



Safety Data Sheet

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Transportation version number:			

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

IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

3M Aerospace Sealant AC-770 B-1

Product Identification Numbers

70-0052-0442-8

7000048242

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

Identified uses

Sealant.

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

This product is a kit or a multipart product which consists of multiple, independently packaged components. A Safety Data Sheet for each of these components is included. Please do not separate the component Safety Data Sheets from this cover page. The document numbers of the MSDSs for components of this product are:

30-2815-6, 30-2816-4

TRANSPORTATION INFORMATION

Refer to section 14 of the kit components for transport information.

KIT LABEL

2.1. Classification of the substance or mixture

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

CLASSIFICATION:

Acute Toxicity, Category 4 - Acute Tox. 4; H302

Skin Corrosion/Irritation, Category 2 - Skin Irrit. 2; H315

Serious Eye Damage/Eye Irritation, Category 2 - Eye Irrit. 2; H319

Reproductive Toxicity, Category 1A - Repr. 1A; H360D

Specific Target Organ Toxicity-Repeated Exposure, Category 2 - STOT RE 2; H373

Hazardous to the Aquatic Environment (Acute), Category 1 - Aquatic Acute 1; H400

Hazardous to the Aquatic Environment (Chronic), Category 1 - Aquatic Chronic 1; H410

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

GHS07 (Exclamation mark) | GHS08 (Health Hazard) | GHS09 (Environment) |

Pictograms



Contains:

manganese dioxide; lead powder; [particle diameter < 1 mm]

HAZARD STATEMENTS:

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H360D	May damage the unborn child.

H373	May cause damage to organs through prolonged or repeated exposure: nervous system.
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H410	Very toxic to aquatic life with long lasting effects.
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PRECAUTIONARY STATEMENTS

Prevention:

P201	Obtain special instructions before use.
P260G	Do not breathe vapours or dust.
P273	Avoid release to the environment.
P280F	Wear 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.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

For containers not exceeding 125 ml the following Hazard and Precautionary statements may be used:

<=125 ml Hazard statements

H360D	May damage the unborn child.
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<=125 ml Precautionary statements

Prevention:

P201	Obtain special instructions before use.
P260G	Do not breathe vapours or dust.
P280F	Wear respiratory protection.

Response:

P308 + P313	IF exposed or concerned: Get medical advice/attention.
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SUPPLEMENTAL INFORMATION:

Supplemental Hazard Statements:

EUH211	Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.
	.

EUH208	Contains Formaldehyde, oligomeric reaction products with phenol. bis-[4-(2,3-epoxipropoxy)phenyl]propane. formaldehyde. May produce an allergic reaction.
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Supplemental Precautionary Statements:

Restricted to professional users.

Refer to Safety Data Sheet for component % unknown values (www.3M.com/msds).

Revision information:

GB Kit Information: CLP Percent Unknown information was added.
GB Label: CLP Ingredients - kit components information was added.
Kit Information: CLP Target Organ Hazard Statement information was deleted.
Kit Information: Contains statement for sensitisers information was added.
Kit Information: Contains statement for sensitisers information was deleted.
Label: CLP Classification information was modified.
Label: CLP Ingredients - kit components information was deleted.
Label: CLP Percent Unknown - Kit information was deleted.
Label: CLP Precautionary - Disposal information was deleted.
Label: CLP Precautionary - Prevention information was modified.
Label: CLP Supplemental Hazard Statements information was added.
Label: CLP Target Organ Hazard Statement information was added.
Section 2: <125ml Precautionary - Prevention information was modified.



Safety Data Sheet

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Document group: 30-2815-6
Revision date: 17/12/2025

Version number: 6.00
Supersedes date: 26/11/2025

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 Aerospace Sealant AC-770 B-1 Base

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

Identified uses

Sealant

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: ner-productstewardship@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:

This material is not classified as hazardous according to Regulation (EC) No. 1272/2008, as amended for Great Britain, on classification, labelling, and packaging of substances and mixtures.

2.2. Label elements

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

Not applicable

SUPPLEMENTAL INFORMATION:**Supplemental Hazard Statements:**

EUH210 Safety data sheet available on request.

EUH208 Contains Formaldehyde, oligomeric reaction products with phenol. | bis-[4-(2,3-epoxipropoxy)phenyl]propane. | formaldehyde. May produce an allergic reaction.

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
Propane, 1,2,3-trichloro-, polymer with 1,1'-[methylenebis(oxy)]bis[2-chloroethane] and sodium sulfide (Na ₂ (S _x)), reduced	(CAS-No.) 68611-50-7	70 - 75	Substance not classified as hazardous
Calcium carbonate	(CAS-No.) 471-34-1 (EC-No.) 207-439-9	15 - 20	Substance with a national occupational exposure limit
Titanium dioxide	(CAS-No.) 13463-67-7 (EC-No.) 236-675-5	< 5	Substance with a national occupational exposure limit
Formaldehyde, oligomeric reaction products with phenol	(CAS-No.) 9003-35-4 (EC-No.) 500-005-2	< 1	Skin Sens. 1, H317
bis-[4-(2,3-epoxipropoxy)phenyl]propane	(CAS-No.) 1675-54-3 (EC-No.) 216-823-5	< 1	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411
formaldehyde	(CAS-No.) 50-00-0 (EC-No.) 200-001-8	< 0.05	Acute Tox. 2, H330 EUH071 Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Muta. 2, H341 Carc. 1B, H350 Nota B,D,F Acute Tox. 3, H311

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-epoxipropoxy)phenyl]propane	(CAS-No.) 1675-54-3 (EC-No.) 216-823-5	(C >= 5%) Skin Irrit. 2, H315 (C >= 5%) Eye Irrit. 2, H319
formaldehyde	(CAS-No.) 50-00-0 (EC-No.) 200-001-8	(C >= 25%) EUH071 (C >= 25%) Skin Corr. 1B, H314 (5% <= C < 25%) Skin Irrit. 2, H315 (C >= 25%) Eye Dam. 1, H318 (5% <= C < 25%) Eye Irrit. 2, H319 (C >= 0.2%) Skin Sens. 1A, H317 (5% <= C < 25%) STOT SE 3, H335

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

No critical symptoms or effects. See Section 11.1, information on toxicological effects.

