Indication of immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically. May cause sensitization or allergic reactions in sensitive individuals.
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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.
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Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
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Special hazards arising from the substance or mixture

Specific hazards	Containers can burst violently or explode when heated, due to excessive pressure build-up. This product is toxic. Severe corrosive hazard. Water used for fire extinguishing, which has been in contact with the product, may be corrosive.
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Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Very toxic or corrosive gases or vapors.
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Advice for firefighters

Protective actions during firefighting	Avoid breathing fire gases or vapors. Evacuate area. Keep upwind to avoid inhalation of gases, vapors, fumes and smoke. 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. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.
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Special protective equipment for firefighters	Regular protection may not be safe. Wear chemical protective suit. 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.
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6. Accidental release measures

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. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material. Avoid inhalation of dust and vapors. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes. Avoid contact with contaminated tools and objects.
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Environmental precautions

Environmental precautions	Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).
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THERMALLY CONDUCTIVE EPOXY 2220B

Methods and material for containment 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. This product is corrosive. Provide adequate ventilation. 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. Dangerous for the environment. Do not empty into drains. 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. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. 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. This product is corrosive. Immediate first aid is imperative. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

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, including any incompatibilities

Storage precautions

Store in accordance with local regulations. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Bund storage facilities to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent.

Storage class

Toxic storage.

Specific end uses(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

8. Exposure Controls/personal protection

Control parameters

Occupational exposure limits

XYLENE

Long-term exposure limit (8-hour TWA): OSHA 100 ppm 435 mg/m³

Long-term exposure limit (8-hour TWA): ACGIH 100 ppm 434 mg/m³

Short-term exposure limit (15-minute): ACGIH 150 ppm 651 mg/m³

A4

THERMALLY CONDUCTIVE EPOXY 2220B

OSHA = Occupational Safety and Health Administration.
ACGIH = American Conference of Governmental Industrial Hygienists.
A4 = Not Classifiable as a Human Carcinogen.

Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimize worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimize exposure.

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. Wear tight-fitting, chemical splash goggles or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

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/manufacture, 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. Preventive industrial medical examinations should be carried out. Warn cleaning personnel of any hazardous properties of the product.

Respiratory protection

Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134.

Environmental exposure controls

Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

THERMALLY CONDUCTIVE EPOXY 2220B

Appearance	Liquid.
Color	Black.
Odor	Not known.
Odor threshold	No information available.
pH	No information available.
Melting point	No information available.
Initial boiling point and range	247°C/476.6°F @
Flash point	112°C/233.6°F CC (Closed cup).
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	: 1.2
Other flammability	No information available.
Vapor pressure	No information available.
Vapor density	No information available.
Relative density	0.930 @ 20°C/68°F
Bulk density	No information available.
Solubility(ies)	Miscible with water.
Partition coefficient	No information available.
Auto-ignition temperature	380°C/716°F
Decomposition Temperature	No information available.
Viscosity	25 mPa s @ 23°C/73.4°F

10. Stability and reactivity

Reactivity	There are no known reactivity hazards associated with this product.
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: Corrosive gases or vapors.

11. Toxicological information

THERMALLY CONDUCTIVE EPOXY 2220B

Information on toxicological effects

Acute toxicity - oral

Notes (oral LD₅₀) Acute Tox. 4 - H302 Harmful if swallowed.

ATE oral (mg/kg) 1,047.06

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

ATE dermal (mg/kg) 2,080.35

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data Skin Corr. 1B - H314 Causes severe burns.

Serious eye damage/irritation

Serious eye damage/irritation Eye Dam. 1 - H318 Corrosive to skin. Corrosivity to eyes is assumed.

Respiratory sensitization

Respiratory sensitization Based on available data the classification criteria are not met.

Skin sensitization

Skin sensitization May cause skin sensitization or allergic reactions in sensitive individuals.

