



Safety Data Sheet

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Transportation version number:	4.00 (02/06/2019)		

This Safety Data Sheet has been prepared in accordance with the REACH Regulation (EC) 1907/2006 and its modifications.

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

1.1. Product identifier

3M Aerospace Sealant AC-730 B-1/2

Product Identification Numbers

70-0052-2235-4 70-0052-2237-0

7000048347 7000048349

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:

30-2761-2, 30-2850-3

TRANSPORTATION INFORMATION

70-0052-2235-4, 70-0052-2237-0

Component 1

ADR/RID: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. LIMITED QUANTITY, (ZINC PHOSPHATE), 9., III, (-), ADR Classification Code: M6.

IMDG-CODE: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (ZINC PHOSPHATE), 9., III, IMDG-Code segregation code: NONE, LIMITED QUANTITY, EMS: FA, SF.

ICAO/IATA: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (ZINC PHOSPHATE), 9., III, fish and tree marking may be required (> 5kg/l).

Component 2

ADR/RID: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. LIMITED QUANTITY, (FERBAM), 9., III, (-), ADR Classification Code: M6.

IMDG-CODE: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (FERBAM), 9., III, IMDG-Code segregation code: NONE, LIMITED QUANTITY, EMS: FA, SF.

ICAO/IATA: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (FERBAM), 9., III, fish and tree marking may be required (> 5kg/l).

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

KIT LABEL

2.1. Classification of the substance or mixture

CLP REGULATION (EC) No 1272/2008

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; H360

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

CLP REGULATION (EC) No 1272/2008

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
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.
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.
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.
P280K	Wear protective gloves and respiratory protection.

Response:

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

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:

Kit Information: Contains statement for sensitisers information was modified.
Label: CLP Ingredients - kit components information was modified.
Section 2: <125ml Precautionary - Prevention information was modified.
Label: CLP Classification information was modified.
Label: CLP Precautionary - Disposal information was deleted.
Label: CLP Precautionary - Prevention information was modified.
Label: CLP Supplemental Precautionary Statements information was deleted.
Section 02: SDS Elements: CLP Supplemental Precautionary Statements information was added.



Safety Data Sheet

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Document group:	30-2761-2	Version number:	9.01
Revision date:	02/09/2021	Supersedes date:	02/08/2021

This Safety Data Sheet has been prepared in accordance with the REACH Regulation (EC) 1907/2006 and its modifications.

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

1.1. Product identifier

3M™ Aerospace Sealant AC-730 B-1/2, B-2, and B-6 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.
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1.4. Emergency telephone number

+44 (0)1344 858 000

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

CLP REGULATION (EC) No 1272/2008

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:

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

CLP REGULATION (EC) No 1272/2008

Symbols

GHS09 (Environment) |

Pictograms**HAZARD STATEMENTS:**

H411 Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS**Prevention:**

P273 Avoid release to the environment.

Response:

P391 Collect spillage.

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

No hazard statements are required for containers <=125 mL.

No precautionary statements are required for containers <=125 mL.

SUPPLEMENTAL INFORMATION:**Supplemental Hazard Statements:**

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

Contains 69% of components with unknown hazards to the aquatic environment.

2.3. Other hazards

None known.

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]
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	60 - 70	Substance not classified as hazardous
Calcium carbonate	(CAS-No.) 471-34-1 (EC-No.) 207-439-9	20 - 30	Substance with a national occupational exposure limit

trizinc bis(orthophosphate)	(CAS-No.) 7779-90-0 (EC-No.) 231-944-3	< 2	Aquatic Acute 1, H400,M=10 Aquatic Chronic 1, H410,M=10
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	< 0.2	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 Acute Tox. 3, H311 Acute Tox. 3, H301 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Muta. 2, H341 Carc. 1B, H350 STOT SE 3, H335 Nota B,D

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%) 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 (C >= 5%) 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

No need for first aid is anticipated.

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

<u>Substance</u>	<u>Condition</u>
Aldehydes.	During combustion.
formaldehyde	During combustion.
Carbon monoxide	During combustion.
Carbon dioxide.	During combustion.
Hydrogen Chloride	During combustion.
Oxides of nitrogen.	During combustion.
Oxides of sulphur.	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

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
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	
formaldehyde	50-00-0	UK HSC	TWA:2.5 mg/m3(2 ppm);STEL:2.5 mg/m3(2 ppm)	

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.

Recommended monitoring procedures:Information on recommended monitoring procedures can be obtained from UK HSC

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

None required.

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

When only incidental contact is anticipated, alternative glove material(s) may be used. If contact with the glove does occur, remove immediately and replace with a set of new gloves. For incidental contact, gloves made of the following material(s) may be used: Nitrile rubber.