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

None inherent in this product.

Hazardous Decomposition or By-Products**Substance**

formaldehyde
Carbon monoxide
Carbon dioxide.

Condition

During combustion.
During combustion.
During combustion.

Hydrogen Chloride

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**

Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS. Evacuate area. 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.

6.2. Environmental precautions

Avoid release to the environment. For larger spills, cover drains and build dykes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorised person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and Safety Data Sheet. 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**

Avoid breathing 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.

7.2. Conditions for safe storage including any incompatibilities

Store away from acids. Store away from strong bases.

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
Titanium dioxide	13463-67-7	UK HSE	TWA(respirable):4 mg/m3;TWA(Inhalable):10 mg/m3	
Dust, inhalable dust	471-34-1	UK HSE	TWA(as respirable dust):4 mg/m3;TWA(as inhalable dust):10 mg/m3	
formaldehyde	50-00-0	UK HSE	TWA:2.5 mg/m3(2 ppm);STEL:2.5 mg/m3(2 ppm)	

UK HSE : 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

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.

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.

Applicable Norms/Standards

Use eye protection conforming to EN 16321

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 (e.g., spraying, high splash potential, etc.), then use of a protective apron may be necessary. See recommended glove material(s) for determining appropriate apron material(s). If a glove material is not available as an apron, polymer laminate is a suitable option.

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	Liquid.
Specific Physical Form:	Thixotropic Paste
Colour	White
Odor	Pungent Sulphuric
Odour threshold	No data available.
Melting point/freezing point	Not applicable.
Boiling point/boiling range	No data available.
Flammability	Not applicable.
Flammable Limits(LEL)	No data available.
Flammable Limits(UEL)	No data available.
Flash point	>=93.3 °C [Test Method:Closed Cup]
Autoignition temperature	No data available.
Decomposition temperature	No data available.
pH	substance/mixture is non-soluble (in water)
Kinematic Viscosity	No data available.
Water solubility	Nil
Solubility- non-water	No data available.
Partition coefficient: n-octanol/water	No data available.
Vapour pressure	No data available.
Density	1.1 g/ml
Relative density	1.1 [Ref Std:WATER=1]
Relative Vapour Density	No data available.
Particle Characteristics	Not applicable.

9.2. Other information

9.2.2 Other safety characteristics

EU Volatile Organic Compounds	No data available.
Evaporation rate	No data available.
Molecular weight	No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is considered to be non reactive under normal use conditions

10.2 Chemical stability

Stable.

10.3 Possibility of hazardous reactions

Hazardous polymerisation will not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Reducing agents.

Strong bases.

Strong acids.

10.6 Hazardous decomposition products

Substance

None known.

Condition

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.

Skin contact

Contact with the skin during product use is not expected to result in significant irritation. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye contact

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion

Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea.

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
Propane, 1,2,3-trichloro-, polymer with 1,1'-[methylenebis(oxy)]bis[2-chloroethane] and sodium sulfide (Na ₂ (Sx)), reduced	Dermal	Rat	LD50 > 7,800 mg/kg
Propane, 1,2,3-trichloro-, polymer with 1,1'-[methylenebis(oxy)]bis[2-chloroethane] and sodium sulfide (Na ₂ (Sx)), reduced	Ingestion	Rat	LD50 > 5,000 mg/kg

3M Aerospace Sealant AC-770 B-1 Base

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
Titanium dioxide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Titanium dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
Titanium dioxide	Ingestion	Rat	LD50 > 10,000 mg/kg
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Dermal	Rat	LD50 > 1,600 mg/kg
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Ingestion	Rat	LD50 > 1,000 mg/kg
Formaldehyde, oligomeric reaction products with phenol	Dermal	Rat	LD50 > 2,000 mg/kg
Formaldehyde, oligomeric reaction products with phenol	Ingestion	Rat	LD50 > 2,900 mg/kg
formaldehyde	Dermal	Rabbit	LD50 270 mg/kg
formaldehyde	Inhalation-Gas (4 hours)	Rat	LC50 470 ppm
formaldehyde	Ingestion	Rat	LD50 800 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Propane, 1,2,3-trichloro-, polymer with 1,1'-[methylenebis(oxy)]bis[2-chloroethane] and sodium sulfide (Na2(Sx)), reduced	Rabbit	No significant irritation
Calcium carbonate	Rabbit	No significant irritation
Titanium dioxide	Rabbit	No significant irritation
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Rabbit	Mild irritant
Formaldehyde, oligomeric reaction products with phenol	Human and animal	Mild irritant
formaldehyde	official classification	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Propane, 1,2,3-trichloro-, polymer with 1,1'-[methylenebis(oxy)]bis[2-chloroethane] and sodium sulfide (Na2(Sx)), reduced	Rabbit	No significant irritation
Calcium carbonate	Rabbit	No significant irritation
Titanium dioxide	Rabbit	No significant irritation
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Rabbit	Moderate irritant
Formaldehyde, oligomeric reaction products with phenol	Human and animal	Moderate irritant
formaldehyde	official classification	Corrosive

Skin Sensitisation

Name	Species	Value
Propane, 1,2,3-trichloro-, polymer with 1,1'-[methylenebis(oxy)]bis[2-chloroethane] and sodium sulfide (Na2(Sx)), reduced		Not classified
Titanium dioxide	Human and animal	Not classified
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Human and animal	Sensitising
Formaldehyde, oligomeric reaction products with phenol	Human and	Sensitising

	animal	
formaldehyde	Guinea pig	Sensitising

Respiratory Sensitisation

Name	Species	Value
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Human	Not classified
Formaldehyde, oligomeric reaction products with phenol	Human	Not classified
formaldehyde	Human	Some positive data exist, but the data are not sufficient for classification

