# Safety Data Sheet



| | | | |
|---|---|---|---|
| **Document group:** | 33-5983-3 | **Version number:** | 6.02 |
| **Revision date:** | 27/02/2026 | **Supersedes date:** | 07/11/2024 |
| **Transportation version number:** | | | |

This Safety Data Sheet has been prepared in accordance with the REACH Regulation (1907/2006) as amended by Regulation (EU) 2020/878

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

**1.1. Product identifier**
3M™ Impact Resistant Structural Adhesive PNs 07333, 57333

**Product Identification Numbers**
60-4550-8333-1 60-4551-1451-6

7100050351 7100273723

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

**Identified uses**
Automotive.

**1.3. Details of the supplier of the safety data sheet**

**Address:** 3M Ireland Limited, 70 SIR JOHN ROGERSON'S QUAY, D02R296 DUBLIN 2
**Telephone:** +353 1 280 3555
**E Mail:** ner-productstewardship@mmm.com

**Website:** www.3M.com

**1.4. Emergency telephone number**
Emergency medical information: 8am-10pm (seven days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 DOV2NO, Ireland. Telephone Number: +353 (0)1 809 2166

**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:**

33-5984-1, 33-5988-2

## TRANSPORTATION INFORMATION

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 1B - Skin Corr. 1B; H314
Serious Eye Damage/Eye Irritation, Category 1 - Eye Dam. 1; H318
Skin Sensitization, Category 1 - Skin Sens. 1; H317
Germ Cell Mutagenicity, Category 2 - Muta. 2; H341
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**

**SIGNAL WORD**
DANGER.

**Symbols**
GHS05 (Corrosion) |GHS07 (Exclamation mark) |GHS08 (Health Hazard) |GHS09 (Environment) |

**Pictograms**

Contains:
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated; 3,3'-Oxybis(ethyleneoxy)bis(propylamine); bis-[4-(2,3-epoxipropoxi)phenyl]propane; Cyclohexanamine, 4,4'-methylenebis- ; 1-chloro

**HAZARD STATEMENTS:**

| | |
|---|---|
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H317 | May cause an allergic skin reaction. |
| H341 | Suspected of causing genetic defects. |
| H411 | Toxic to aquatic life with long lasting effects. |

**PRECAUTIONARY STATEMENTS**
**General:**

| | |
|---|---|
| P102 | Keep out of reach of children. |

**Prevention:**

| | |
|---|---|
| P260A | Do not breathe vapours. |
| P273 | Avoid release to the environment. |
| P280B | Wear protective gloves and eye/face protection. |

**Response:**

| | |
|---|---|
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P310 | Immediately call a POISON CENTRE or doctor/physician. |

**Disposal:**

| | |
|---|---|
| P501 | Dispose of contents/container in accordance with applicable local/regional/national/international regulations. |

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

**Revision information:**
Kit: Component document group number(s) information was modified.
Label: CLP Ingredients - kit components information was modified.
Section 1: Address information was modified.
Section 1: E-mail address information was modified.

# Safety Data Sheet



| | | | |
|---|---|---|---|
| **Document group:** | 33-5984-1 | **Version number:** | 6.00 |
| **Revision date:** | 18/07/2023 | **Supersedes date:** | 10/01/2023 |

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™ Impact Resistant Structural Adhesive Part A, PNs 07333, 57333

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

**Identified uses**
Automotive.

**1.3. Details of the supplier of the safety data sheet**

| | |
|---|---|
| **Address:** | 3M Ireland Limited, The Iveagh Building, The Park, Carrickmines, Dublin 18. |
| **Telephone:** | +353 1 280 3555 |
| **E Mail:** | tox.uk@mmm.com |
| **Website:** | www.3M.com |

**1.4. Emergency telephone number**
Emergency medical information: 8am-10pm (seven days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 DOV2NO, Ireland. Telephone Number: +353 (0)1 809 2166

## 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 1B - Skin Corr. 1B; H314
Serious Eye Damage/Eye Irritation, Category 1 - Eye Dam. 1; H318
Skin Sensitization, Category 1 - Skin Sens. 1; H317

For full text of H phrases, see Section 16.