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	Liquid.
Specific Physical Form:	Thixotropic Paste
Colour	Tan
Odor	Sulfuric
Odour threshold	<i>No data available.</i>
Melting point/freezing point	<i>Not applicable.</i>
Boiling point/boiling range	<i>Not applicable.</i>
Flammability (solid, gas)	Not applicable.
Flammable Limits(LEL)	<i>Not applicable.</i>
Flammable Limits(UEL)	<i>Not applicable.</i>
Flash point	>=93.3 °C [<i>Test Method: Closed Cup</i>]
Autoignition temperature	<i>No data available.</i>
Decomposition temperature	<i>No data available.</i>
pH	<i>substance/mixture is non-soluble (in water)</i>
Kinematic Viscosity	<i>No data available.</i>
Water solubility	Nil
Solubility- non-water	<i>No data available.</i>
Partition coefficient: n-octanol/water	<i>No data available.</i>
Vapour pressure	<i>No data available.</i>
Density	1.5 g/ml
Relative density	1.5 [<i>Ref Std: WATER=1</i>]
Relative Vapor Density	<i>No data available.</i>

9.2. Other information

9.2.2 Other safety characteristics

EU Volatile Organic Compounds

No data available.

Evaporation rate

Not applicable.

Molecular weight

Not applicable.

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 acids.

Strong bases.

10.6 Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
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None known.	
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Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not agree with the EU 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 internal hazard assessments.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

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
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
trizinc bis(orthophosphate)	Dermal		LD50 estimated to be > 5,000 mg/kg
trizinc bis(orthophosphate)	Ingestion	Rat	LD50 > 5,000 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
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	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 (Na ₂ (Sx)), reduced	Rabbit	No significant irritation
Calcium carbonate	Rabbit	No significant irritation
Formaldehyde, oligomeric reaction products with phenol	Human and animal	Mild irritant
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Rabbit	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 (Na ₂ (Sx)), reduced	Rabbit	No significant irritation
Calcium carbonate	Rabbit	No significant irritation
Formaldehyde, oligomeric reaction products with phenol	Human and animal	Moderate irritant
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Rabbit	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 (Na ₂ (Sx)), reduced		Not classified
Formaldehyde, oligomeric reaction products with phenol	Human and animal	Sensitising
bis-[4-(2,3-epoxipropoxy)phenyl]propane	Human and animal	Sensitising
formaldehyde	Guinea pig	Sensitising

Respiratory Sensitisation

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

Germ Cell Mutagenicity

Name	Route	Value
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
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	prematuring & 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
Calcium carbonate	Inhalation	respiratory system	Not classified	Rat	NOAEL 0.812 mg/l	90 minutes
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
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
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	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 mg/kg/day	2 years
formaldehyde	Ingestion	heart endocrine system hematopoietic	Not classified	Rat	NOAEL 300 mg/kg/day	2 years

3M™ Aerospace Sealant AC-730 B-1/2, B-2, and B-6 Base

		system respiratory system vascular system				
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 EU 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		Data not available or insufficient for classification			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
trizinc bis(orthophosphate)	7779-90-0	Activated sludge	Estimated	3 hours	EC50	10 mg/l
trizinc bis(orthophosphate)	7779-90-0	Crustacea other	Estimated	48 hours	EC50	0.08 mg/l
trizinc bis(orthophosphate)	7779-90-0	Green Algae	Estimated	72 hours	EC50	0.083 mg/l
trizinc bis(orthophosphate)	7779-90-0	Rainbow trout	Estimated	96 hours	LC50	0.33 mg/l
trizinc bis(orthophosphate)	7779-90-0	Water flea	Estimated	48 hours	EC50	0.12 mg/l
trizinc bis(orthophosphate)	7779-90-0	Diatom	Estimated	72 hours	EC50	0.04 mg/l
trizinc bis(orthophosphate)	7779-90-0	Green Algae	Estimated	72 hours	NOEC	0.01 mg/l
trizinc bis(orthophosphate)	7779-90-0	Water flea	Estimated	7 days	NOEC	0.026 mg/l
Formaldehyde, oligomeric reaction products with phenol	9003-35-4		Data not available or insufficient for classification			n/a

3M™ Aerospace Sealant AC-730 B-1/2, B-2, and B-6 Base

bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Activated sludge	Estimated	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
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	EC50	>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	50-00-0	Activated sludge	Experimental	3 hours	IC50	20.4 mg/l
formaldehyde	50-00-0	Fish other	Experimental	96 hours	LC50	6.7 mg/l
formaldehyde	50-00-0	Green algae	Experimental	72 hours	EC50	4.89 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

