Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the REACH Regulation (1907/2006), as amended for GB.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
3M™ Scotch-Weld™ EC-2214 HT/NF

Product Identification Numbers
UU-0080-1648-5

7100116496

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

Identified uses
Structural adhesive.

1.3. Details of the supplier of the safety data sheet

Address:	3M United Kingdom PLC, 3M Centre, Cain Road, Bracknell, Berkshire, RG12 8HT.
Telephone:	+44 (0)1344 858 000
E Mail:	tox.uk@mmm.com
Website:	www.3M.com/uk

1.4. Emergency telephone number
+44 (0)1344 858 000

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
The retained CLP Regulation (EU) No 1272/2008 as amended for Great Britain

The health and environmental classifications of this material have been derived using the calculation method, except in cases where test data are available or the physical form impacts classification. Classification(s) based on test data or physical form are noted below, if applicable.

CLASSIFICATION:

Self-Heating Substance or Mixture, Category 1 - Self-heat. 1; H251
Skin Corrosion/Irritation, Category 2 - Skin Irrit. 2; H315
Serious Eye Damage/Eye Irritation, Category 2 - Eye Irrit. 2; H319
Skin Sensitization, Category 1 - Skin Sens. 1; H317
Carcinogenicity, Category 2 - Carc. 2; H351
Hazardous to the Aquatic Environment (Chronic), Category 2 - Aquatic Chronic 2; H411

For full text of H phrases, see Section 16.

2.2. Label elements
The retained CLP Regulation (EU) No 1272/2008 as amended for Great Britain

SIGNAL WORD
DANGER.

Symbols
GHS02 (Flame) |GHS07 (Exclamation mark) |GHS08 (Health Hazard) |GHS09 (Environment) |

Pictograms

Ingredient	CAS Nbr	EC No.	% by Wt
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	216-823-5	30 - 60
Epoxy resin	28064-14-4		5 - 10
NICKEL CHLORIDE IMIIDAZOLE	15751-00-5	239-841-5	< 3

HAZARD STATEMENTS:

H251	Self-heating; may catch fire.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H411	Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P273	Avoid release to the environment.
P280K	Wear protective gloves and respiratory protection.

Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.

Storage:

P407	Maintain air gap between stacks or pallets.
P413	Store bulk masses greater than 1 kg/2.2 lbs at temperatures not exceeding 5C/40F.

5% of the mixture consists of components of unknown acute oral toxicity.

Contains 3% of components with unknown hazards to the aquatic environment.

The epoxy resin is resistant to reaction with water and the aluminum is embedded in the resin so Water-react. 2, H261 is not applicable.

2.3. Other hazards

None known.
This material does not contain any substances that are assessed to be a PBT or vPvB

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

Ingredient	Identifier(s)	%	Classification according to Regulation (EC) No. 1272/2008 [CLP], as amended for GB
bis-[4-(2,3-epoxipropoxi)phenyl]propane	(CAS-No.) 1675-54-3 (EC-No.) 216-823-5	30 - 60	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411
ALUMINUM POWDER	(CAS-No.) 7429-90-5 (EC-No.) 231-072-3	30 - 60	Flam. Sol. 1, H228 Water-react. 2, H261 Nota T
Silicon	(CAS-No.) 7440-21-3 (EC-No.) 231-130-8	< 10	Substance with a national occupational exposure limit
Epoxy resin	(CAS-No.) 28064-14-4	5 - 10	Skin Sens. 1, H317 Aquatic Chronic 2, H411
NICKEL CHLORIDE IMIIDAZOLE	(CAS-No.) 15751-00-5 (EC-No.) 239-841-5	< 3	Skin Sens. 1, H317 Carc. 2, H351 Aquatic Acute 1, H400,M=10 Aquatic Chronic 1, H410,M=10
Calcium carbonate	(CAS-No.) 471-34-1 (EC-No.) 207-439-9	< 3	Substance with a national occupational exposure limit
MAGNESIUM POWDER (PYROPHORIC) (F; R:15-17)	(CAS-No.) 7439-95-4 (EC-No.) 231-104-6	< 3	Pyr. Sol. 1, H250 Water-react. 1, H260 Nota T
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	(CAS-No.) 67762-90-7	< 3	Substance with a national occupational exposure limit
copper flakes (coated with aliphatic acid)	(CAS-No.) 7440-50-8 (EC-No.) 231-159-6	< 0.1	Aquatic Chronic 1, H410,M=1