**2.2. Label elements**

**CLP REGULATION (EC) No 1272/2008**

**SIGNAL WORD**
DANGER.

**Symbols**
GHS05 (Corrosion) |GHS07 (Exclamation mark) |

**Pictograms**

**Ingredients:**

| Ingredient | CAS Nbr | EC No. | % by Wt |
|---|---|---|---|
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | 4246-51-9 | 224-207-2 | 15 - 40 |
| 2-piperazin-1-ylethylamine | 140-31-8 | 205-411-0 | < 0.25 |
| 2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated | 68683-29-4 | | 5 - 10 |
| 4,4'-Methylenebis(cyclohexylamine) | 1761-71-3 | 217-168-8 | 5 - 9 |
| m-Xylene-.alpha.alpha'.-diamine | 1477-55-0 | 216-032-5 | 1 - 5 |
| 2,4,6-tris(dimethylaminomethyl)phenol | 90-72-2 | 202-013-9 | < 3 |
| Formaldehyde, polymer with benzenamine, hydrogenated | 135108-88-2 | 603-894-6 | < 2 |
| 1-chloro-2,3-epoxypropane | 106-89-8 | 203-439-8 | < 0.03 |

**HAZARD STATEMENTS:**

| | |
|---|---|
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H317 | May cause an allergic skin reaction. |

**PRECAUTIONARY STATEMENTS**

**Prevention:**

| | |
|---|---|
| P260A | Do not breathe vapours. |
| P280D | Wear protective gloves, protective clothing, and eye/face protection. |

**Response:**

| | |
|---|---|
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P310 | Immediately call a POISON CENTRE or doctor/physician. |
| P333 + P313 | If skin irritation or rash occurs: Get medical advice/attention. |

37% of the mixture consists of components of unknown acute oral toxicity.
37% of the mixture consists of components of unknown acute dermal toxicity.

Contains 42% of components with unknown hazards to the aquatic environment.

**2.3. Other hazards**

Persons previously sensitised to amines may develop a cross-sensitisation reaction to certain other amines.
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] |
|---|---|---|---|
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | (CAS-No.) 4246-51-9<br>(EC-No.) 224-207-2 | 15 - 40 | Skin Corr. 1B, H314<br>Eye Dam. 1, H318<br>Skin Sens. 1, H317 |
| Epoxy Copolymer (NJTS Reg No. 04499600-7155) | Trade Secret | 10 - 30 | Substance not classified as hazardous |
| 2-piperazin-1-ylethylamine | (CAS-No.) 140-31-8<br>(EC-No.) 205-411-0 | < 0.25 | Acute Tox. 3, H311<br>Acute Tox. 4, H302<br>Skin Corr. 1B, H314<br>Skin Sens. 1B, H317<br>Aquatic Chronic 3, H412<br>Repr. 2, H361d<br>STOT RE 1, H372 |
| Acrylic copolymer | Trade Secret | 5 - 15 | Substance not classified as hazardous |
| 2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated | (CAS-No.) 68683-29-4 | 5 - 10 | Skin Irrit. 2, H315<br>Skin Sens. 1A, H317 |
| Aluminium | (CAS-No.) 7429-90-5<br>(EC-No.) 231-072-3<br>(REACH-No.) 01-2119529243-45 | 5 - 10 | Flam. Sol. 1, H228<br>Water-react. 2, H261<br>Nota T |
| 4,4'-Methylenebis(cyclohexylamine) | (CAS-No.) 1761-71-3<br>(EC-No.) 217-168-8 | 5 - 9 | Acute Tox. 4, H302<br>Skin Corr. 1B, H314<br>Skin Sens. 1, H317<br>STOT SE 3, H335<br>STOT RE 2, H373 |
| Treated Inorganic Filler (NJTS Reg No. 04499600-7204) | Trade Secret | 3 - 7 | Substance with a national occupational exposure limit |
| Mineral Filler (NJTS Reg No. 04499600-7156) | Trade Secret | 1 - 5 | Substance not classified as hazardous |
| Treated Filler (NJTS Reg No. 04499600-7152) | Trade Secret | 1 - 5 | Substance with a national occupational exposure limit |
| Inorganic Filler (NJTS Reg No. 04499600-7153) | Trade Secret | 1 - 5 | Substance with a national occupational exposure limit |
| m-Xylene-.alpha.alpha'.-diamine | (CAS-No.) 1477-55-0<br>(EC-No.) 216-032-5 | 1 - 5 | Acute Tox. 4, H332<br>Acute Tox. 4, H302<br>Skin Corr. 1B, H314<br>Skin Sens. 1, H317<br>Aquatic Chronic 3, H412 |
| 2,4,6-tris(dimethylaminomethyl)phenol | (CAS-No.) 90-72-2<br>(EC-No.) 202-013-9 | < 3 | Acute Tox. 4, H302<br>Skin Corr. 1C, H314 |