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 available - insufficient			N/A	
Calcium carbonate	471-34-1	Data not available - insufficient			N/A	
trizinc bis(orthophosphate)	7779-90-0	Data not available - insufficient			N/A	
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	Estimated Biodegradation	28 days	BOD	3 % BOD/ThBOD	
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Experimental Hydrolysis		Hydrolytic half-life	117 hours (t _{1/2})	Non-standard method
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Experimental Biodegradation	28 days	BOD	5 %BOD/COD	OECD 301F - Manometric respirometry
formaldehyde	50-00-0	Experimental Photolysis		Photolytic half-life(in water)	1-2 hours (t _{1/2})	Non-standard method
formaldehyde	50-00-0	Experimental Biodegradation	28 days	Dissolv. Organic Carbon Deplet	99 %removal of DOC	OECD 301A - DOC Die Away Test

12.3 : Bioaccumulative potential

Material	Cas No.	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 available or insufficient for classification	N/A	N/A	N/A	N/A
Calcium carbonate	471-34-1	Data not available	N/A	N/A	N/A	N/A

3M™ Aerospace Sealant AC-730 B-1/2, B-2, and B-6 Base

		or insufficient for classification				
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	Estimated Bioconcentration		Bioaccumulation factor	2.57	
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Experimental Bioconcentration		Log Kow	3.242	Non-standard method
formaldehyde	50-00-0	Experimental Bioconcentration		Log Kow	0.35	Non-standard method

12.4. Mobility in soil

Material	Cas No.	Test type	Study Type	Test result	Protocol
Formaldehyde, oligomeric reaction products with phenol	9003-35-4	Experimental Mobility in Soil	Koc	637 l/kg	OECD 121 Estim. of Koc by HPLC

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. Endocrine disrupting properties

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

12.7. Other adverse effects

No information available.

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 09* Waste adhesives and sealants containing organic solvents or other dangerous substances

SECTION 14: Transportation information

Not hazardous for transportation.

ADR: UN3082; Environmentally Hazardous Substance, Liquid; N.O.S., (Zinc Phosphate); 9; III; (-); M6.

IATA: UN3082; Environmentally Hazardous Substance, Liquid; N.O.S., (Zinc Phosphate); 9; III.

Exemption: For vessels containing a net quantity of 5 l or a net mass of 5 kg or less per single or inner packaging, special

provision 375 (ADR), exemption per 2.10.2.7 (IMDG) or special provision A197 (IATA) may be applied, if applicable
 IMDG: UN3082; Environmentally Hazardous Substance, Liquid; N.O.S., (Zinc Phosphate); 9; III; Marine Pollutant: Zinc Phosphate; FA, SF.

	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 Tunnel Code	No data available.	Not applicable.	No data available.
ADR Classification Code	No data available.	No data available.	No data available.
ADR Transport Category	No data available.	No data available.	No data available.
ADR Multiplier	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**

<u>Ingredient</u>	<u>CAS Nbr</u>	<u>Classification</u>	<u>Regulation</u>
bis-[4-(2,3-epoxipropoxy)phenyl]propane	1675-54-3	Gr. 3: Not classifiable	International Agency for Research on Cancer Regulation (EC) No. 1272/2008, Table 3.1
formaldehyde	50-00-0	Carc. 1B	International Agency for Research on Cancer Regulation (EC) No. 1272/2008, Table 3.1
formaldehyde	50-00-0	Grp. 1: Carcinogenic to humans	International Agency for Research on Cancer Regulation (EC) No. 1272/2008, Table 3.1

Global inventory status

Contact 3M for more 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.

15.2. Chemical Safety Assessment

A chemical safety assessment has not been carried out for this mixture. Chemical safety assessments for the contained substances may have been carried out by the registrants of the substances in accordance with Regulation (EC) No 1907/2006, as amended.

SECTION 16: Other information**List of relevant H statements**

H301	Toxic 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.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H350	May cause 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:

Section 3: Composition/ Information of ingredients table information was modified.

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 United Kingdom MSDSs are available at www.3M.com/uk



Safety Data Sheet

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Revision date:	30/06/2021	Supersedes date:	10/05/2021

This Safety Data Sheet has been prepared in accordance with the REACH Regulation (EC) 1907/2006 and its modifications.

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

1.1. Product identifier

3M Aerospace Sealant AC-730 B-1/2 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

CLP REGULATION (EC) No 1272/2008

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; H360
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

CLP REGULATION (EC) No 1272/2008

SIGNAL WORD

DANGER.