Germ Cell Mutagenicity

Name	Route	Value
Titanium dioxide	In Vitro	Not mutagenic
Titanium dioxide	In vivo	Not mutagenic
bis-[4-(2,3-epoxipropoxy)phenyl]propane	In vivo	Not mutagenic
bis-[4-(2,3-epoxipropoxy)phenyl]propane	In Vitro	Some positive data exist, but the data are not sufficient for classification
formaldehyde	In Vitro	Some positive data exist, but the data are not sufficient for classification
formaldehyde	In vivo	Mutagenic

Carcinogenicity

Name	Route	Species	Value
Titanium dioxide	Ingestion	Multiple animal species	Not carcinogenic
Titanium dioxide	Inhalation	Rat	Carcinogenic.
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
formaldehyde	Not specified.	Human and animal	Carcinogenic.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Calcium carbonate	Ingestion	Not classified for development	Rat	NOAEL 625 mg/kg/day	premating & during gestation
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesis
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
formaldehyde	Ingestion	Not classified for male reproduction	Rat	NOAEL 100 mg/kg	not applicable
formaldehyde	Inhalation	Not classified for development	Rat	NOAEL 10 ppm	during gestation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
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3M Aerospace Sealant AC-770 B-1 Base

Calcium carbonate	Inhalation	respiratory system	Not classified	Rat	NOAEL 0.812 mg/l	90 minutes
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Formaldehyde, oligomeric reaction products with phenol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
formaldehyde	Inhalation	respiratory system	Causes damage to organs	Rat	LOAEL 128 ppm	6 hours
formaldehyde	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Calcium carbonate	Inhalation	respiratory system	Not classified	Human	NOAEL Not available	occupational exposure
Titanium dioxide	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.01 mg/l	2 years
Titanium dioxide	Inhalation	pulmonary fibrosis	Not classified	Human	NOAEL Not available	occupational exposure
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
bis-[4-(2,3-epoxipropoxy)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
Formaldehyde, oligomeric reaction products with phenol	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
formaldehyde	Dermal	respiratory system	Not classified	Mouse	NOAEL 80 mg/kg/day	60 weeks
formaldehyde	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 0.3 ppm	28 months
formaldehyde	Inhalation	liver	Not classified	Rat	NOAEL 20 ppm	13 weeks
formaldehyde	Inhalation	hematopoietic system	Not classified	Mouse	NOAEL 15 ppm	3 weeks
formaldehyde	Inhalation	nervous system	Not classified	Mouse	NOAEL 10 ppm	13 weeks
formaldehyde	Inhalation	endocrine system immune system muscles kidney and/or bladder	Not classified	Rat	NOAEL 15 ppm	28 months
formaldehyde	Inhalation	gastrointestinal tract	Not classified	Rat	NOAEL 15 ppm	2 years
formaldehyde	Inhalation	eyes vascular system	Not classified	Rat	NOAEL 14.3 ppm	2 years
formaldehyde	Inhalation	heart	Not classified	Mouse	NOAEL 14.3 ppm	2 years
formaldehyde	Ingestion	liver	Not classified	Rat	NOAEL 300 mg/kg/day	2 years
formaldehyde	Ingestion	immune system	Not classified	Rat	NOAEL 20 mg/kg/day	4 weeks
formaldehyde	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 15 mg/kg/day	24 months
formaldehyde	Ingestion	nervous system	Not classified	Rat	NOAEL 109	2 years

formaldehyde	Ingestion	heart endocrine system hematopoietic system respiratory system vascular system	Not classified	Rat	mg/kg/day NOAEL 300 mg/kg/day	2 years
formaldehyde	Ingestion	skin muscles eyes	Not classified	Rat	NOAEL 109 mg/kg/day	2 years

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
Propane, 1,2,3-trichloro-, polymer with 1,1'-[methylenebis(oxy)]bis[2-chloroethane] and sodium sulfide (Na ₂ (Sx)), reduced	68611-50-7	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
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
Titanium dioxide	13463-67-7	Activated sludge	Experimental	3 hours	NOEC	>=1,000 mg/l
Titanium dioxide	13463-67-7	Diatom	Experimental	72 hours	EC50	>10,000 mg/l
Titanium dioxide	13463-67-7	Fathead minnow	Experimental	96 hours	LC50	>100 mg/l
Titanium dioxide	13463-67-7	Water flea	Experimental	48 hours	EC50	>100 mg/l
Titanium dioxide	13463-67-7	Diatom	Experimental	72 hours	NOEC	5,600 mg/l
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Activated sludge	Analogous Compound	3 hours	IC50	>100 mg/l
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Rainbow trout	Estimated	96 hours	LC50	2 mg/l

3M Aerospace Sealant AC-770 B-1 Base

yl]propane						
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Water flea	Estimated	48 hours	EC50	1.8 mg/l
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Green algae	Experimental	72 hours	ErC50	>11 mg/l
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Green algae	Experimental	72 hours	NOEC	4.2 mg/l
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Water flea	Experimental	21 days	NOEC	0.3 mg/l
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	N/A	Data not available or insufficient for classification	N/A	N/A	n/a
formaldehyde	50-00-0	Green algae	Experimental	72 hours	ErC50	4.89 mg/l
formaldehyde	50-00-0	Striped bass	Experimental	96 hours	LC50	6.7 mg/l
formaldehyde	50-00-0	Water flea	Experimental	48 hours	EC50	5.8 mg/l
formaldehyde	50-00-0	Medaka	Experimental	28 days	NOEC	>=48 mg/l
formaldehyde	50-00-0	Water flea	Experimental	21 days	NOEC	>=6.4 mg/l
formaldehyde	50-00-0	Activated sludge	Experimental	3 hours	EC50	19

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Propane, 1,2,3-trichloro-, polymer with 1,1'-[methylenebis(oxy)]bis[2-chloroethane] and sodium sulfide (Na ₂ (Sx)), reduced	68611-50-7	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
Titanium dioxide	13463-67-7	Data not availbl-insufficient	N/A	N/A	N/A	N/A
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Experimental Biodegradation	28 days	BOD	5 %BOD/COD	OECD 301F - Manometric respirometry
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	117 hours (t 1/2)	OECD 111 Hydrolysis func of pH
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	Estimated Biodegradation	28 days	BOD	3 %BOD/ThOD	
formaldehyde	50-00-0	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	99 %removal of DOC	OECD 301A - DOC Die Away Test
formaldehyde	50-00-0	Experimental Biodegradation	160 days	BOD	99.5 %BOD/COD	OECD 303A - Simulated Aerobic