| | | | |
|---|---|---|---|
| | | | Eye Dam. 1, H318 |
| Formaldehyde, polymer with benzenamine, hydrogenated | (CAS-No.) 135108-88-2<br>(EC-No.) 603-894-6 | < 2 | Acute Tox. 3, H301<br>Skin Corr. 1C, H314<br>Skin Sens. 1, H317<br>STOT RE 2, H373<br>Aquatic Chronic 3, H412 |
| Quartz | (CAS-No.) 14808-60-7<br>(EC-No.) 238-878-4 | < 0.2 | STOT RE 1, H372 |
| 1-chloro-2,3-epoxypropane | (CAS-No.) 106-89-8<br>(EC-No.) 203-439-8 | < 0.03 | Flam. Liq. 3, H226<br>Acute Tox. 3, H331<br>Acute Tox. 3, H311<br>Acute Tox. 3, H301<br>Skin Corr. 1B, H314<br>Skin Sens. 1A, H317<br>Carc. 1B, H350<br>Aquatic Chronic 3, H412<br>Repr. 2, H361f |
| lead powder; [particle diameter < 1 mm] | (CAS-No.) 7439-92-1<br>(EC-No.) 231-100-4 | < 0.015 | Repr. 1A, H360FD<br>Lact., H362<br>STOT SE 2, H371<br>STOT RE 2, H373<br>Aquatic Acute 1, H400,M=1<br>Aquatic Chronic 1, H410,M=10 |

Any entry in the Identifier(s) column that begins with the numbers 6, 7, 8, or 9 are a Provisional List Number provided by ECHA pending publication of the official EC Inventory Number for the substance.
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<br>(EC-No.) 231-100-4 | (C >= 0.03%) Repr. 1A, H360D |

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 flush with large amounts of water for at least 15 minutes. Remove contaminated clothing. Get immediate medical attention. Wash clothing before reuse.

**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. Do not induce vomiting. Get immediate 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:
Skin burns (localized redness, swelling, itching, intense pain, blistering, and tissue destruction). Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision). Harmful if swallowed.

**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.

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

**7.2. Conditions for safe storage including any incompatibilities**

Store away from heat. Store away from acids. Store away from oxidising agents.

**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 |
|---|---|---|---|---|
| 1-chloro-2,3-epoxypropane | 106-89-8 | Ireland OELs | TWA(8 hours):1.9 mg/m3;TWA(8 hours):1.9 mg/m3 | SKIN, SKIN; Resp+Dermal sensitizer |
| m-Xylene-.alpha.alpha'.-diamine | 1477-55-0 | Ireland OELs | TWA(8 hours):0.1 mg/m3 | |
| Quartz | 14808-60-7 | Ireland OELs | TWA(as respirable dust)(8 hours):0.1 mg/m3 | |
| Aluminium | 7429-90-5 | Ireland OELs | TWA(respirable fraction)(8 hours):1 mg/m3 | |
| lead powder; [particle diameter < 1 mm] | 7439-92-1 | Ireland OELs | TWA(8 hours):0.15 mg/m3 | |
| Inorganic Filler (NJTS Reg No. 04499600-7153) | Trade Secret | Ireland OELs | TWA(8 hours):5 mg/m3(2 fiber/cc) | |
| Treated Filler (NJTS Reg No. 04499600-7152) | Trade Secret | Ireland OELs | TWA(Total inhalable dust)(8 hours):10 mg/m3;TWA(as respirable dust)(8 hours):4 mg/m3 | |
| Treated Inorganic Filler (NJTS Reg No. 04499600-7204) | Trade Secret | Ireland OELs | TWA(Total inhalable dust)(8 hours):6 mg/m3;TWA(as respirable dust)(8 hours):2.4 mg/m3 | |