Symbols

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

Pictograms



Ingredients:

Ingredient	CAS Nbr	EC No.	% by Wt
manganese dioxide	1313-13-9	215-202-6	30 - 45
lead powder; [particle diameter < 1 mm]	7439-92-1	231-100-4	< 0.15

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.
H410	Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P201	Obtain special instructions before use.
P260A	Do not breathe vapours.
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.

12% of the mixture consists of components of unknown acute oral toxicity.

Contains 51% 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

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]
manganese dioxide	(CAS-No.) 1313-13-9 (EC-No.) 215-202-6 (REACH-No.) 01-2119452801-43	30 - 45	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 (REACH-No.) 01-2119488183-33	30 - 40	Aquatic Chronic 2, H411
Polyphenyls, quater- and higher, partially hydrogenated	(CAS-No.) 68956-74-1 (EC-No.) 273-316-1	< 10	Substance not classified as hazardous
Natural Amorphous compounds	Trade Secret	< 5	Substance not classified as hazardous
Water	(CAS-No.) 7732-18-5 (EC-No.) 231-791-2	1 - 5	Substance not classified as hazardous
Bis(piperidinothiocarbonyl) hexsulphide	(CAS-No.) 971-15-3 (EC-No.) 213-537-2	1 - 5	Substance not classified as hazardous
Terphenyl	(CAS-No.) 26140-60-3 (EC-No.) 247-477-3	1 - 5	Aquatic Acute 1, H400,M=10 Aquatic Chronic 1, H410,M=10
Quartz	(CAS-No.) 14808-60-7 (EC-No.) 238-878-4	0.1 - 1	STOT RE 1, H372

sodium hydroxide	(CAS-No.) 1310-73-2 (EC-No.) 215-185-5	< 1	Skin Corr. 1A, H314 Eye Dam. 1, H318 Met. Corr. 1, H290
heptane	(CAS-No.) 142-82-5 (EC-No.) 205-563-8	<= 0.99	Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315 STOT SE 3, H336 Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=1 Nota C
cyclohexane	(CAS-No.) 110-82-7 (EC-No.) 203-806-2	<= 0.99	Flam. Liq. 2, H225 Asp. Tox. 1, H304 Skin Irrit. 2, H315 STOT SE 3, H336 Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=1
ferbam (ISO)	(CAS-No.) 14484-64-1 (EC-No.) 238-484-2	<= 0.5	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	< 0.15	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
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. Remove contact lenses if easy to do. Continue rinsing. 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 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
cyclohexane	110-82-7	UK HSC	TWA:350 mg/m ³ (100 ppm);STEL:1050 mg/m ³ (300 ppm)	
sodium hydroxide	1310-73-2	UK HSC	STEL:2 mg/m ³	
Manganese, inorganic compounds	1313-13-9	UK HSC	TWA(as Mn, respirable fraction):0.05 mg/m ³ ;TWA(as Mn):0.5 mg/m ³	
heptane	142-82-5	UK HSC	TWA:2085 mg/m ³ (500 ppm)	
Quartz	14808-60-7	UK HSC	TWA(respirable):0.1 mg/m ³	
Terphenyl	26140-60-3	UK HSC	STEL:4.8 mg/m ³ (0.5 ppm)	
Hydrogenated terphenyl	61788-32-7	UK HSC	TWA:19 mg/m ³ (2 ppm);STEL:48 mg/m ³ (5 ppm)	
lead powder; [particle diameter < 1 mm]	7439-92-1	UK HSC	TWA(as Pb):0.15 mg/m ³	

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.

Derived no effect level (DNEL)

Ingredient	Degradation Product	Population	Human exposure pattern	DNEL
manganese dioxide		Worker	Dermal, Long-term exposure (8 hours), Systemic effects	0.004 mg/kg bw/d
manganese dioxide		Worker	Inhalation, Long-term exposure (8 hours),	0.2 mg/m ³

			Systemic effects	
Hydrogenated terphenyl		Worker	Dermal, Long-term exposure (8 hours), Local effects	0.2 mg/cm ²
Hydrogenated terphenyl		Worker	Dermal, Long-term exposure (8 hours), Systemic effects	46.3 mg/kg bw/d
Hydrogenated terphenyl		Worker	Inhalation, Long-term exposure (8 hours), Local effects	83.8 mg/m ³
Hydrogenated terphenyl		Worker	Inhalation, Long-term exposure (8 hours), Systemic effects	8.38 mg/m ³

Predicted no effect concentrations (PNEC)

