

SAFETY DATA SHEET



According to Regulation (EC) No 1907/2006, Annex II, as amended.

COMMISSION REGULATION (EU) 2015/830 of 28 May 2015.

Version: 1.00

Revision Date: First issue, 12.12.2019

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1. Company and Product Identification

1.1 Product Identifiers

Product Name Graphene Enhanced Electrical Prepreg
Product Number GA-ELC
UN 3082 MWCNT

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

Identified Uses Conductive composite components
ES4: Industrial Uses
ES5: Professional Uses

1.3 Details of the supplier of the safety data sheet

Company Haydale Limited
Clos Fferws, Parc Hendre,
Capel Hendre,
Ammanford,
Carmarthenshire,
SA18 3BL
UNITED KINGDOM

Telephone +44 (0)1269 842946

Fax +44 (0)1269 831062

E-mail address info@haydale.com

1.4 Emergency telephone number

Emergency # +44 (0)1269 842946 Mon – Fri between 09:00 – 16:00 hours

2 Hazards Identification

Classification (EC 1272/2008)

Physical and Chemical Hazards Not classified

Human health Skin Sens. 1B - H317
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319

Environment Aquatic Chronic 2 - H411
Aquatic Chronic 3 - H412

Classification (1999/45/EEC) Xi;R36/38
R43
N; R51/53

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Human health May cause sensitisation by skin contact.

Environment Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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2.2. Label elements (Pictogram)

Label in Accordance With (EC) No. 1272/2008 and 'California Proposition 65'



Signal Word

Warning

Additional Label Description

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
TETRAGLYCIDYL METHYLENEDIANILINE BOUND IN CARBON FIBRE
WEAVE MATRIX

California Proposition 65



Reaction product of Bisphenol A and epichlorohydrin, which material classification are listed in California Proposition 65. Both 25068-38-6 and 1675-54-3 can be used to describe the epoxy resin which is produced through the reaction of bisphenol A and epichlorohydrin.

WARNING: This product contains chemicals known to the State of California to cause cancer, and birth defects or other reproductive harm.

ADVERTENCIA: Este producto contiene productos químicos reconocidos por el estado de California que provocan cáncer, defectos de nacimiento u otros daños reproductivos.

Hazard Statements

H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

Precautionary Statements

P233	Keep container tightly closed.
P272	Contaminated work clothing should not be allowed out of the workplace.
P264	Wash contaminated skin thoroughly after handling.
P302+352	IF ON SKIN: Wash with plenty of soap and water.
P303+361+353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312	Call a POISON CENTRE or doctor/physician if you feel unwell.
P332+313	If skin irritation occurs: Get medical advice/attention.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
P363	Wash contaminated clothing before reuse.
P403+235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container in accordance with local regulations
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.
P333+P313	If skin irritation or rash occurs: Get medical advice/ attention.
P337+P313	If eye irritation persists: Get medical advice/ attention.
P501	Dispose of contents/ container in accordance with national regulations.

Contains
reaction product:

N,N,N',N'-TETRAGLYCIDYL-4,4'-DIAMINO DIPHENYL METHANE,
bisphenol-A-(epichlorohydrin)

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Supplementary Precautionary Statements

P233	Keep container tightly closed.
P272	Contaminated work clothing should not be allowed out of the workplace.
P264	Wash contaminated skin thoroughly after handling.
P302+352	IF ON SKIN: Wash with plenty of soap and water.
P303+361+353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351 +P358	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTRE or doctor/physician if you feel unwell.
P332+313	If skin irritation occurs: Get medical advice/attention.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
P363	Wash contaminated clothing before reuse.
P403+235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container in accordance with local regulations

Composition and Information on Ingredients

Mixtures

Reaction product: 4,4'-Methylenedianiline, oligomeric reaction products with 1-chloror-2,3-epoxypropane;		50 – 80 %
CAS-No.: 28390-91-1	EC No.: 500-062-3	
Classification (EC 1272/2008) Skin Sens. 1 - H317 Aquatic Chronic 2. - H411	Classification (67/548/EEC) R43 N; R51/53	
N,N,N',N'-TETRAGLYCIDYL-4,4'-DIAMINO DIPHENYL METHANE		25 – 50 %
CAS-No.: 28768-32-3	EC No.: 249-204-3	
Classification (EC 1272/2008) Skin Sens. 1 - H317 Aquatic Chronic 2. - H411	Classification (67/548/EEC) R43 N; R51/53	
Carbon Nanotubes (MWCNT)		1 - 5 %
CAS-No.: N/A	EC No.: 936-414-1	
Classification (EC 1272/2008) Not Classified, Substance with a workplace exposure limit, see Section 8		
Graphite (in the form of graphene)		1 - 5 %
CAS-No.: 7782-42-5	EC No.: 231-955-3	
Classification (EC 1272/2008) Not Classified, Substance with a workplace exposure limit, see Section 8		