Ireland OELs : Ireland. OELs
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

**Biological limit values**

| Ingredient | CAS Nbr | Agency | Determinant | Biological Specimen | Sampling Time | Value | Additional comments |
|---|---|---|---|---|---|---|---|
| lead powder; [particle diameter < 1 mm] | 7439-92-1 | EU Binding BLVs | lead powder; [particle diameter < 1 mm] | Blood | DFLT | 70 ug/100ml | |

EU Binding BLVs : EU. Directive 98/24/EC: on the protection of workers from the risks related to chemical agents at work, Annex II Binding Biological Limit Values and Health Surveillance Measures
DFLT: Default.

**Recommended monitoring procedures:**Information on recommended monitoring procedures can be obtained from Indust. Inspect./Ministry (IE)

**8.2. Exposure controls**

**8.2.1. Engineering controls**

Provide ventilated enclosure for heat curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. 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. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
Gloves made from the following material(s) are recommended:

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

*Applicable Norms/Standards*
Use gloves tested to EN 374

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

**Respiratory protection**

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

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

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

## SECTION 9: Physical and chemical properties

**9.1. Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid. |
| **Specific Physical Form:** | Paste |
| **Colour** | Silver-Gray |
| **Odor** | Very Slight Acrylic |
| **Odour threshold** | *No data available.* |

| | |
|---|---|
| **Melting point/freezing point** | *No data available.* |
| **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** | 103.9 ºC [*Test Method:*Closed Cup] |
| **Autoignition temperature** | *No data available.* |
| **Decomposition temperature** | *No data available.* |
| **pH** | *substance/mixture is non-soluble (in water)* |
| **Kinematic Viscosity** | 46,610 mm²/sec |
| **Water solubility** | *No data available.* |
| **Solubility- non-water** | *No data available.* |
| **Partition coefficient: n-octanol/water** | *No data available.* |
| **Vapour pressure** | 666.6 Pa |
| **Density** | 1.18 g/ml |
| **Relative density** | 1.18 [*Ref Std:*WATER=1] |
| **Relative Vapour Density** | *No data available.* |

**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.* |
| **Percent volatile** | 0.3 % weight |

## 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.
Sparks and/or flames.

**10.5 Incompatible materials**
Strong acids.
Strong oxidising agents.

**10.6 Hazardous decomposition products**

| Substance | Condition |
|---|---|
| Aldehydes. | Not specified. |
| Carbon monoxide | Not specified. |
| Carbon dioxide. | Not specified. |

## 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**
May be harmful in contact with skin. Corrosive (skin burns): Signs/symptoms may include localised redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

**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**
Harmful if swallowed.
Gastrointestinal corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea; blood in the faeces and/or vomitus may also be seen. May cause additional health effects (see below).

**Additional Health Effects:**

**Prolonged or repeated exposure may cause target organ effects:**
Liver effects: Signs/symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice. Muscular effects: Signs/symptoms may include generalised muscle weakness, paralysis and atrophy. Kidney/Bladder effects: Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination.

**Reproductive/Developmental Toxicity:**
Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

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

**Additional information:**
Persons previously sensitised to amines may develop a cross-sensitisation reaction to certain other amines.