Please see section 16 for the full text of any H statements referred to in this section

Specific Concentration Limits

Ingredient	Identifier(s)	Specific Concentration Limits
bis-[4-(2,3-epoxipropoxi)phenyl]propane	(CAS-No.) 1675-54-3 (EC-No.) 216-823-5	(C >= 5%) Skin Irrit. 2, H315 (C >= 5%) Eye Irrit. 2, H319

For information on ingredient occupational exposure limits or PBT or vPvB status, see sections 8 and 12 of this SDS

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Remove person to fresh air. If you feel unwell, get medical attention.

Skin contact
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye contact
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If swallowed
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
The most important symptoms and effects based on the GB CLP classification include:
Irritation to the skin (localized redness, swelling, itching, and dryness). Allergic skin reaction (redness, swelling, blistering, and itching). Serious irritation to the eyes (significant redness, swelling, pain, tearing, and impaired vision).

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Extinguishing media
In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture
Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

Substance	Condition
Aldehydes.	During combustion.
Hydrocarbons.	During combustion.
Carbon monoxide	During combustion.
Carbon dioxide.	During combustion.
Hydrogen Chloride	During combustion.
Irritant vapours or gases.	During combustion.
Ketones.	During combustion.

5.3. Advice for fire-fighters
Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Eliminate all ignition sources if safe to do so. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapours, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

6.4. Reference to other sections
Refer to Section 8 and Section 13 for more information

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (eg. gloves, respirators…) as required.

7.2. Conditions for safe storage including any incompatibilities
Keep cool. Protect from sunlight. Store away from heat. Store at temperatures not exceeding 5C/40F. Store bulk masses greater than 1 kg/2.2 lbs at temperatures not exceeding -20C/-4F. Maintain air gap between stacks/pallets. Store away from acids. Store away from strong bases. Store away from oxidising agents. Store away from other materials. Store away from amines.

7.3. Specific end use(s)
See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Nickel, water-soluble inorganic compounds, except nickel carbonyl	15751-00-5	UK HSC	TWA(as Ni):0.1 mg/m3	SKIN; Resp Sensitizer
Limestone	471-34-1	UK HSC	TWA(respirable):4 mg/m3;TWA(as respirable	

			dust):4 mg/m3;TWA(Inhalable):10 mg/m3;TWA(as inhalable dust):10 mg/m3
Silicon dioxide	67762-90-7	UK HSC	TWA(as respirable dust):2.4 mg/m3;TWA(as inhalable dust):6 mg/m3
ALUMINUM POWDER	7429-90-5	UK HSC	TWA(as respirable dust):4 mg/m3;TWA(as inhalable dust):10 mg/m3
Silicon	7440-21-3	UK HSC	TWA(as respirable dust):4 mg/m3;TWA(as inhalable dust):10 mg/m3
copper flakes (coated with aliphatic acid)	7440-50-8	UK HSC	TWA(as fume):0.2 mg/m3;TWA(as Cu, inhalable dusts/mists):1 mg/m3;STEL(as Cu, inhalable dusts/mists):2 mg/m3

UK HSC : UK Health and Safety Commission
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

Biological limit values
No biological limit values exist for any of the components listed in Section 3 of this safety data sheet.

8.2. Exposure controls

8.2.1. Engineering controls
Provide appropriate local exhaust ventilation for cutting, grinding, sanding or machining. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment. Provide ventilated enclosure for heat curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Safety glasses with side shields.
Indirect vented goggles.

Applicable Norms/Standards
Use eye protection conforming to EN 166

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
Gloves made from the following material(s) are recommended:

Material	Thickness (mm)	Breakthrough Time
Polymer laminate	No data available	No data available

Applicable Norms/Standards
Use gloves tested to EN 374

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapours and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

Applicable Norms/Standards
Use a respirator conforming to EN 140 or EN 136: filter types A & P