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Reaction product: bisphenol-A-(epichlorhydrin)		1 - 5 %
CAS-No.: 25068-38-6	EC No.: 500-033-5	
Classification (EC 1272/2008) Skin Irrit. 1 – H315 Skin Sens. 1 - H317 Eye Irrit. 2 - H319 Aquatic Chronic 2 – H412	Classification (67/548/EEC) Xi; R36/38 R43 N; R51/53	

See Section 16 for the full text of the R- phrases declared above.
See Section 16 for the full text of the H statements declared above.

Composition Comments

Catalysed resin and MWCNT mixture impregnated to textile weave.

California Proposition 65

Reaction product of Bisphenol A and epichlorohydrin, which material classification are listed in California Proposition 65. Both 25068-38-6 and 1675-54-3 can be used to describe the epoxy resin which is produced through the reaction of bisphenol A and epichlorohydrin.

WARNING: This product contains chemicals known to the State of California to cause cancer, and birth defects or other reproductive harm.

ADVERTENCIA: Este producto contiene productos químicos reconocidos por el estado de California que provocan cáncer, defectos de nacimiento u otros daños reproductivos.

3 First Aid Measures

3.1 Description of first aid measures

Skin Contact	Use appropriate hand lotion to prevent defatting and cracking of skin. Immediately remove contaminated clothing. Wash off promptly and flush contaminated skin with water. Continue to rinse for at least 10 minutes. Wash clothing before reuse.
Eye Contact	Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for 10 minutes. Get medical attention promptly if symptoms occur after washing.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If unconscious, place on the side in the recovery position and ensure breathing can take place, get medical attention immediately. If respiratory problems, use artificial respiration/oxygen. Get medical attention if any discomfort continues.
Ingestion	Immediately rinse mouth and drink plenty of water or milk. Keep person under observation. Do not induce vomiting. If vomiting occurs, keep head low. Transport immediately to hospital and bring along these instructions. Medical staff must contact poison centre.
General Information	General first aid, rest, warmth and fresh air. Do not give victim anything to drink if they are unconscious. Get medical attention if any discomfort continues. Contaminated disposable PPE must go to hazardous waste after use. Wash contaminated workwear and/or clothing before reuse. Seek medical attention if symptoms persist or any discomfort continues. Take this Safety Data Sheet to show the medical personnel.
Protection of First Aiders	First aid personnel should wear appropriate protective equipment during any rescue.

3.2 Most important symptoms and effects, both acute and delayed

General information The severity of the symptoms described will vary dependent on the concentration and the length or duration of exposure.

Potential acute health effects

Inhalation: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.
Skin contact: May cause an allergic skin reaction.
Eye contact: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact: No specific data.
Inhalation: No specific data.
Skin Contact: Adverse symptoms may include the following: irritation, redness
Ingestion: No specific data.

3.3 Indication of any immediate medical attention and special treatment needed

Notes for the doctor Treat symptomatically. May cause sensitisation or allergic reactions in sensitive individuals.

4 Firefighting Measures

4.1 Extinguishing media

Fire Hazards The product is not flammable. Burning may produce irritation, toxic and obnoxious fumes. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Extinguishing Media Fire can be extinguished using: Foam, carbon dioxide or dry powder. Dry chemicals, sand, dolomite etc. Do not use water jet as an extinguisher as this will spread the fire.

Firefighting Instructions If trained and competent to do so; use pressurised air mask if product is involved in a fire. Cool containers exposed to flames with water continuously until well after the fire is out. Keep run-off water out of sewers and water sources. Protective equipment for fire-fighters, self-contained breathing apparatus and full protective clothing must be worn in case of fire.

4.2 Special hazards arising from the substance or mixture

Specific hazards Decomposition products may cause respiratory irritation.
Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.

4.3 Advice for firefighters

Protective actions During Firefighting Avoid breathing fire gases or vapours. 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 continuously with water until well after the fire is out. 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. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

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5 Accidental Release Measures

5.1 Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Avoid contact with skin and eyes.

5.2 Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment.

5.3 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. Collect and place in suitable waste disposal containers and seal securely. Wash thoroughly after cleaning up. For waste disposal, see Section 13.

5.4 Reference to other sections

Reference to other sections For additional information on personal protection, see Section 8.

For additional information on health hazards, see Section 11.

For additional information on ecological hazards, see Section 12.