**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 >300 - =2,000 mg/kg |

| | | | |
|---|---|---|---|
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | Dermal | Rabbit | LD50 2,525 mg/kg |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | Ingestion | Rat | LD50 2,850 mg/kg |
| Aluminium | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| Aluminium | Ingestion | | LD50 estimated to be > 5,000 mg/kg |
| Aluminium | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 0.888 mg/l |
| 4,4'-Methylenebis(cyclohexylamine) | Dermal | Rabbit | LD50 2,110 mg/kg |
| 4,4'-Methylenebis(cyclohexylamine) | Ingestion | Rat | LD50 350 mg/kg |
| 2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated | Dermal | Rabbit | LD50 > 3,000 mg/kg |
| 2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated | Ingestion | Rat | LD50 > 15,300 mg/kg |
| Treated Inorganic Filler (NJTS Reg No. 04499600-7204) | Dermal | Rabbit | LD50 > 5,000 mg/kg |
| Treated Inorganic Filler (NJTS Reg No. 04499600-7204) | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 0.691 mg/l |
| Treated Inorganic Filler (NJTS Reg No. 04499600-7204) | Ingestion | Rat | LD50 > 5,110 mg/kg |
| Treated Filler (NJTS Reg No. 04499600-7152) | Dermal | Rat | LD50 > 2,000 mg/kg |
| Treated Filler (NJTS Reg No. 04499600-7152) | Inhalation-Dust/Mist (4 hours) | Rat | LC50 3 mg/l |
| Treated Filler (NJTS Reg No. 04499600-7152) | Ingestion | Rat | LD50 6,450 mg/kg |
| Mineral Filler (NJTS Reg No. 04499600-7156) | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| Mineral Filler (NJTS Reg No. 04499600-7156) | Ingestion | | LD50 estimated to be 2,000 - 5,000 mg/kg |
| 2,4,6-tris(dimethylaminomethyl)phenol | Dermal | Rat | LD50 1,280 mg/kg |
| 2,4,6-tris(dimethylaminomethyl)phenol | Ingestion | Rat | LD50 1,000 mg/kg |
| m-Xylene-.alpha.alpha'.-diamine | Dermal | Rabbit | LD50 > 2,000 mg/kg |
| m-Xylene-.alpha.alpha'.-diamine | Inhalation-Dust/Mist (4 hours) | Rat | LC50 1.2 mg/l |
| m-Xylene-.alpha.alpha'.-diamine | Ingestion | Rat | LD50 980 mg/kg |
| Formaldehyde, polymer with benzenamine, hydrogenated | Dermal | Rat | LD50 > 700 mg/kg |
| Formaldehyde, polymer with benzenamine, hydrogenated | Ingestion | Rat | LD50 300 mg/kg |
| Inorganic Filler (NJTS Reg No. 04499600-7153) | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| Inorganic Filler (NJTS Reg No. 04499600-7153) | Ingestion | | LD50 estimated to be 2,000 - 5,000 mg/kg |
| 2-piperazin-1-ylethylamine | Dermal | Rabbit | LD50 865 mg/kg |
| 2-piperazin-1-ylethylamine | Ingestion | Rat | LD50 1,470 mg/kg |
| Quartz | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| Quartz | Ingestion | | LD50 estimated to be > 5,000 mg/kg |
| 1-chloro-2,3-epoxypropane | Dermal | Rabbit | LD50 755 mg/kg |
| 1-chloro-2,3-epoxypropane | Inhalation-Vapour (4 hours) | Rat | LC50 1.7 mg/l |
| 1-chloro-2,3-epoxypropane | Ingestion | Rat | LD50 260 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 |
|---|---|---|
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | Rabbit | Corrosive |
| Aluminium | Rabbit | No significant irritation |
| 4,4'-Methylenebis(cyclohexylamine) | Rabbit | Corrosive |
| 2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated | Rabbit | Irritant |
| Treated Inorganic Filler (NJTS Reg No. 04499600-7204) | Rabbit | No significant irritation |
| Treated Filler (NJTS Reg No. 04499600-7152) | Rabbit | No significant irritation |
| 2,4,6-tris(dimethylaminomethyl)phenol | Rabbit | Corrosive |
| m-Xylene-.alpha.alpha'.-diamine | Rat | Corrosive |

| | | |
|---|---|---|
| Formaldehyde, polymer with benzenamine, hydrogenated | In vitro data | Corrosive |
| Inorganic Filler (NJTS Reg No. 04499600-7153) | Professional judgement | No significant irritation |
| 2-piperazin-1-ylethylamine | Rabbit | Corrosive |
| Quartz | Professional judgement | No significant irritation |
| 1-chloro-2,3-epoxypropane | Human and animal | Corrosive |
| lead powder; [particle diameter < 1 mm] | similar compounds | No significant irritation |