12.3 : Bioaccumulative potential

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
Propane, 1,2,3-trichloro-, polymer	68611-50-7	Data not available or insufficient for	N/A	N/A	N/A	N/A

with 1,1'-[methylenebis(oxy)]bis[2-chloroethane] and sodium sulfide (Na ₂ (Sx)), reduced		classification				
Calcium carbonate	471-34-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Titanium dioxide	13463-67-7	Experimental BCF - Fish	42 days	Bioaccumulation factor	9.6	
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Experimental Bioconcentration		Log Kow	3.242	OECD 117 log Kow HPLC method
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	Estimated Bioconcentration		Bioaccumulation factor	2.57	
formaldehyde	50-00-0	Experimental Bioconcentration		Log Kow	0.35	

12.4. Mobility in soil

Material	Cas No.	Test type	Study Type	Test result	Protocol
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Modeled Mobility in Soil	Koc	450 l/kg	Episuite™
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	Experimental Mobility in Soil	Koc	637 l/kg	OECD 121 Estim. of Koc by HPLC
formaldehyde	50-00-0	Estimated Mobility in Soil	Koc	15.9 l/kg	

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 completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product 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 10

Waste adhesives and sealants other than those mentioned in 08 04 09

SECTION 14: Transportation information

Not hazardous for transportation.

	Ground Transport (ADR)	Air Transport (IATA)	Marine Transport (IMDG)
14.1 UN number	No data available.	No data available.	No data available.
14.2 UN proper shipping name	No data available.	No data available.	No data available.
14.3 Transport hazard class(es)	No data available.	No data available.	No data available.
14.4 Packing group	No data available.	No data available.	No data available.
14.5 Environmental hazards	No data available.	No data available.	No data available.
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 Code	No data available.	No data available.	No data available.
IMDG Segregation Code	No data available.	No data available.	No data available.

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-epoxipropoxy)phenyl]propane

1675-54-3

Gr. 3: Not classifiable

International Agency
for Research on Cancer
The retained CLP
Regulation (EU) No

formaldehyde

50-00-0

Carc. 1B

1272/2008, as amended
for Great Britain, UK
Mandatory
Classification and
Labelling list
International Agency
for Research on Cancer
International Agency
for Research on Cancer

formaldehyde	50-00-0	Grp. 1: Carcinogenic to humans
Titanium dioxide	13463-67-7	Grp. 2B: Possible human carc.

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.

<u>Ingredient</u>	<u>CAS Nbr</u>
bis-[4-(2,3-epoxipropoxy)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

Regulation UK regulation 2023/63 (marketing and use of explosive precursors and poisons)

This product contains a reportable substance according to UK legislation 1972/66: all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point. Please see UK Regulation 2023/63 for further details.

Global inventory status

Contact 3M for more information. The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

COMAH Regulation, SI 2015/483

Seveso hazard categories, Annex 1, Part 1
None

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
formaldehyde	50-00-0	5	50

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**

EUH071	Corrosive to the respiratory tract.
H302	Harmful if swallowed.
H311	Toxic 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.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H411	Toxic to aquatic life with long lasting effects.

Revision information:

No revision information

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications. In addition, this SDS is being provided to convey health and safety information. If you are the importer of record of this product into the European Union, you are responsible for all regulatory requirements, including, but not limited to, product registrations/notifications, substance volume tracking, and potential substance registration.

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.



Safety Data Sheet

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Revision date: 29/08/2023

Version number: 5.02
Supersedes date: 27/06/2023

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 Aerospace Sealant AC-770 B-1 Catalyst

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

Identified uses

Hardener

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:

Acute Toxicity, Category 4 - Acute Tox. 4; H302
Skin Corrosion/Irritation, Category 2 - Skin Irrit. 2; H315
Serious Eye Damage/Eye Irritation, Category 2 - Eye Irrit. 2; H319
Reproductive Toxicity, Category 1A - Repr. 1A; H360D
Specific Target Organ Toxicity-Repeated Exposure, Category 2 - STOT RE 2; H373
Hazardous to the Aquatic Environment (Acute), Category 1 - Aquatic Acute 1; H400

Hazardous to the Aquatic Environment (Chronic), Category 1 - Aquatic Chronic 1; H410

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

GHS07 (Exclamation mark) | GHS08 (Health Hazard) | GHS09 (Environment) |

Pictograms



Ingredient	CAS Nbr	EC No.	% by Wt
manganese dioxide	1313-13-9	215-202-6	20 - 60
lead powder; [particle diameter < 1 mm]	7439-92-1	231-100-4	<= 0.1

HAZARD STATEMENTS:

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H360D	May damage the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure: nervous system.
H410	Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P201	Obtain special instructions before use.
P260G	Do not breathe vapours or dust.
P273	Avoid release to the environment.
P280F	Wear 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.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

For containers not exceeding 125 ml the following Hazard and Precautionary statements may be used:

<=125 ml Hazard statements

H360D	May damage the unborn child.
-------	------------------------------

<=125 ml Precautionary statements

Prevention:

P201 Obtain special instructions before use.
P280F Wear respiratory protection.

Response:

P308 + P313 IF exposed or concerned: Get medical advice/attention.

SUPPLEMENTAL INFORMATION:
Supplemental Precautionary Statements:

Restricted to professional users.

18% of the mixture consists of components of unknown acute oral toxicity.

Contains 70% of components with unknown hazards to the aquatic environment.