For additional information on waste disposal, see Section 13.

6 Handling and Storage

6.1 Precautions for safe handling

Usage precautions Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Do not handle until all safety precautions have been read and understood.

Advice on general occupational hygiene Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse.

6.2 Conditions for safe storage, including any incompatibilities

Storage precautions Store away from incompatible materials (see Section 10). Keep only in the original container. Keep in original packaging, refrigerate at -18°C. Keep upright to protect contents from impact or crushing damage.

Storage class Miscellaneous hazardous material storage.

6.3 Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

7 Exposure Controls and Personal Protection

Derived effect levels

Product/ingredient name	Type	Exposure	Value	Population	Effects
4,4'-Methylenedianiline, oligomeric reaction products with 1-chloro-2,3-epoxypropane	DNEL	Long Term Dermal	0.5 mg/kg bw/day	Workers	Systemic

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Predicted effect concentrations

Product/ingredient name	Type	Compartment Detail	Value	Method Detail
4,4'-Methylenedianiline, oligomeric reaction products with 1-chloro-2,3-epoxypropane	PNEC	Fresh water	0.0047 mg/l	Assessment Factors
	PNEC	Marine	0.00047 mg/l	Assessment Factors
	PNEC	PNEC intermittent	0.047 mg/l	Assessment Factors
	PNEC	Fresh water sediment	0.0172 mg/kg	Equilibrium Partitioning
	PNEC	Marine water sediment	0.00172 mg/kg	Equilibrium Partitioning
	PNEC	Soil	0.0115 mg/kg	Equilibrium Partitioning
	PNEC	Sewage treatment plant	1000 mg/l	Assessment Factors

Product/ingredient name	Type	Compartment Detail	Value	Method Detail
Carbon nanotubes (CNWT)	DNEL	Long term exposure	0.5 mg/l	
	Comment: No official Occupational Exposure Limit has yet been established			

Product/ingredient name	Type	Compartment Detail	Value	Method Detail
Graphite	WEL	Inhalable dust	10 mg/m ³	Long term (UK)
	WEL	Respirable dust	4 mg/m ³	Long term (UK)
	DNEL	Inhalational	1.2 mg/m ³	Industry, long term, local effects
	DNEL	Inhalational	0.3 mg/m ³	Consumer, long term, local effects
	DNEL	Oral (bw/day)	813 mg/m ³	Consumer, long term, systemic effects

California Proposition 65

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8 Control Parameters

8.1 Ingredient comments

Exposure limits for ingredient(s) see Section 8 - table above.

8.2 Exposure controls

Protective equipment



Engineering controls

Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients, where applicable.

Process conditions

Provide eye wash station.

Eye/face protection

Wear protective glasses to prevent contact with the eyes.

Hand protection

Wear protective gloves. 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 European Standard EN374.

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Butyl rubber, EVAL; Long term (BTT >480 min)
 Neoprene, Nitrile Rubber; Short term/ splash (10 min < BTT < 480 min)
 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	May cause skin sensitisation or allergic reactions in sensitive individuals. Wear appropriate clothing to prevent repeated or prolonged skin contact.
Hygiene measures	Wash after use and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.
Respiratory protection	Where determined by safety risk assessment to be necessary; respiratory protective equipment must be suitable for its intended use and is obtained from a reputable supplier and 'CE' marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.
Environment exposure controls	Keep product sealed in original packaging when not in use. Emissions from work process equipment should be checked to ensure they comply with the requirements of workplace and 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

9.1 Information on basic physical and chemical properties

Appearance	Fibrous solid.
Colour	Amber or Black.
Odour	Almost odourless.
Melting point	No information available.
Flash point	Closed cup: 264.381°C
Flammability (solid, gas)	No specific test data are available.
Vapour pressure	No information available.
Bulk density	~ 1210 kg/m ³
Solubility(ies)	No specific test data are available.
Decomposition	Decomposition may produce carbon dioxide, carbon monoxide and nitrogen oxides.
Comments	Information declared as "Not available" or "Not applicable" is not considered to be relevant to the implementation of the proper control measures.

9.2 Other information

Other information No other information available.

10 Stability and Reactivity

10.1 Reactivity

Reactivity See the other subsections of this section for further details.

10.2 Chemical stability

Stability Stable under normal and anticipated storage and handling conditions.

10.3 Possibility of hazardous reactions

Possibility of hazardous Reactions May occur under certain conditions or storage or use.

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10.4 Conditions to avoid

Conditions to avoid No specific data.

10.5 Incompatible materials

Materials to avoid Strong acids, strong bases, strong oxidising agents.