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid.
Specific Physical Form:	Paste
Colour	Off-White
Odor	Epoxy
Odour threshold	*No data available.*
Melting point/freezing point	*No data available.*
Boiling point/boiling range	>=200 ºC
Flammability (solid, gas)	Self-Heating: Category 1.
Flammable Limits(LEL)	*No data available.*
Flammable Limits(UEL)	*No data available.*
Flash point	>=150 ºC [*Test Method:*Closed Cup]
Autoignition temperature	*No data available.*
Decomposition temperature	*No data available.*
pH	*substance/mixture is non-soluble (in water)*
Kinematic Viscosity	503,145 mm²/sec
Water solubility	Nil
Solubility- non-water	*No data available.*
Partition coefficient: n-octanol/water	*No data available.*
Vapour pressure	*Not applicable.*
Density	1.65 g/ml
Relative density	1.59 - 1.66 [*Ref Std:*WATER=1]
Relative Vapour Density	*Not applicable.*

9.2. Other information

9.2.2 Other safety characteristics

EU Volatile Organic Compounds	*No data available.*
Evaporation rate	*Not applicable.*
Percent volatile	0 %

SECTION 10: Stability and reactivity

10.1 Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section

10.2 Chemical stability
Stable.

10.3 Possibility of hazardous reactions
Hazardous polymerisation may occur. Exothermic reaction may occur if the product is heated .

10.4 Conditions to avoid
Avoid curing large quantities of material to prevent a premature reaction (exotherm) with production of intense heat and smoke.
Heat.

10.5 Incompatible materials
Amines.
Strong acids.
Strong bases.
Strong oxidising agents.

10.6 Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not agree with the material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 11 are based on UN GHS calculation rules and classifications derived from 3M assessments.

11.1. Information on hazard classes as defined in the retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain.

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation
Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. May cause additional health effects (see below).

Skin contact
Mild Skin Irritation: Signs/symptoms may include localised redness, swelling, itching, and dryness. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching. May cause additional health effects (see below).

Eye contact
Moderate eye irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion
Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea. May cause additional health effects (see below).

Additional Health Effects:

Carcinogenicity:
Contains a chemical or chemicals which can cause cancer.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
ALUMINUM POWDER	Dermal		LD50 estimated to be > 5,000 mg/kg
ALUMINUM POWDER	Ingestion		LD50 estimated to be > 5,000 mg/kg
ALUMINUM POWDER	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.888 mg/l
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Dermal	Rat	LD50 > 1,600 mg/kg
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Ingestion	Rat	LD50 > 1,000 mg/kg
Silicon	Dermal	Rabbit	LD50 > 5,000 mg/kg
Silicon	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 2.08 mg/l
Silicon	Ingestion	Rat	LD50 3,160 mg/kg
Epoxy resin	Dermal	Rabbit	LD50 > 6,000 mg/kg
Epoxy resin	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 1.7 mg/l
Epoxy resin	Ingestion	Rat	LD50 > 4,000 mg/kg
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	Ingestion	Rat	LD50 > 5,110 mg/kg
Calcium carbonate	Dermal	Rat	LD50 > 2,000 mg/kg
Calcium carbonate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 3 mg/l
Calcium carbonate	Ingestion	Rat	LD50 6,450 mg/kg
copper flakes (coated with aliphatic acid)	Dermal	Rat	LD50 > 2,000 mg/kg
copper flakes (coated with aliphatic acid)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.11 mg/l
copper flakes (coated with aliphatic acid)	Ingestion	Rat	LD50 > 2,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
ALUMINUM POWDER	Rabbit	No significant irritation
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Rabbit	Mild irritant
Silicon	Rabbit	No significant irritation
Epoxy resin	Rabbit	Minimal irritation
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	Rabbit	No significant irritation
Calcium carbonate	Rabbit	No significant irritation
copper flakes (coated with aliphatic acid)	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value

ALUMINUM POWDER	Rabbit	No significant irritation
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Rabbit	Moderate irritant
Silicon	Rabbit	Mild irritant
Epoxy resin	Rabbit	Mild irritant
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	Rabbit	No significant irritation
Calcium carbonate	Rabbit	No significant irritation
copper flakes (coated with aliphatic acid)	Rabbit	Mild irritant

Skin Sensitisation

Name	Species	Value
ALUMINUM POWDER	Guinea pig	Not classified
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Human and animal	Sensitising
Epoxy resin	Human and animal	Sensitising
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	Human and animal	Not classified
NICKEL CHLORIDE IMIIDAZOLE	similar compounds	Sensitising

Respiratory Sensitisation

Name	Species	Value
ALUMINUM POWDER	Human	Not classified
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Human	Not classified