## Serious Eye Damage/Irritation

| Name | Species | Value |
|---|---|---|
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | Rabbit | Corrosive |
| Aluminium | Rabbit | No significant irritation |
| 4,4'-Methylenebis(cyclohexylamine) | Rabbit | Corrosive |
| 2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated | Rabbit | Mild irritant |
| Treated Inorganic Filler (NJTS Reg No. 04499600-7204) | Rabbit | No significant irritation |
| Treated Filler (NJTS Reg No. 04499600-7152) | Rabbit | No significant irritation |
| 2,4,6-tris(dimethylaminomethyl)phenol | Rabbit | Corrosive |
| m-Xylene-.alpha.alpha'.-diamine | Rabbit | Corrosive |
| Formaldehyde, polymer with benzenamine, hydrogenated | similar health hazards | Corrosive |
| Inorganic Filler (NJTS Reg No. 04499600-7153) | Professional judgement | No significant irritation |
| 2-piperazin-1-ylethylamine | Rabbit | Corrosive |
| 1-chloro-2,3-epoxypropane | Rabbit | Corrosive |
| lead powder; [particle diameter < 1 mm] | similar compounds | Mild irritant |

## Skin Sensitisation

| Name | Species | Value |
|---|---|---|
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | Professional judgement | Sensitising |
| Aluminium | Guinea pig | Not classified |
| 4,4'-Methylenebis(cyclohexylamine) | Guinea pig | Sensitising |
| 2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated | Guinea pig | Sensitising |
| Treated Inorganic Filler (NJTS Reg No. 04499600-7204) | Human and animal | Not classified |
| 2,4,6-tris(dimethylaminomethyl)phenol | Guinea pig | Not classified |
| m-Xylene-.alpha.alpha'.-diamine | Guinea pig | Sensitising |
| Formaldehyde, polymer with benzenamine, hydrogenated | Professional | Sensitising |

| | | |
|---|---|---|
| | judgement | |
| 2-piperazin-1-ylethylamine | Guinea pig | Sensitising |
| 1-chloro-2,3-epoxypropane | Human and animal | Sensitising |

## Respiratory Sensitisation

| Name | Species | Value |
|---|---|---|
| Aluminium | Human | Not classified |

## Germ Cell Mutagenicity

| Name | Route | Value |
|---|---|---|
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | In Vitro | Not mutagenic |
| Aluminium | In Vitro | Not mutagenic |
| Treated Inorganic Filler (NJTS Reg No. 04499600-7204) | In Vitro | Not mutagenic |
| Mineral Filler (NJTS Reg No. 04499600-7156) | In Vitro | Not mutagenic |
| 2,4,6-tris(dimethylaminomethyl)phenol | In Vitro | Not mutagenic |
| m-Xylene-.alpha.alpha'.-diamine | In Vitro | Not mutagenic |
| m-Xylene-.alpha.alpha'.-diamine | In vivo | Not mutagenic |
| Formaldehyde, polymer with benzenamine, hydrogenated | In Vitro | Not mutagenic |
| 2-piperazin-1-ylethylamine | In vivo | Not mutagenic |
| 2-piperazin-1-ylethylamine | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| 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 |
| 1-chloro-2,3-epoxypropane | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| 1-chloro-2,3-epoxypropane | In vivo | 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 |
|---|---|---|---|
| Treated Inorganic Filler (NJTS Reg No. 04499600-7204) | Not specified. | Mouse | Some positive data exist, but the data are not sufficient for classification |
| Quartz | Inhalation | Human and animal | Carcinogenic. |
| 1-chloro-2,3-epoxypropane | Dermal | Mouse | Not carcinogenic |
| 1-chloro-2,3-epoxypropane | Ingestion | Rat | Carcinogenic. |
| 1-chloro-2,3-epoxypropane | Inhalation | Rat | 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 |
|---|---|---|---|---|---|
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | Ingestion | Not classified for female reproduction | Rat | NOAEL 600 mg/kg/day | premating into lactation |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | Ingestion | Not classified for male reproduction | Rat | NOAEL 600 mg/kg/day | 59 days |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | Ingestion | Not classified for development | Rat | NOAEL 600 mg/kg/day | premating into lactation |
| Treated Inorganic Filler (NJTS Reg No. | Ingestion | Not classified for female reproduction | Rat | NOAEL 509 | 1 generation |