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 - single exposure

STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

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

The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation

Corrosive to the respiratory tract. Symptoms following overexposure may include the following: Severe irritation of nose and throat.

Ingestion

May cause sensitization or allergic reactions in sensitive individuals. May cause chemical burns in mouth, esophagus and stomach. Symptoms following overexposure may include the following: Severe stomach pain. Nausea, vomiting.

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Skin Contact	May cause skin sensitization or allergic reactions in sensitive individuals. Causes severe burns. Symptoms following overexposure may include the following: Pain or irritation. Redness. Blistering may occur.
Eye contact	Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.
Acute and chronic health hazards	Prolonged inhalation of high concentrations may damage respiratory system.
Route of entry	Ingestion Inhalation Skin and/or eye contact
Target Organs	No specific target organs known.
Medical considerations	Skin disorders and allergies.

Toxicological information on ingredients.**ISOPHORONEDIAMINE****Acute toxicity - oral**

Acute toxicity oral (LD₅₀
mg/kg) 1,030.0

Species Rat

ATE oral (mg/kg) 1,030.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀
mg/kg) 2,000.0

Species Rabbit

ATE dermal (mg/kg) 2,000.0

Acute toxicity - inhalation

Acute toxicity inhalation
(LC₅₀ dust/mist mg/l) 5.01

Species Rat

ATE inhalation
(dusts/mists mg/l) 5.01

Salicylic acid**Acute toxicity - oral**

Acute toxicity oral (LD₅₀
mg/kg) 891.0

Species Rat

ATE oral (mg/kg) 891.0

XYLENE**Acute toxicity - dermal**

Acute toxicity dermal (LD₅₀
mg/kg) 12,126.0

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Species	Rabbit
ATE dermal (mg/kg)	1,100.0
<u>Carcinogenicity</u>	
IARC carcinogenicity	IARC Group 3 Not classifiable as to its carcinogenicity to humans.
Inhalation	Harmful by inhalation. Upper respiratory irritation. Central nervous system depression. Vapours may cause drowsiness and dizziness.
Ingestion	Swallowing concentrated chemical may cause severe internal injury. May cause nausea, headache, dizziness and intoxication. Diarrhea.
Skin Contact	Harmful in contact with skin. Irritating to skin.
Eye contact	May cause severe eye irritation.
Target Organs	Central nervous system Liver Kidneys

12. Ecological Information

Ecotoxicity Dangerous for the environment if discharged into watercourses.

Ecological information on ingredients.**XYLENE**

Ecotoxicity The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.

Toxicity

Toxicity Aquatic Chronic 3 - H412 Harmful to aquatic life with long lasting effects.

Acute toxicity - fish LC₅₀, 96 hours: mg/l, Fish

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: mg/l, Daphnia magna

Acute toxicity - aquatic plants IC₅₀, 72 hours: mg/l, Algae

Ecological information on ingredients.**XYLENE**

Acute toxicity - fish LC₅₀, 96 hours: mg/l, Fish

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 1.0 mg/l, Daphnia magna
EC₅₀, 48 hours: mg/l, Daphnia magna

Acute toxicity - aquatic plants IC₅₀, 72 hours: 2.2 mg/l,

Persistence and degradability

Persistence and degradability The degradability of the product is not known.

Ecological information on ingredients.**XYLENE**

THERMALLY CONDUCTIVE EPOXY 2220B**Persistence and degradability**

The product is biodegradable.

Bioaccumulative potential**Bio-Accumulative Potential**

No data available on bioaccumulation.

Partition coefficient

No information available.

Ecological information on ingredients.**XYLENE****Bio-Accumulative Potential** BCF: 25.9,**Partition coefficient** : 3.2**Mobility in soil****Mobility**

No data available.

Ecological information on ingredients.**XYLENE****Mobility**

The product is insoluble in water.

Results of PBT and vPvB assessment**Results of PBT and vPvB assessment**

This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.**XYLENE****Results of PBT and vPvB assessment**

This substance is not classified as PBT or vPvB according to current EU criteria.