2.3. Other hazards

Contains a substance that meets the criteria for vPvB according to Regulation (EC) No 1907/2006, Annex XIII, as amended by UK REACH Regulations SI 2019/758

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
manganese dioxide	(CAS-No.) 1313-13-9 (EC-No.) 215-202-6	20 - 60	Acute Tox. 4, H332 Acute Tox. 4, H302 EUH031 STOT RE 2, H373
Hydrogenated terphenyl	(CAS-No.) 61788-32-7 (EC-No.) 262-967-7	20 - 60	Aquatic Chronic 2, H411
Polyphenyls, quater- and higher, partially hydrogenated	(CAS-No.) 68956-74-1 (EC-No.) 273-316-1	< 15	Substance not classified as hazardous
Natural Amorphous compounds	Trade Secret	< 10	Substance not classified as hazardous
Water	(CAS-No.) 7732-18-5 (EC-No.) 231-791-2	< 10	Substance not classified as hazardous
Zeolites	(CAS-No.) 1318-02-1 (EC-No.) 215-283-8	< 5	Substance with a national occupational exposure limit
Bis(piperidinothiocarbonyl) hexasulphide	(CAS-No.) 971-15-3 (EC-No.) 213-537-2	< 5	Substance not classified as hazardous
Terphenyl	(CAS-No.) 26140-60-3 (EC-No.) 247-477-3	< 5	Aquatic Acute 1, H400,M=10 Aquatic Chronic 1, H410,M=10

sodium hydroxide	(CAS-No.) 1310-73-2 (EC-No.) 215-185-5	< 2	Skin Corr. 1A, H314 Eye Dam. 1, H318 Met. Corr. 1, H290
ferbam (ISO)	(CAS-No.) 14484-64-1 (EC-No.) 238-484-2	< 1	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Acute 1, H400,M=10 Aquatic Chronic 1, H410,M=100 Acute Tox. 2, H330
lead powder; [particle diameter < 1 mm]	(CAS-No.) 7439-92-1 (EC-No.) 231-100-4	<= 0.1	Repr. 1A, H360FD Lact., H362 STOT SE 2, H371 STOT RE 2, H373 Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=10

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
lead powder; [particle diameter < 1 mm]	(CAS-No.) 7439-92-1 (EC-No.) 231-100-4	(C >= 0.03%) Repr. 1A, H360D
sodium hydroxide	(CAS-No.) 1310-73-2 (EC-No.) 215-185-5	(C >= 5%) Skin Corr. 1A, H314 (2% =< C < 5%) Skin Corr. 1B, H314 (0.5% =< C < 2%) Skin Irrit. 2, H315 (C >= 2%) Eye Dam. 1, H318 (0.5% =< C < 2%) 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

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately 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). Serious irritation to the eyes (significant redness, swelling, pain, tearing, and impaired vision). Harmful if swallowed. Target organ effects. See Section 11 for additional details.

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

None inherent in this product.

Hazardous Decomposition or By-Products**Substance**

Carbon monoxide
Carbon dioxide.
Oxides of nitrogen.
Oxides of Lead
Oxides of sulphur.

Condition

During combustion.
During combustion.
During combustion.
During combustion.
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. 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. For larger spills, cover drains and build dykes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorised person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and Safety Data Sheet. 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**

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. Avoid contact during pregnancy/while nursing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Use personal protective

equipment (eg. gloves, respirators...) as required.

7.2. Conditions for safe storage including any incompatibilities

Store away from heat. Store away from acids.

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
sodium hydroxide	1310-73-2	UK HSC	STEL:2 mg/m3	
Manganese, inorganic compounds	1313-13-9	UK HSC	TWA(as Mn, respirable fraction):0.05 mg/m3;TWA(as Mn):0.5 mg/m3	
Aluminium oxides	1318-02-1	UK HSC	TWA(as respirable dust):4 mg/m3;TWA(as inhalable dust):10 mg/m3	
Terphenyl	26140-60-3	UK HSC	STEL:4.8 mg/m3(0.5 ppm)	
Hydrogenated terphenyl	61788-32-7	UK HSC	TWA:19 mg/m3(2 ppm);STEL:48 mg/m3(5 ppm)	
lead powder; [particle diameter < 1 mm]	7439-92-1	UK HSC	TWA(as Pb):0.15 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

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.

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:

Full face shield.

Indirect vented goggles.

Applicable Norms/Standards

Use eye/face 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.

Gloves made from the following material(s) are recommended:

Material	Thickness (mm)	Breakthrough Time
Butyl rubber.	0.5	=>8 hours
Neoprene.	0.5	=>8 hours
Nitrile rubber.	0.35	=>8 hours

The glove data presented are based on the substance driving dermal toxicity and the conditions present at the time of testing. Breakthrough time may be altered when the glove is subjected to use conditions that place additional stress on the glove.

Applicable Norms/Standards

Use gloves tested to EN 374

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	Liquid.
Colour	Dark Brown
Odor	Slight Odor
Odour threshold	No data available.
Melting point/freezing point	Not applicable.
Boiling point/boiling range	No data available.
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	No data available.
Flammable Limits(UEL)	No data available.
Flash point	>=93.3 °C [Test Method:Closed Cup]
Autoignition temperature	No data available.
Decomposition temperature	No data available.
pH	substance/mixture is non-soluble (in water)
Kinematic Viscosity	No data available.
Water solubility	Nil
Solubility- non-water	No data available.
Partition coefficient: n-octanol/water	No data available.
Vapour pressure	No data available.
Density	1.58 g/ml
Relative density	1.58 [Ref Std:WATER=1]
Relative Vapour Density	>=1 [Ref Std:AIR=1]

9.2. Other information

9.2.2 Other safety characteristics

EU Volatile Organic Compounds

No data available.

Evaporation rate

Not applicable.

Molecular weight

No data available.

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 will not occur.

10.4 Conditions to avoid

Heat.

10.5 Incompatible materials

Reducing agents.

Strong acids.

10.6 Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
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

May be harmful in contact with skin. Skin Irritation: Signs/symptoms may include localised redness, swelling, itching, dryness, cracking, blistering, and pain.

Eye contact

Corrosive (eye burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing,

ulcerations, significantly impaired vision or complete loss of vision.

Ingestion

May be harmful if swallowed.

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

Additional Health Effects:

Prolonged or repeated exposure may cause target organ effects:

Neurological effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and changes in blood pressure and heart rate. Respiratory effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish coloured skin (cyanosis), sputum production, changes in lung function tests, and respiratory failure.

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm. Contains a chemical or chemicals which may interfere with lactation or be harmful to breastfed children.