Germ Cell Mutagenicity

Name	Route	Value
ALUMINUM POWDER	In Vitro	Not mutagenic
bis-[4-(2,3-epoxipropoxi)phenyl]propane	In vivo	Not mutagenic
bis-[4-(2,3-epoxipropoxi)phenyl]propane	In Vitro	Some positive data exist, but the data are not sufficient for classification
Epoxy resin	In Vitro	Some positive data exist, but the data are not sufficient for classification
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
NICKEL CHLORIDE IMIIDAZOLE	Not specified.	similar compounds	Carcinogenic.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Ingestion	Not classified for male reproduction	Rat	NOAEL 750	2 generation

				mg/kg/day	
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesis
Calcium carbonate	Ingestion	Not classified for development	Rat	NOAEL 625 mg/kg/day	premating & during gestation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Calcium carbonate	Inhalation	respiratory system	Not classified	Rat	NOAEL 0.812 mg/l	90 minutes

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
ALUMINUM POWDER	Inhalation	nervous system | respiratory system	Not classified	Human	NOAEL Not available	occupational exposure
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
bis-[4-(2,3-epoxipropoxi)phenyl]propane	Ingestion	auditory system | heart | endocrine system | hematopoietic system | liver | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
Calcium carbonate	Inhalation	respiratory system	Not classified	Human	NOAEL Not available	occupational exposure

Aspiration Hazard
For the component/components, either no data is currently available or the data is not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

11.2. Information on other hazards

This material does not contain any substances that are assessed to be an endocrine disruptor for human health.

SECTION 12: Ecological information

The information below may not agree with the material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 12 are based on UN GHS calculation rules and classifications derived from 3M assessments.

12.1. Toxicity

No product test data available.

Material	CAS #	Organism	Type	Exposure	Test endpoint	Test result
ALUMINUM POWDER	7429-90-5	Fish	Experimental	96 hours	No tox obs at lmt of water sol	>100 mg/l
ALUMINUM POWDER	7429-90-5	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	>100 mg/l
ALUMINUM POWDER	7429-90-5	Water flea	Experimental	48 hours	No tox obs at lmt of water sol	>100 mg/l
ALUMINUM POWDER	7429-90-5	Green algae	Experimental	72 hours	No tox obs at lmt of water sol	100 mg/l
ALUMINUM POWDER	7429-90-5	Water flea	Experimental	21 days	NOEC	0.076 mg/l
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Activated sludge	Analogous Compound	3 hours	IC50	>100 mg/l
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Rainbow trout	Estimated	96 hours	LC50	2 mg/l
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Water flea	Estimated	48 hours	EC50	1.8 mg/l
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Green algae	Experimental	72 hours	ErC50	>11 mg/l
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Green algae	Experimental	72 hours	NOEC	4.2 mg/l
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Water flea	Experimental	21 days	NOEC	0.3 mg/l
Epoxy resin	28064-14-4	Golden Orfe	Experimental	96 hours	LC50	5.7 mg/l
Epoxy resin	28064-14-4	Water flea	Experimental	48 hours	EC50	3.5 mg/l
Silicon	7440-21-3	Green algae	Estimated	72 hours	EC50	250 mg/l
Silicon	7440-21-3	Green algae	Estimated	72 hours	EC10	228 mg/l
Calcium carbonate	471-34-1	Green algae	Experimental	72 hours	EC50	>100 mg/l
Calcium carbonate	471-34-1	Rainbow trout	Experimental	96 hours	LC50	>100 mg/l
Calcium carbonate	471-34-1	Water flea	Experimental	48 hours	EC50	>100 mg/l
Calcium carbonate	471-34-1	Green algae	Experimental	72 hours	EC10	100 mg/l
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	67762-90-7	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
MAGNESIUM POWDER (PYROPHORIC) (F; R:15-17)	7439-95-4	Activated sludge	Estimated	3 hours	EC10	>108 mg/l
MAGNESIUM POWDER (PYROPHORIC)	7439-95-4	Fathead minnow	Estimated	96 hours	LC50	541 mg/l