Ingredient	Degradation Product	Compartment	PNEC
manganese dioxide		Agricultural soil	0.025 mg/kg d.w.
manganese dioxide		Freshwater	0.001 mg/l
manganese dioxide		Freshwater sediments	0.037 mg/kg d.w.
manganese dioxide		Marine water	0.001 mg/l
manganese dioxide		Marine water sediments	0.004 mg/kg d.w.
manganese dioxide		Sewage Treatment Plant	100 mg/l
Hydrogenated terphenyl		Agricultural soil	12.6 mg/kg d.w.
Hydrogenated terphenyl		Concentration in freshwater fish for secondary poisoning	2.22 mg/kg w.w.
Hydrogenated terphenyl		Freshwater sediments	63.2 mg/kg d.w.
Hydrogenated terphenyl		Intermittent releases to water	13.4 mg/l
Hydrogenated terphenyl		Marine water sediments	6.32 mg/kg d.w.
Hydrogenated terphenyl		Sewage Treatment Plant	10.3 mg/l

Recommended monitoring procedures: Information on recommended monitoring procedures can be obtained from UK HSC

8.2. Exposure controls

In addition, refer to the annex for more information.

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:
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.

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

8.2.3. Environmental exposure controls

Refer to Annex

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.

Density	1.58 g/ml
Relative density	>=1.58 [Ref Std: WATER=1]
Relative Vapor 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	No data available.
Molecular weight	Not applicable.

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 EU 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 internal hazard assessments.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

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

Skin Irritation: Signs/symptoms may include localised redness, swelling, itching, dryness, cracking, blistering, and pain.

Eye contact

Severe eye irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired 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 >5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE2,000 - 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
Bis(piperidinothiocarbonyl) hexasulphide	Ingestion	Rat	LD50 > 5,000 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
heptane	Dermal	Rabbit	LD50 > 3,000 mg/kg
heptane	Inhalation-Vapour (4 hours)	Rat	LC50 > 103 mg/l
heptane	Ingestion	Rat	LD50 > 15,000 mg/kg
cyclohexane	Dermal	Rat	LD50 > 2,000 mg/kg
cyclohexane	Inhalation-Vapour (4 hours)	Rat	LC50 > 32.9 mg/l
cyclohexane	Ingestion	Rat	LD50 > 6,200 mg/kg

3M Aerospace Sealant AC-730 B-1/2 Catalyst

Quartz	Dermal		LD50 estimated to be > 5,000 mg/kg
Quartz	Ingestion		LD50 estimated to be > 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
heptane	Human	Mild irritant
cyclohexane	Rabbit	Mild irritant
sodium hydroxide	Rabbit	Corrosive
Quartz	Professional judgement	No significant irritation
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
heptane	Professional judgement	Moderate irritant
cyclohexane	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

3M Aerospace Sealant AC-730 B-1/2 Catalyst

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
Bis(piperidinothiocarbonyl) hexasulphide	In Vitro	Not mutagenic
Terphenyl	In Vitro	Not mutagenic
Terphenyl	In vivo	Not mutagenic
heptane	In Vitro	Not mutagenic
cyclohexane	In Vitro	Not mutagenic
cyclohexane	In vivo	Some positive data exist, but the data are not sufficient for classification
sodium hydroxide	In Vitro	Not mutagenic
Quartz	In Vitro	Some positive data exist, but the data are not sufficient for classification
Quartz	In vivo	Some positive data exist, but the data are not sufficient for classification
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
Quartz	Inhalation	Human and animal	Carcinogenic.
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	prematuring 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
cyclohexane	Inhalation	Not classified for female reproduction	Rat	NOAEL 24 mg/l	2 generation
cyclohexane	Inhalation	Not classified for male reproduction	Rat	NOAEL 24 mg/l	2 generation
cyclohexane	Inhalation	Not classified for development	Rat	NOAEL 6.9 mg/l	2 generation
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	Toxic to male reproduction	Human	LOAEL 37	

3M Aerospace Sealant AC-730 B-1/2 Catalyst

	specified.			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
heptane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
heptane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
heptane	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
cyclohexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
cyclohexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
cyclohexane	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	
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
heptane	Inhalation	liver nervous system kidney and/or bladder	Not classified	Rat	NOAEL 12 mg/l	26 weeks
cyclohexane	Inhalation	liver	Not classified	Rat	NOAEL 24 mg/l	90 days
cyclohexane	Inhalation	auditory system	Not classified	Rat	NOAEL 1.7 mg/l	90 days
cyclohexane	Inhalation	kidney and/or	Not classified	Rabbit	NOAEL 2.7	10 weeks

3M Aerospace Sealant AC-730 B-1/2 Catalyst

		bladder			mg/l	
cyclohexane	Inhalation	hematopoietic system	Not classified	Mouse	NOAEL 24 mg/l	14 weeks
cyclohexane	Inhalation	peripheral nervous system	Not classified	Rat	NOAEL 8.6 mg/l	30 weeks
Quartz	Inhalation	silicosis	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
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

Name	Value
heptane	Aspiration hazard
cyclohexane	Aspiration hazard

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 EU 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.