10.6 Hazardous decomposition products

Hazardous Decomposition Products Decomposition may produce carbon dioxide, carbon monoxide and nitrogen oxides.

11 Toxicological Information

Acute Toxicity Data

Product/ingredient name	Test	Result	Route	Species
4,4'-Methylenedianiline, oligomeric reaction products with 1-chloro-2,3-epoxypropane	LC0 Inhalation Vapour	>30 mg/m ³	4 Hrs	Rat
	LD50 Dermal	>3000 mg/kg		Rabbit
	LD50 Oral	>5000 mg/kg		Mouse
Carbon nanotubes (MWCNT)	LD50 Oral	>5000 mg/kg		Rat
	LC50 inhalation	>2000 mg/m ³		Rat
Graphite (bound in resin)	LD50 Oral	>2000 mg/kg		Rat
	LC50 inhalation	2000 mg/m ³	4 hrs	Rat

Irritation/Corrosion

Product/ingredient name	Test	Species	Route	Result
4,4'-Methylenedianiline, oligomeric reaction products with 1-chloro-2,3-epoxypropane	OECD 404 Acute Dermal Irritation/ Corrosion	Rabbit	Skin	Mild Irritant
	Unknown guidelines	Rabbit	Eyes	Mild Irritant
Carbon nanotubes (MWCNT)	Inhalation, repeated dose, 5 days, rat, LOAEC: 2 mg/m ³			
	Inhalation, repeated dose, 90 days, rat, LOAEC: 0.1 mg/m ³			
	Target organ: lung (multifocal granulomatous inflammation)			
	Oral, repeated dose, 28 days, rat, NOAEL: 0.5 mg/kg			
Graphite (bound in epoxy resin)	OECD 404 Acute Dermal Irritation/ Corrosion	Rabbit	Skin	No Skin irritation
	OECD 405 Acute Eye Irritation/ Corrosion	Rabbit	Eyes	No eye irritation

Sensitiser

Product/ingredient name	Test	Species	Route	Result
4,4'-Methylenedianiline, oligomeric reaction products with 1-chloro-2,3-epoxypropane	OECD 406 Skin Sensitisation	Guinea Pig	Skin	Sensitising

Mutagenicity

Product/ingredient name	Test	Result
4,4'-Methylenedianiline, oligomeric reaction products with 1-chloro-2,3-epoxypropane	OECD 471 Bacterial Reverse Mutation Test	Positive
	OECD 476 In Vitro Mammalian Cell Gene Mutation Test	Positive
	OECD 474 Mammalian Erythrocyte Micronucleus Test	Negative
	OECD 483 Mammalian Spermatogonial Chromosome Aberration Test	Negative
	OECD Screening Test	Equivocal

Conclusion/Summary The weight of the scientific evidence indicates that this material is non-genotoxic.

Teratogenicity

Product/ingredient name	Test	Species	Result
4,4'-Methylenedianiline, oligomeric reaction products with 1-chloro-2,3-epoxypropane	OECD 414 Prenatal Development Toxicity Study	Rat	90 mg/kg NOAEL

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Potential acute health effects:

Inhalation	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure
Ingestion	No known significant effects or critical hazards
Skin contact	May cause an allergic skin reaction
Eye contact	No known significant effects or critical hazards

Potential chronic health effects

Product/ingredient name	Test	Target Organ	Result
4,4'-Methylenedianiline, oligomeric reaction products with 1-chloro-2,3-epoxypropane	OECD 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	-	50 mg/kg/d NOAEL

General: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

12 Ecological Information**Toxicity**

Product/ingredient name	Test (Species)	Value	Comment
4,4'-Methylenedianiline, oligomeric reaction products with 1-chloro-2,3-epoxypropane	EC50 (algae)	>11 mg/l	72 hr
	EC50 (daphnia)	4.7 mg/l	48 hr
	IC50 (bacteria)	>10000 mg/l	24 hr
	LC50 (fish)	6-8 mg/l	96 hr
	EC10 (algae)	2.4 mg/l	72 hr
Carbon Nanotubes (MWCNT)	EC59 (fish)	100 mg/l	14 days
	EC50 (aquatic invertebrates)	100 mg/l	48 hr
	EC50 (aquatic algae)	134 mg/l	72 hr
Graphite	LC50 (fish)	100 mg/l	96 hr
	NOEC (fish)	100 mg/l	4 days
	EC50 (aquatic invertebrates)	100 mg/l	48 hr
	EC50 (aquatic algae)	100 mg/l	72 hr

Persistence and degradability

Product/ingredient name	Test	Period	Result
4,4'-Methylenedianiline, oligomeric reaction products with 1-chloro-2,3-epoxypropane	OECD 301B Ready Biodegradability – CO2 Evolution Test	29 days	9-10 %