| | | | | | |
|---|---|---|---|---|---|
| 04499600-7204) | | | | mg/kg/day | |
| Treated Inorganic Filler (NJTS Reg No. 04499600-7204) | Ingestion | Not classified for male reproduction | Rat | NOAEL 497 mg/kg/day | 1 generation |
| Treated Inorganic Filler (NJTS Reg No. 04499600-7204) | Ingestion | Not classified for development | Rat | NOAEL 1,350 mg/kg/day | during organogenesis |
| Treated Filler (NJTS Reg No. 04499600-7152) | Ingestion | Not classified for development | Rat | NOAEL 625 mg/kg/day | premating & during gestation |
| m-Xylene-.alpha.alpha'.-diamine | Ingestion | Not classified for female reproduction | Rat | NOAEL 450 mg/kg/day | 1 generation |
| m-Xylene-.alpha.alpha'.-diamine | Ingestion | Not classified for male reproduction | Rat | NOAEL 450 mg/kg | 1 generation |
| m-Xylene-.alpha.alpha'.-diamine | Ingestion | Not classified for development | Rat | NOAEL 450 mg/kg/day | 1 generation |
| Formaldehyde, polymer with benzenamine, hydrogenated | Ingestion | Not classified for female reproduction | Rat | NOAEL 140 mg/kg/day | premating into lactation |
| Formaldehyde, polymer with benzenamine, hydrogenated | Ingestion | Not classified for male reproduction | Rat | NOAEL 140 mg/kg/day | 28 days |
| Formaldehyde, polymer with benzenamine, hydrogenated | Ingestion | Not classified for development | Rat | NOAEL 280 mg/kg/day | during gestation |
| 2-piperazin-1-ylethylamine | Ingestion | Not classified for female reproduction | Rat | NOAEL 598 mg/kg/day | premating & during gestation |
| 2-piperazin-1-ylethylamine | Ingestion | Not classified for male reproduction | Rat | NOAEL 409 mg/kg/day | 32 days |
| 2-piperazin-1-ylethylamine | Ingestion | Toxic to development | Rabbit | NOAEL 75 mg/kg/day | during gestation |
| 1-chloro-2,3-epoxypropane | Inhalation | Not classified for female reproduction | Rat | NOAEL 0.2 mg/l | 10 weeks |
| 1-chloro-2,3-epoxypropane | Inhalation | Not classified for development | Multiple animal species | NOAEL 0.09 mg/l | during organogenesis |
| 1-chloro-2,3-epoxypropane | Ingestion | Not classified for development | Multiple animal species | NOAEL 160 mg/kg/day | during gestation |
| 1-chloro-2,3-epoxypropane | Ingestion | Toxic to male reproduction | Rat | LOAEL 6.25 mg/kg/day | 23 days |
| 1-chloro-2,3-epoxypropane | Inhalation | Toxic to male reproduction | Rat | NOAEL 0.02 mg/l | 10 weeks |
| 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 | |