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	Dermal		No data available; calculated ATE >2,000 - =5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE >2,000 - =5,000 mg/kg
manganese dioxide	Dermal	Rat	LD50 2,000 mg/kg
manganese dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 1.5 mg/l
manganese dioxide	Ingestion	Rat	LD50 > 2,197 mg/kg
Hydrogenated terphenyl	Dermal	Rabbit	LD50 > 2,000 mg/kg
Hydrogenated terphenyl	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 4.7 mg/l
Hydrogenated terphenyl	Ingestion	Rat	LD50 > 10,000 mg/kg
Terphenyl	Dermal	Rabbit	LD50 > 5,000 mg/kg
Terphenyl	Inhalation-Dust/Mist (4 hours)	Rat	LD50 > 3.8 mg/l
Terphenyl	Ingestion	Rat	LD50 2,304 mg/kg
Bis(piperidinothiocarbonyl) hexasulphide	Ingestion	Rat	LD50 > 5,000 mg/kg
Zeolites	Dermal	Rabbit	LD50 > 2,000 mg/kg
Zeolites	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 4.57 mg/l
Zeolites	Ingestion	Rat	LD50 > 5,000 mg/kg
ferbam (ISO)	Dermal	Rabbit	LD50 > 4,000 mg/kg
ferbam (ISO)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.4 mg/l
ferbam (ISO)	Ingestion	Rat	LD50 1,130 mg/kg
lead powder; [particle diameter < 1 mm]	Dermal		LD50 estimated to be 2,000 - 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
manganese dioxide	Rabbit	No significant irritation
Hydrogenated terphenyl	Rabbit	No significant irritation
Terphenyl	Rabbit	No significant irritation
Zeolites	Rabbit	No significant irritation
sodium hydroxide	Rabbit	Corrosive
ferbam (ISO)	Rabbit	No significant irritation
lead powder; [particle diameter < 1 mm]	similar compounds	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
manganese dioxide	Rabbit	Mild irritant
Hydrogenated terphenyl	Rabbit	No significant irritation
Terphenyl	Rabbit	No significant irritation
Zeolites	Rabbit	Mild irritant
sodium hydroxide	Rabbit	Corrosive
ferbam (ISO)	Rabbit	Severe irritant
lead powder; [particle diameter < 1 mm]	similar compounds	Mild irritant

Skin Sensitisation

Name	Species	Value
manganese dioxide	Mouse	Not classified
Hydrogenated terphenyl	Human	Not classified
sodium hydroxide	Human	Not classified
ferbam (ISO)	Guinea pig	Not classified

Respiratory Sensitisation

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

Germ Cell Mutagenicity

Name	Route	Value
manganese dioxide	In Vitro	Some positive data exist, but the data are not sufficient for classification
manganese dioxide	In vivo	Some positive data exist, but the data are not sufficient for classification
Hydrogenated terphenyl	In Vitro	Not mutagenic
Hydrogenated terphenyl	In vivo	Not mutagenic
Terphenyl	In Vitro	Not mutagenic
Terphenyl	In vivo	Not mutagenic
Bis(piperidinothiocarbonyl) hexasulphide	In Vitro	Not mutagenic
sodium hydroxide	In Vitro	Not mutagenic
lead powder; [particle diameter < 1 mm]	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
ferbam (ISO)	Ingestion	Rat	Not carcinogenic
lead powder; [particle diameter < 1 mm]	Not specified.	official classification	Carcinogenic.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
manganese dioxide	Inhalation	Not classified for female reproduction	Rat	NOAEL 20 mg/m ³	2 generation
manganese dioxide	Inhalation	Not classified for male reproduction	Rabbit	LOAEL 250 mg/kg	1 days
manganese dioxide	Ingestion	Not classified for development	Rat	LOAEL 354 mg/kg/day	premating into lactation
manganese dioxide	Inhalation	Not classified for development	Rat	LOAEL 61 mg/m ³	gestation into lactation
Hydrogenated terphenyl	Ingestion	Not classified for female reproduction	Rat	NOAEL 81 mg/kg/day	2 generation
Hydrogenated terphenyl	Ingestion	Not classified for male reproduction	Rat	NOAEL 62 mg/kg/day	2 generation
Hydrogenated terphenyl	Ingestion	Not classified for development	Rat	NOAEL 500 mg/kg/day	during organogenesis
ferbam (ISO)	Ingestion	Not classified for female reproduction	Rat	NOAEL 25 mg/kg/day	3 generation
ferbam (ISO)	Ingestion	Not classified for male reproduction	Rat	NOAEL 25 mg/kg/day	3 generation
ferbam (ISO)	Ingestion	Not classified for development	Rat	NOAEL 11 mg/kg/day	during organogenesis
lead powder; [particle diameter < 1 mm]	Not specified.	Toxic to female reproduction	Human	LOAEL 10 ug/dl blood	
lead powder; [particle diameter < 1 mm]	Not specified.	Toxic to male reproduction	Human	LOAEL 37 ug/dl blood	
lead powder; [particle diameter < 1 mm]	Not specified.	Toxic to development	Human	NOAEL Not available	

Lactation

Name	Route	Species	Value
ferbam (ISO)	Ingestion	Rat	Causes effects on or via lactation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
sodium hydroxide	Inhalation	respiratory irritation	May cause respiratory irritation	Human	NOAEL Not available	
lead powder; [particle diameter < 1 mm]	Ingestion	nervous system	May cause damage to organs	Human	LOAEL 90 ug/dl blood	poisoning and/or abuse
lead powder; [particle diameter < 1 mm]	Ingestion	heart	Not classified	Human	NOAEL Not available	poisoning and/or abuse

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
manganese dioxide	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Monkey	LOAEL 1.1 mg/m ³	10 months
manganese dioxide	Inhalation	nervous system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Hydrogenated terphenyl	Dermal	skin	Not classified	Rabbit	NOAEL 500 mg/kg/day	3 weeks
Hydrogenated terphenyl	Dermal	hematopoietic system	Not classified	Rabbit	NOAEL 2,000 mg/kg/day	3 weeks
Hydrogenated terphenyl	Inhalation	liver hematopoietic system eyes	Not classified	Rat	NOAEL 0.5 mg/l	13 weeks