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
4,4'-Methylenedianiline, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Fresh water days	-	-

Product/ingredient name	LogPow	BCF	Potential
4,4'-Methylenedianiline, oligomeric reaction products with 1-chloro-2,3-epoxypropane	2.12	-	Low

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12.1 Toxicity

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

12.2 Persistence and degradability

Persistence and degradability OECD 301B Ready Biodegradability – CO2 Evolution
Test 29 days 9-10%

12.3 Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

12.4 Mobility in soil

Mobility Soil/water partition coefficient <18

12.5 Results of PBT and vPvB assessment

PBT and vPvB results No data available.

12.6 Other adverse effects

Other adverse effects None known.

Further Information No environmental risk is anticipated providing this product is handled and disposed of with due care and consideration.

13 Disposal Considerations

13.1 Waste treatment methods

General information The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its packaging must be disposed of responsibly. When handling waste, the safety precautions applying to handling of the product should be considered. Empty 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, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

14 Transport Information

General The product is covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1 UN number

UN number UN 3082 MWCNT

UN No. (ADR/RID/ADN) 3082

UN No. (IMDG) 3082

UN No. (ICAO) 3082

14.2 UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
TETRAGLYCIDYL METHYLENEDIANILINE

14.3 Transport hazard class(es)



ADR/RID/ADN Class	9
ADR Label No.	9
IMDG Class	9
ICAO Class/Division	9

14.4 Packing group

ADR/RID/ADN Packing group	III
IMDG Packing group	III
ICAO Packing group	III

14.5 Environmental hazards Environmentally hazardous substance/marine pollutant - **No.**

14.6 Special precautions for user Not applicable.

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

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

15 Regulatory Information

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

National regulations Health and Safety at Work etc. Act 1974 (as amended).

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment

Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].

EH40/2005 Workplace exposure limits.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

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WARNING: This product contains chemicals known to the State of California to cause cancer, and birth defects or other reproductive harm.

Known Carcinogen(s): Epichlorohydrin [CAS 106-89-8]

Known Reproductive Toxin(s): Epichlorohydrin [CAS 106-89-8], Bisphenol A [CAS 80-05-7]

ADVERTENCIA: Este producto contiene productos químicos reconocidos por el estado de California que provocan cáncer, defectos de nacimiento u otros daños reproductivos.

For more information: www.P65Warnings.ca.gov

15.2 Chemical safety assessment

No chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS

None of the ingredients are listed or exempt.

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Abbreviations and acronyms used in the safety data sheet	<p>ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.</p> <p>ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.</p> <p>RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.</p> <p>IATA: International Air Transport Association.</p> <p>ICAO-TI: Technical Instructions for the Safe Transport of Dangerous Goods by Air.</p> <p>IMDG: International Maritime Dangerous Goods.</p> <p>CAS: Chemical Abstracts Service.</p> <p>ATE: Acute Toxicity Estimate.</p> <p>LC₅₀: Lethal Concentration to 50 % of a test population.</p> <p>LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).</p> <p>EC₅₀: 50% of maximal Effective Concentration.</p> <p>PBT: Persistent, Bioaccumulative and Toxic substance.</p>
Classification abbreviations and acronyms	<p>Eye Irrit. = Eye irritation</p> <p>Skin Irrit. = Skin irritation</p> <p>Skin Sens. = Skin sensitisation</p> <p>Aquatic Chronic = Hazardous to the aquatic environment (chronic)</p>
Risk Phrases in Full R43 R51/53	<p>May cause sensitisation by skin contact.</p> <p>Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</p>
Hazard Statements in Full H315 H317 H319 H411 H412	<p>Causes skin irritation</p> <p>May cause an allergic skin reaction</p> <p>Causes serious eye irritation</p> <p>Toxic to aquatic life with long lasting effects</p> <p>Harmful to aquatic life with long lasting effects</p>
General information	Only trained personnel should use this material.
Classification procedures according to Regulation (EC) 1272/2008	<p>Skin Irrit. 2 - H315: Eye Irrit. 2 - H319: Skin Sens. 1 - H317: Calculation method.</p> <p>Aquatic Chronic 3 - H412: Calculation method.</p>
Training advice	Only trained personnel should use this material.
Additional Information	Further information on this product can be found on the Haydale website.
Revision Number	1.00
Revision Date	First issue, 12/12/2019
Issued by	HSEQ Manager
SDS Number	GA-ELC
SDS Status	Approved
Revision Summary	-

The content supplied in this safety data sheet ("Information") supersedes all previous versions supplied

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