3M Aerospace Sealant AC-730 B-1/2 Catalyst

Material	CAS #	Organism	Type	Exposure	Test endpoint	Test result
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
Hydrogenated terphenyl	61788-32-7		Data not available or insufficient for classification			N/A
Hydrogenated terphenyl	61788-32-7	Activated sludge	Experimental	3 hours	NOEC	103 mg/l
Polyphenyls, quater- and higher, partially hydrogenated	68956-74-1		Data not available or insufficient for classification			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
Quartz	14808-60-7	Green Algae	Estimated	72 hours	EC50	440 mg/l
Quartz	14808-60-7	Water flea	Estimated	48 hours	EC50	7,600 mg/l
Quartz	14808-60-7	Zebra Fish	Estimated	96 hours	LC50	5,000 mg/l
Quartz	14808-60-7	Green Algae	Estimated	72 hours	NOEC	60 mg/l
sodium hydroxide	1310-73-2		Data not available or insufficient for classification			N/A
cyclohexane	110-82-7	Bacteria	Experimental	24 hours	IC50	97 mg/l
cyclohexane	110-82-7	Fathead minnow	Experimental	96 hours	LC50	4.53 mg/l
cyclohexane	110-82-7	Water flea	Experimental	48 hours	EC50	0.9 mg/l
heptane	142-82-5	Water flea	Experimental	48 hours	EC50	1.5 mg/l
heptane	142-82-5	Water flea	Estimated	21 days	NOEC	0.17 mg/l
ferbam (ISO)	14484-64-1	Green Algae	Experimental	96 hours	EC50	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 < 1 mm]	7439-92-1	Fathead minnow	Analogous Compound	96 hours	LC50	0.0408 mg/l

3M Aerospace Sealant AC-730 B-1/2 Catalyst

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		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
manganese dioxide	1313-13-9	Data not availbl-insufficient			N/A	
Hydrogenated terphenyl	61788-32-7	Experimental Photolysis		Photolytic half-life(in water)	86 days (t 1/2)	
Hydrogenated terphenyl	61788-32-7	Experimental Biodegradation	35 days	CO2 evolution	1 %CO2 evolution/THC O2 evolution	OECD 301B - Modified sturm or CO2
Hydrogenated terphenyl	61788-32-7	Experimental Soil Metabolism Aerobic		Half-life (t 1/2)	202 days (t 1/2)	
Polyphenyls, quater- and higher, partially hydrogenated	68956-74-1	Data not availbl-insufficient			N/A	
Bis(piperidinothiocarbonyl) hexasulphide	971-15-3	Experimental Biodegradation	28 days	BOD	0 % BOD/ThBOD	OECD 301F - Manometric respirometry
Terphenyl	26140-60-3	Experimental Biodegradation	14 days	BOD	0.5 % BOD/ThBOD	OECD 301C - MITI test (I)
Quartz	14808-60-7	Data not availbl-insufficient			N/A	
sodium hydroxide	1310-73-2	Data not availbl-insufficient			N/A	
cyclohexane	110-82-7	Experimental Photolysis		Photolytic half-life (in air)	4.14 days (t 1/2)	Non-standard method
cyclohexane	110-82-7	Experimental Biodegradation	28 days	BOD	77 % BOD/ThBOD	OECD 301F - Manometric respirometry
heptane	142-82-5	Experimental Photolysis		Photolytic half-life (in air)	4.24 days (t 1/2)	Non-standard method
heptane	142-82-5	Experimental Biodegradation	28 days	BOD	101 % BOD/ThBOD	OECD 301C - MITI test (I)
ferbam (ISO)	14484-64-1	Experimental Hydrolysis		Hydrolytic half-life	≤31 minutes (t 1/2)	
ferbam (ISO)	14484-64-1	Estimated Biodegradation	14 days	BOD	0 % weight	OECD 301C - MITI test (I)
lead powder; [particle diameter < 1 mm]	7439-92-1	Data not availbl-insufficient			N/A	

12.3 : Bioaccumulative potential

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
manganese dioxide	1313-13-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Hydrogenated terphenyl	61788-32-7	Analogous Compound BCF - Bluegill	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
Polyphenyls, quater- and higher, partially hydrogenated	68956-74-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