(F; R:15-17)						
MAGNESIUM POWDER (PYROPHORIC) (F; R:15-17)	7439-95-4	Water flea	Estimated	48 hours	LC50	140 mg/l
MAGNESIUM POWDER (PYROPHORIC) (F; R:15-17)	7439-95-4	Green algae	Estimated	72 hours	NOEC	>=12 mg/l
NICKEL CHLORIDE IMIIDAZOLE	15751-00-5	Activated sludge	Analogous Compound	30 minutes	EC50	>1,000 mg/l
NICKEL CHLORIDE IMIIDAZOLE	15751-00-5	Bacteria	Analogous Compound	17 hours	EC50	1,175 mg/l
NICKEL CHLORIDE IMIIDAZOLE	15751-00-5	Common Carp	Experimental	96 hours	LC50	12 mg/l
NICKEL CHLORIDE IMIIDAZOLE	15751-00-5	Green algae	Experimental	96 hours	EC50	0.06 mg/l
NICKEL CHLORIDE IMIIDAZOLE	15751-00-5	Water flea	Experimental	48 hours	EC50	0.12 mg/l
copper flakes (coated with aliphatic acid)	7440-50-8	Green algae	Analogous Compound	72 hours	ErC50	0.1049 mg/l
copper flakes (coated with aliphatic acid)	7440-50-8	Water flea	Analogous Compound	48 hours	EC50	0.0126 mg/l
copper flakes (coated with aliphatic acid)	7440-50-8	Zebra Fish	Analogous Compound	96 hours	LC50	0.0117 mg/l
copper flakes (coated with aliphatic acid)	7440-50-8	Fathead minnow	Analogous Compound	32 days	EC10	0.0059 mg/l
copper flakes (coated with aliphatic acid)	7440-50-8	Green algae	Analogous Compound	N/A	NOEC	0.022 mg/l
copper flakes (coated with aliphatic acid)	7440-50-8	Water flea	Analogous Compound	7 days	NOEC	0.004 mg/l
copper flakes (coated with aliphatic acid)	7440-50-8	Activated sludge	Analogous Compound	N/A	EC50	7 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
ALUMINUM POWDER	7429-90-5	Data not availbl-insufficient	N/A	N/A	N/A	N/A
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Experimental Biodegradation	28 days	BOD	5 %BOD/COD	OECD 301F - Manometric respirometry
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	117 hours (t 1/2)	OECD 111 Hydrolysis func of pH
Epoxy resin	28064-14-4	Laboratory Biodegradation	28 days	CO2 evolution	10-16 %CO2 evolution/THCO2 evolution (does not pass 10-day window)	OECD 301B - Modified sturm or CO2
Silicon	7440-21-3	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Calcium carbonate	471-34-1	Data not availbl-insufficient	N/A	N/A	N/A	N/A

Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	67762-90-7	Data not availbl-insufficient	N/A	N/A	N/A	N/A
MAGNESIUM POWDER (PYROPHORIC) (F; R:15-17)	7439-95-4	Data not availbl-insufficient	N/A	N/A	N/A	N/A
NICKEL CHLORIDE IMIIDAZOLE	15751-00-5	Data not availbl-insufficient	N/A	N/A	N/A	N/A
copper flakes (coated with aliphatic acid)	7440-50-8	Data not availbl-insufficient	N/A	N/A	N/A	N/A

12.3 : Bioaccumulative potential

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
ALUMINUM POWDER	7429-90-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Experimental Bioconcentration		Log Kow	3.242	OECD 117 log Kow HPLC method
Epoxy resin	28064-14-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Silicon	7440-21-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Calcium carbonate	471-34-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	67762-90-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
MAGNESIUM POWDER (PYROPHORIC) (F; R:15-17)	7439-95-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
NICKEL CHLORIDE IMIIDAZOLE	15751-00-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
copper flakes (coated with aliphatic acid)	7440-50-8	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

12.4. Mobility in soil

Material	Cas No.	Test type	Study Type	Test result	Protocol
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Modeled Mobility in Soil	Koc	450 l/kg	Episuite™

12.5. Results of the PBT and vPvB assessment

This material does not contain any substances that are assessed to be a PBT or vPvB

12.6. Other adverse effects

This material does not contain any substances that are assessed to be an endocrine disruptor for environmental effects

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

The coding of a waste stream is based on the application of the product by the consumer. Since this is out of the control of 3M, no waste code(s) for products after use will be provided. Please refer to the European Waste Code (EWC - 2000/532/EC and amendments) to assign the correct waste code to your waste stream. Ensure national and/or regional regulations are complied with and always use a licensed waste contractor.