Hydrogenated terphenyl	Ingestion	hematopoietic system kidney and/or bladder liver eyes respiratory system	Not classified	Rat	NOAEL 120 mg/kg/day	14 weeks
lead powder; [particle diameter < 1 mm]	Inhalation	kidney and/or bladder	May cause damage to organs though prolonged or repeated exposure	Human	LOAEL 60 ug/dl blood	occupational exposure
lead powder; [particle diameter < 1 mm]	Inhalation	hematopoietic system	May cause damage to organs though prolonged or repeated exposure	Human	LOAEL 50 ug/dl blood	occupational exposure
lead powder; [particle diameter < 1 mm]	Inhalation	nervous system	May cause damage to organs though prolonged or repeated exposure	Human	LOAEL 40 ug/dl blood	occupational exposure
lead powder; [particle diameter < 1 mm]	Inhalation	gastrointestinal tract	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
lead powder; [particle diameter < 1 mm]	Inhalation	heart endocrine system immune system vascular system	Not classified	Human	NOAEL Not available	occupational exposure
lead powder; [particle diameter < 1 mm]	Ingestion	bone, teeth, nails, and/or hair	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 20 ug/dl blood	3 months
lead powder; [particle diameter < 1 mm]	Ingestion	eyes	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 0.5 mg/kg/day	20 days
lead powder; [particle diameter < 1 mm]	Ingestion	hematopoietic system kidney and/or bladder	May cause damage to organs though prolonged or repeated exposure	Human	LOAEL 40 ug/dl blood	environmental exposure
lead powder; [particle diameter < 1 mm]	Ingestion	nervous system	May cause damage to organs though prolonged or repeated exposure	Human	LOAEL 11 ug/dl blood	environmental exposure
lead powder; [particle diameter < 1 mm]	Ingestion	auditory system heart endocrine system vascular system	Not classified	Human	NOAEL Not available	environmental 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
Hydrogenated terphenyl	61788-32-7	N/A	Data not available or insufficient for classification	N/A	N/A	N/A

3M Aerospace Sealant AC-770 B-1 Catalyst

Hydrogenated terphenyl	61788-32-7	Activated sludge	Experimental	3 hours	NOEC	103 mg/l
manganese dioxide	1313-13-9	Rainbow trout	Endpoint not reached	96 hours	LC50	>100 mg/l
manganese dioxide	1313-13-9	Green algae	Experimental	72 hours	EC50	>100 mg/l
manganese dioxide	1313-13-9	Water flea	Experimental	48 hours	EC50	>100 mg/l
manganese dioxide	1313-13-9	Green algae	Experimental	72 hours	EC10	100 mg/l
manganese dioxide	1313-13-9	Water flea	Experimental	8 days	NOEC	100 mg/l
Polyphenyls, quater- and higher, partially hydrogenated	68956-74-1	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Bis(piperidinothiocarbonyl) hexasulphide	971-15-3	Green algae	Experimental	72 hours	EC50	>100 mg/l
Bis(piperidinothiocarbonyl) hexasulphide	971-15-3	Green algae	Experimental	72 hours	NOEC	100 mg/l
Terphenyl	26140-60-3	Water flea	Estimated	48 hours	EC50	0.022 mg/l
Terphenyl	26140-60-3	Green algae	Experimental	72 hours	EC50	0.102 mg/l
Terphenyl	26140-60-3	Rainbow trout	Experimental	96 hours	LC50	27 mg/l
Terphenyl	26140-60-3	Fathead minnow	Experimental	34 days	NOEC	0.064 mg/l
Terphenyl	26140-60-3	Green algae	Experimental	72 hours	NOEC	0.003 mg/l
Terphenyl	26140-60-3	Water flea	Experimental	21 days	NOEC	0.005 mg/l
Zeolites	1318-02-1	African clawed frog	Analogous Compound	96 hours	LC50	1,800 mg/l
Zeolites	1318-02-1	Fathead minnow	Analogous Compound	96 hours	LC50	>680 mg/l
Zeolites	1318-02-1	Green algae	Analogous Compound	72 hours	EC50	130 mg/l
Zeolites	1318-02-1	Sediment organism	Analogous Compound	22 days	EC50	364.9 mg/l
Zeolites	1318-02-1	Water flea	Analogous Compound	48 hours	EC50	>100 mg/l
Zeolites	1318-02-1	Fathead minnow	Analogous Compound	30 days	NOEC	86.7 mg/l
Zeolites	1318-02-1	Green algae	Analogous Compound	72 hours	NOEC	18 mg/l
Zeolites	1318-02-1	Water flea	Analogous Compound	21 days	NOEC	32 mg/l
Zeolites	1318-02-1	Bacteria	Experimental	16 hours	EC50	950 mg/l
Zeolites	1318-02-1	Radish	Experimental	23 days	EC50	4,000 mg/kg (Dry Weight)
sodium hydroxide	1310-73-2	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
ferbam (ISO)	14484-64-1	Green algae	Experimental	96 hours	ErC50	2.4 mg/l
ferbam (ISO)	14484-64-1	Guppy	Experimental	96 hours	LC50	0.09 mg/l
ferbam (ISO)	14484-64-1	Water flea	Experimental	48 hours	LC50	0.09 mg/l
ferbam (ISO)	14484-64-1	Rainbow trout	Experimental	60 days	NOEC	0.00056 mg/l
lead powder; [particle diameter <	7439-92-1	Fathead minnow	Analogous Compound	96 hours	LC50	0.0408 mg/l