3M Aerospace Sealant AC-730 B-1/2 Catalyst

Bis(piperidinothiocarbonyl) hexasulphide	971-15-3	Estimated Bioconcentration		Bioaccumulation factor	2.8	Estimated: Bioconcentration factor
Terphenyl	26140-60-3	Estimated BCF-Carp	60 days	Bioaccumulation factor	2300	OECD 305E - Bioaccumulation flow-through fish test
Quartz	14808-60-7	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
cyclohexane	110-82-7	Experimental BCF-Carp	56 days	Bioaccumulation factor	129	OECD 305E - Bioaccumulation flow-through fish test
heptane	142-82-5	Estimated Bioconcentration		Bioaccumulation factor	105	Estimated: Bioconcentration factor
ferbam (ISO)	14484-64-1	Experimental Bioconcentration		Log Kow	-1.6	Non-standard method
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	≥8 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 REACH PBT criteria
Hydrogenated terphenyl	61788-32-7	Meets REACH PBT criteria

12.6. Endocrine disrupting properties

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

12.7. Other adverse effects

No information available.

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

Exemption: For vessels containing a net quantity of 5 l or a net mass of 5 kg or less per single or inner packaging, special provision 375 (ADR), exemption per 2.10.2.7 (IMDG) or special provision A197 (IATA) may be applied, if applicable
 ADR: UN3082; Environmentally Hazardous Substance, Liquid, N.O.S. (Ferbam, Hydrogenated Terphenyl); 9; III; (-); M6.
 IATA: UN3082; Environmentally Hazardous Substance, Liquid, N.O.S. (Ferbam, Hydrogenated Terphenyl); 9; III.
 IMDG: UN3082; Environmentally Hazardous Substance, Liquid, N.O.S. (Ferbam, Hydrogenated Terphenyl); 9; III; Marine
 Pollutant: Ferbam, Hydrogenated Terphenyl; FA, SF.

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
Quartz	14808-60-7	Grp. 1: Carcinogenic to humans	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 through Annex XVII of REACH regulation to restrictions on the manufacture, placing on the market and use when present in certain dangerous substances, mixtures and articles. 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>
cyclohexane	110-82-7
lead powder; [particle diameter < 1 mm]	7439-92-1

Restriction status: listed in REACH Annex XVII

Restricted uses: See Annex XVII to Regulation (EC) No 1907/2006 for Conditions of Restriction

Authorization status under REACH:

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

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

Authorization status: listed in the Candidate List of Substances of Very High Concern for Authorization

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.

15.2. Chemical Safety Assessment

A chemical safety assessment has not been carried out for this mixture. Chemical safety assessments for the contained substances may have been carried out by the registrants of the substances in accordance with Regulation (EC) No 1907/2006, as amended.

SECTION 16: Other information

List of relevant H statements

EUH031	Contact with acid liberates toxic gas.
H225	Highly flammable liquid and vapour.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
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.
H336	May cause drowsiness or dizziness.
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.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
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:

Industrial Use of Adhesives and Sealants: Section 16: Annex information was modified.

Section 2: <125ml Precautionary - Prevention information was modified.

Label: CLP Precautionary - Prevention information was modified.

Label: CLP Target Organ Hazard Statement information was modified.

Section 3: Composition/ Information of ingredients table information was modified.

Section 04: First Aid - Symptoms and Effects (CLP) information was added.

Section 04: Information on toxicological effects information was modified.

Section 8: DNEL table row information was modified.

Section 8: Occupational exposure limit table information was modified.

Section 8: PNEC table row information was modified.

Section 11: Acute Toxicity table information was modified.

Section 11: Aspiration Hazard Table information was modified.

Section 11: Carcinogenicity Table information was modified.

Section 11: Germ Cell Mutagenicity Table information was modified.

Section 11: Reproductive Toxicity Table information was modified.

Section 11: Serious Eye Damage/Irritation Table information was modified.

Section 11: Skin Corrosion/Irritation Table information was modified.

Section 11: Skin Sensitization Table information was modified.

Section 11: Target Organs - Repeated Table information was modified.

Section 11: Target Organs - Single Table information was modified.