EU waste code (product as sold)

08 04 09*	Waste adhesives and sealants containing organic solvents or other dangerous substances
20 01 27*	Paint, inks, adhesives and resins containing dangerous substances

SECTION 14: Transportation information

	Ground Transport (ADR)	Air Transport (IATA)	Marine Transport (IMDG)
14.1 UN number	UN3088	UN3088	UN3088
14.2 UN proper shipping name	SELF-HEATING SOLID, ORGANIC, N.O.S.(NICKEL SALT)	SELF-HEATING SOLID, ORGANIC, N.O.S.(NICKEL SALT)	SELF-HEATING SOLID, ORGANIC, N.O.S.(NICKEL SALT)
14.3 Transport hazard class(es)	4.2	4.2	4.2
14.4 Packing group	II	II	II
14.5 Environmental hazards	Not Environmentally Hazardous	Not applicable	Not a Marine Pollutant
14.6 Special precautions for user	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.
14.7 Transport in bulk according to Annex II of Marpol 73/78 and IBC Code	No data available.	No data available.	No data available.
Control Temperature	No data available.	No data available.	No data available.
Emergency Temperature	No data available.	No data available.	No data available.
ADR Classification	S2	Not applicable.	Not applicable.

Code			
IMDG Segregation Code	Not applicable.	Not applicable.	NONE

Please contact the address or phone number listed on the first page of the SDS for additional information on the transport/shipment of the material by rail (RID) or inland waterways (ADN).

SECTION 15: Regulatory information

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

Carcinogenicity

Ingredient	CAS Nbr	Classification	Regulation
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3	Gr. 3: Not classifiable	International Agency for Research on Cancer
NICKEL CHLORIDE IMIIDAZOLE	15751-00-5	Carc. 2	3M classified according to the retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain

Restrictions on the manufacture, placing on the market and use:
The following substance(s) contained in this product is/are subject to Annex XVII of regulation (EC) 1907/2006, as amended for GB, with regard to restrictions on the manufacture, placing on the market and use when present in certain dangerous conditions. Users of this product are required to comply with the restrictions placed upon it by the aforementioned provision.

Ingredient	CAS Nbr
bis-[4-(2,3-epoxipropoxi)phenyl]propane	1675-54-3

Restriction status: listed in UK REACH Annex XVII
Restricted uses: See Annex XVII to Regulation (EC) No 1907/2006 as amended for Great Britain for Conditions of Restriction

Global inventory status
Contact 3M for more information.

COMAH Regulation, SI 2015/483
Seveso hazard categories, Annex 1, Part 1

Hazard Categories	Qualifying quantity (tonnes) for the application of	
	Lower-tier requirements	Upper-tier requirements
E2 Hazardous to the Aquatic environment	200	500

Seveso named dangerous substances, Annex 1, Part 2

Dangerous Substances	Identifier(s)	Qualifying quantity (tonnes) for the application of	
		Lower-tier requirements	Upper-tier requirements
ALUMINUM POWDER	7429-90-5	50	200
copper flakes (coated with aliphatic acid)	7440-50-8	50	200
MAGNESIUM POWDER (PYROPHORIC) (F; R:15-17)	7439-95-4	50	200

Regulation (EU) No 649/2012, as amended for GB
No chemicals listed

15.2. Chemical Safety Assessment
A chemical safety assessment has not been carried out for this substance/mixture in accordance with Regulation (EC) No 1907/2006, as amended for GB.

SECTION 16: Other information

List of relevant H statements

H228	Flammable solid.
H250	Catches fire spontaneously if exposed to air.
H251	Self-heating; may catch fire.
H260	In contact with water releases flammable gases which may ignite spontaneously.
H261	In contact with water releases flammable gas.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H351	Suspected of causing cancer.
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.

Revision information:
GB Section 15: Carcinogenicity information information was modified.
Label: CLP Classification information was modified.
Label: CLP Environmental Hazard Statements information was modified.
Section 3: Composition/ Information of ingredients table information was modified.
Section 7: Conditions safe storage information was modified.
Section 12: Component ecotoxicity information information was modified.
Section 15: Seveso Hazard Category Text information was modified.

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3M SDSs for Great Britain are available at www.3M.com/uk
For Northern Ireland documents, please contact your 3M representative to obtain a copy.