Other adverse effects**Other adverse effects**

None known.

Ecological information on ingredients.**XYLENE****Other adverse effects**

Not determined.

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. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

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Disposal methods

Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

14. Transport information

General

For US Domestic transportation this product is classified as a Consumer Commodity. For International transportation this product is classified as UN 2735 POLYAMINES, LIQUID, CORROSIVE, N.O.S (CONTAINS ISOPHORONEDIAMINE)

UN Number

UN No. (TDG)	2735
UN No. (IMDG)	2735
UN No. (ICAO)	2735
UN No. (DOT)	ID8000

UN proper shipping name

Proper shipping name (TDG) POLYAMINES, LIQUID, CORROSIVE, N.O.S (CONTAINS ISOPHORONEDIAMINE)

Proper shipping name (IMDG) POLYAMINES, LIQUID, CORROSIVE, N.O.S (CONTAINS ISOPHORONEDIAMINE)

Proper shipping name (ICAO) Consumer Commodity ID 8000, Class 9

Proper shipping name (DOT) CONSUMER COMMODITY

Proper Shipping Name (DOT) Consumer Commodity ORM-D

Transport hazard class(es)

DOT hazard class	9
DOT hazard label	9
TDG class	ORM-D (Other Regulated Material D).
TDG label(s)	No DOT label requirement noted
IMDG Class	8
ICAO class/division	8

Transport labels



DOT transport labels



Packing group

TDG Packing Group	II
IMDG packing group	II
ICAO packing group	II

Environmental hazards

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Environmentally Hazardous Substance

No.

Special precautions for user

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

EmS

F-A, S-B

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:

XYLENE

Final CERCLA RQ: 100(45.4) pounds (Kilograms)

SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None of the ingredients are listed or exempt.

SARA 313 Emission Reporting

The following ingredients are listed or exempt:

XYLENE

0.1 %

1.0 %

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)

The following ingredients are listed or exempt:

THERMALLY CONDUCTIVE EPOXY 2220B*XYLENE*

Present.

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:

XYLENE

Present.

Massachusetts "Right To Know" List

The following ingredients are listed or exempt:

XYLENE

Present.

Rhode Island "Right To Know" List

The following ingredients are listed or exempt:

XYLENE

Present.

Minnesota "Right To Know" List

The following ingredients are listed or exempt:

XYLENE

Present.

New Jersey "Right To Know" List

The following ingredients are listed or exempt:

ISOPHORONEDIAMINE

Present.

XYLENE

Present.

Pennsylvania "Right To Know" List

The following ingredients are listed or exempt:

XYLENE

Present.

Inventories**US - TSCA**

The following ingredients are listed or exempt:

Salicylic acid

Present.

ISOPHORONEDIAMINE

Present.

XYLENE

Present.

US - TSCA 12(b) Export Notification

None of the ingredients are listed or exempt.

16. Other information

THERMALLY CONDUCTIVE EPOXY 2220B

Training advice	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
Issued by	Bethan Massey
Revision date	10/3/2016
Revision	4
SDS No.	13393
Hazard statements in full	H226 Flammable liquid and vapor. H302 Harmful if swallowed. H312 Harmful in contact with skin. H314 Causes severe skin burns and eye damage. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H318 Causes serious eye damage. H332 Harmful if inhaled. H412 Harmful to aquatic life with long lasting effects.
NFPA - health hazard	Extremely hazardous, serious injury. (3)
NFPA - flammability hazard	Burns only if pre-heated. (1)
NFPA - instability hazard	Normally stable. (0)
NFPA - special hazard	COR
ACA HMIS Health rating.	Serious hazard. (3)
ACA HMIS Flammability rating.	Burns only if pre-heated. (1)
ACA HMIS Physical hazard rating.	Normally stable. (0)
ACA HMIS Personal protection rating.	C

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.