1 mm]						
lead powder; [particle diameter < 1 mm]	7439-92-1	Green algae	Analogous Compound	72 hours	ErC50	0.0205 mg/l
lead powder; [particle diameter < 1 mm]	7439-92-1	Water flea	Analogous Compound	48 hours	EC50	0.026 mg/l
lead powder; [particle diameter < 1 mm]	7439-92-1	N/A	Analogous Compound	30 days	EC10	0.0017 mg/l
lead powder; [particle diameter < 1 mm]	7439-92-1	Green algae	Analogous Compound	72 hours	ErC10	0.0061 mg/l
lead powder; [particle diameter < 1 mm]	7439-92-1	Rainbow trout	Analogous Compound	578 days	NOEC	0.003 mg/l
lead powder; [particle diameter < 1 mm]	7439-92-1	Activated sludge	Analogous Compound	24 hours	EC50	9 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Hydrogenated terphenyl	61788-32-7	Experimental Biodegradation	35 days	CO2 evolution	1 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Hydrogenated terphenyl	61788-32-7	Experimental Photolysis		Photolytic half-life(in water)	86 days (t 1/2)	
Hydrogenated terphenyl	61788-32-7	Experimental Soil Metabolism Aerobic		Half-life (t 1/2)	202 days (t 1/2)	
manganese dioxide	1313-13-9	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Polyphenyls, quater- and higher, partially hydrogenated	68956-74-1	Data not availbl-insufficient	N/A	N/A	N/A	N/A
Bis(piperidinothiocarbonyl) hexasulphide	971-15-3	Experimental Biodegradation	28 days	BOD	0 %BOD/ThOD	OECD 301F - Manometric respirometry
Terphenyl	26140-60-3	Experimental Biodegradation	14 days	BOD	0.5 %BOD/ThOD	OECD 301C - MITI test (I)
Zeolites	1318-02-1	Analogous Compound Hydrolysis		Hydrolytic half-life	60 days (t 1/2)	
sodium hydroxide	1310-73-2	Data not availbl-insufficient	N/A	N/A	N/A	N/A
ferbam (ISO)	14484-64-1	Analogous Compound Biodegradation	14 days	BOD	0 %BOD/ThOD	OECD 301C - MITI test (I)
ferbam (ISO)	14484-64-1	Experimental Hydrolysis		Hydrolytic half-life	≤31 minutes (t 1/2)	
lead powder; [particle diameter < 1 mm]	7439-92-1	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
Hydrogenated terphenyl	61788-32-7	Analogous Compound BCF - Fish	42 days	Bioaccumulation factor	5200	similar to OECD 305
Hydrogenated terphenyl	61788-32-7	Experimental Bioconcentration		Log Kow	>5.3	OECD 117 log Kow HPLC method
manganese dioxide	1313-13-9	Data not available	N/A	N/A	N/A	N/A

		or insufficient for classification				
Polyphenyls, quater- and higher, partially hydrogenated	68956-74-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Bis(piperidinothiocarbonyl) hexasulphide	971-15-3	Estimated Bioconcentration		Bioaccumulation factor	2.8	
Terphenyl	26140-60-3	Estimated BCF - Fish	60 days	Bioaccumulation factor	2300	OECD305-Bioconcentration
Zeolites	1318-02-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
sodium hydroxide	1310-73-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
ferbam (ISO)	14484-64-1	Experimental Bioconcentration		Log Kow	-1.597	OECD 107 log Kow shke flsk mtd
lead powder; [particle diameter < 1 mm]	7439-92-1	Experimental BCF - Other		Bioaccumulation factor	1322	

12.4. Mobility in soil

Material	Cas No.	Test type	Study Type	Test result	Protocol
Hydrogenated terphenyl	61788-32-7	Experimental Mobility in Soil	Koc	≥8400 l/kg	OECD 121 Estim. of Koc by HPLC
Bis(piperidinothiocarbonyl) hexasulphide	971-15-3	Modeled Mobility in Soil	Koc	37,000 l/kg	Episuite™

12.5. Results of the PBT and vPvB assessment

Ingredient	CAS Nbr	PBT/vPvB status
Hydrogenated terphenyl	61788-32-7	Meets UK REACH vPvB criteria

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. 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

SECTION 14: Transportation information

	Ground Transport (ADR)	Air Transport (IATA)	Marine Transport (IMDG)
14.1 UN number	UN3082	UN3082	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(FERBAM; TERPHENYL)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(FERBAM; TERPHENYL)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(FERBAM; TERPHENYL)
14.3 Transport hazard class(es)	9	9	9
14.4 Packing group	III	III	III
14.5 Environmental hazards	Environmentally Hazardous	Not applicable	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 Code	M6	Not applicable.	Not applicable.
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**

<u>Ingredient</u>	<u>CAS Nbr</u>	<u>Classification</u>	<u>Regulation</u>
ferbam (ISO)	14484-64-1	Gr. 3: Not classifiable	International Agency for Research on Cancer
lead powder; [particle diameter < 1 mm]	7439-92-1	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Zeolites	1318-02-1	Gr. 3: Not classifiable	International Agency for Research on Cancer

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.

<u>Ingredient</u>	<u>CAS Nbr</u>
lead powder; [particle diameter < 1 mm]	7439-92-1

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

Authorisation status under UK REACH:

The following substance/s contained in this product might be or is/are subject to authorisation in accordance with UK REACH:

<u>Ingredient</u>	<u>CAS Nbr</u>
Hydrogenated terphenyl	61788-32-7
lead powder; [particle diameter < 1 mm]	7439-92-1

Authorisation status: listed in the UK REACH Candidate List of Substances of Very High Concern for Authorisation

Global inventory status

Contact 3M for more information. The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

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
E1 Hazardous to the Aquatic environment	100	200

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
ferbam (ISO)	14484-64-1	100	200
lead powder; [particle	7439-92-1	100	200

diameter < 1 mm]			
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Regulation (EU) No 649/2012, as amended for GB

Chemical	Identifier(s)	Annex I
ferbam (ISO)	14484-64-1	Part 1 and Part 2
lead powder; [particle diameter < 1 mm]	7439-92-1	Part 1

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**

EUH031	Contact with acid liberates toxic gas.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360D	May damage the unborn child.
H360FD	May damage fertility. May damage the unborn child.
H362	May cause harm to breast-fed children.
H371	May cause damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure: nervous system.
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:

Section 14: Transportation classification information was deleted.

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications. In addition, this SDS is being provided to convey health and safety information. If you are the importer of record of this product into the European Union, you are responsible for all regulatory requirements, including, but not limited to, product registrations/notifications, substance volume tracking, and potential substance registration.

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.