Section 12: Component ecotoxicity information information was modified.
 Section 12: Mobility in soil information information was modified.
 Section 12: PBT/vPvB table row information was modified.
 Section 12: Persistence and Degradability information information was modified.
 Section 12:Biocumulative potential information information was modified.
 Section 14 Classification Code – Regulation Data information was modified.
 Section 14 Control Temperature – Regulation Data information was modified.
 Section 14 Emergency Temperature – Regulation Data information was modified.
 Section 14 Hazard Class + Sub Risk – Regulation Data information was modified.
 Section 14 Multiplier – Regulation Data information was modified.
 Section 14 Other Dangerous Goods – Regulation Data information was modified.
 Section 14 Packing Group – Regulation Data information was modified.
 Section 14 Proper Shipping Name information was modified.
 Section 14 Segregation – Regulation Data information was modified.
 Section 14 Transport Category – Regulation Data information was modified.
 Section 14 Transport in bulk – Regulation Data information was modified.
 Section 14 Transport Not Permitted – Main Heading information was deleted.
 Section 14 Transport Not Permitted – Regulation Data information was deleted.
 Section 14 Tunnel Code – Regulation Data information was modified.
 Section 14 UN Number Column data information was modified.
 Section 15: Authorization status under REACH: SVHC Authorization ingredient information information was modified.
 Section 15: Carcinogenicity information information was modified.
 Section 15: Restrictions on manufacture ingredients information information was modified.
 Two-column table displaying the unique list of H Codes and statements (std phrases) for all components of the given material.
 information was modified.

Annex

1. Title	
Substance identification	Hydrogenated terphenyl; EC No. 262-967-7; CAS Nbr 61788-32-7;
Exposure Scenario Name	Industrial Use of Adhesives and Sealants
Lifecycle Stage	Use at industrial sites
Contributing activities	PROC 04 -Chemical production where opportunity for exposure arises PROC 05 -Mixing or blending in batch processes PROC 08b -Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC 10 -Roller application or brushing PROC 13 -Treatment of articles by dipping and pouring ERC 05 -Use at industrial site leading to inclusion into/onto article
Processes, tasks and activities covered	Application of product. Manual application of product. Mixing or blending of solid or liquid materials. Transfer of substance/mixture with dedicated engineering controls.
2. Operational conditions and risk management measures	
Operating Conditions	Physical state: Liquid. General operating conditions: Emission days per year: 220 days/year; Indoors with LEV and good general ventilation; Processing Temperature:: <= 40 degree Celsius; Task: PROC05; Duration of use: 4 hours/day; Task: PROC08b; Duration of use: 8 hours/day;

	<p>Task: PROC10; Duration of use: 4 hours/day;</p> <p>Task: PROC13; Duration of use: 8 hours/day;</p>
Risk management measures	<p>Under the operational conditions described above the following risk management measures apply:</p> <p>General risk management measures:</p> <p>Human health: None needed;</p> <p>Environmental: Industrial Sewage Treatment Plant; Waste Water treatment - Incineration; ;</p> <p>The following task-specific risk management measures apply in addition to those listed above:</p> <p>Task: Mixing; Human Health; Air-purifying Half-Mask (with gas/vapour-cartridge, that can be combined with a particulate filter) (APF 10);</p> <p>Task: PROC10; Human Health; Protective Gloves - Chemical resistant. Refer to Section 8 of the SDS for specific glove material.;</p> <p>Task: PROC13; Human Health; Protective Gloves - Chemical resistant. Refer to Section 8 of the SDS for specific glove material.;</p>
Waste management measures	Incinerate in a permitted hazardous waste incinerator;
3. Prediction of exposure	
Prediction of exposure	Human and environmental exposures are not expected to exceed the DNELs and PNECs when the identified risk management measures are adopted.

1. Title	
Substance identification	manganese dioxide; EC No. 215-202-6; CAS Nbr 1313-13-9;
Exposure Scenario Name	Professional Use of Adhesives and Sealants
Lifecycle Stage	Use at industrial sites
Contributing activities	PROC 05 -Mixing or blending in batch processes PROC 10 -Roller application or brushing PROC 13 -Treatment of articles by dipping and pouring ERC 05 -Use at industrial site leading to inclusion into/onto article
Processes, tasks and activities covered	Application of product with a roller or brush. Mixing or blending of solid or liquid materials.
2. Operational conditions and risk management measures	
Operating Conditions	<p>Physical state:Pasty</p> <p>General operating conditions: Duration of use; Emission days per year: 300 days/year; Processing Temperature:: <= 10 degree Celsius;</p> <p>Task: Mixing; Indoors with good general ventilation;</p>

	Task: Application of product without local exhaust ventilation; Indoors with enhanced general ventilation;
Risk management measures	Under the operational conditions described above the following risk management measures apply: General risk management measures: Human health: None needed; Environmental: None needed;
Waste management measures	No use-specific waste management measures are required for this product. Refer to Section 13 of main SDS for disposal instructions:
3. Prediction of exposure	
Prediction of exposure	Human and environmental exposures are not expected to exceed the DNELs and PNECs when the identified risk management measures are adopted.

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