## Target Organ(s)

### Specific Target Organ Toxicity - single exposure

| Name | Route | Target Organ(s) | Value | Species | Test result | Exposure Duration |
|---|---|---|---|---|---|---|
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | similar health hazards | NOAEL Not available | |
| 4,4'-Methylenebis(cyclohexylamine) | Inhalation | respiratory irritation | May cause respiratory irritation | similar health hazards | NOAEL Not available | |
| 2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | similar health hazards | NOAEL not available | |
| Treated Filler (NJTS Reg No. 04499600-7152) | Inhalation | respiratory system | Not classified | Rat | NOAEL 0.812 mg/l | 90 minutes |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2,4,6-tris(dimethylaminomethyl) phenol | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | | NOAEL Not available | |
| m-Xylene-.alpha.alpha'.-diamine | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | Not available | NOAEL Not avaliable | |
| Formaldehyde, polymer with benzenamine, hydrogenated | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | similar health hazards | NOAEL Not available | |
| 2-piperazin-1-ylethylamine | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | | NOAEL Not available | |
| 1-chloro-2,3-epoxypropane | Inhalation | respiratory irritation | May cause respiratory irritation | Human | NOAEL not available | occupational exposure |
| 1-chloro-2,3-epoxypropane | Inhalation | liver | Some positive data exist, but the data are not sufficient for classification | Human | NOAEL not available | occupational exposure |
| 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 |
|---|---|---|---|---|---|---|
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | Ingestion | gastrointestinal tract \| heart \| endocrine system \| bone, teeth, nails, and/or hair \| hematopoietic system \| liver \| immune system \| muscles \| nervous system \| eyes \| kidney and/or bladder \| respiratory system \| vascular system | Not classified | Rat | NOAEL 600 mg/kg/day | 59 days |
| Aluminium | Inhalation | nervous system \| respiratory system | Not classified | Human | NOAEL Not available | occupational exposure |
| 4,4'-Methylenebis(cyclohexylamine) | Ingestion | liver \| muscles | May cause damage to organs though prolonged or repeated exposure | Rat | NOAEL 15 mg/kg/day | 36 days |
| Treated Inorganic Filler (NJTS Reg No. 04499600-7204) | Inhalation | respiratory system \| silicosis | Not classified | Human | NOAEL Not available | occupational exposure |
| Treated Filler (NJTS Reg No. 04499600-7152) | Inhalation | respiratory system | Not classified | Human | NOAEL Not available | occupational exposure |
| Mineral Filler (NJTS Reg No. 04499600-7156) | Inhalation | respiratory system | Not classified | Human | NOAEL Not available | occupational exposure |
| Mineral Filler (NJTS Reg No. 04499600-7156) | Inhalation | pulmonary fibrosis | Not classified | Human and animal | NOAEL Not available | |
| 2,4,6-tris(dimethylaminomethyl) phenol | Dermal | skin \| liver \| nervous system \| auditory system \| hematopoietic system \| eyes | Not classified | Rat | NOAEL 125 mg/kg/day | 28 days |
| m-Xylene-.alpha.alpha'.-diamine | Ingestion | endocrine system \| blood \| bone marrow | Not classified | Rat | NOAEL 600 mg/kg/day | 28 days |
| Formaldehyde, polymer with benzenamine, hydrogenated | Ingestion | kidney and/or bladder | May cause damage to organs though prolonged or repeated exposure | Rat | NOAEL 15 mg/kg/day | 28 days |
| Formaldehyde, polymer with benzenamine, hydrogenated | Ingestion | endocrine system \| hematopoietic system \| liver \| nervous system | Not classified | Rat | NOAEL 300 mg/kg/day | 28 days |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2-piperazin-1-ylethylamine | Dermal | skin | Not classified | Rat | NOAEL 100 mg/kg/day | 29 days |
| 2-piperazin-1-ylethylamine | Dermal | hematopoietic system \| nervous system \| kidney and/or bladder | Not classified | Rat | NOAEL 1,000 mg/kg/day | 29 days |
| 2-piperazin-1-ylethylamine | Inhalation | respiratory system | Causes damage to organs through prolonged or repeated exposure | Rat | NOAEL 0.2 mg/m³ | 13 weeks |
| 2-piperazin-1-ylethylamine | Inhalation | hematopoietic system \| eyes \| kidney and/or bladder | Not classified | Rat | NOAEL 53.8 mg/m³ | 13 weeks |
| 2-piperazin-1-ylethylamine | Ingestion | heart \| endocrine system \| hematopoietic system \| liver \| nervous system \| kidney and/or bladder | Not classified | Rat | NOAEL 598 mg/kg/day | 28 days |
| Quartz | Inhalation | silicosis | Causes damage to organs through prolonged or repeated exposure | Human | NOAEL Not available | occupational exposure |
| 1-chloro-2,3-epoxypropane | Inhalation | liver | Causes damage to organs through prolonged or repeated exposure | Rat | NOAEL 0.21 mg/l | 19 days |
| 1-chloro-2,3-epoxypropane | Inhalation | kidney and/or bladder | May cause damage to organs though prolonged or repeated exposure | Rat | NOAEL 0.04 mg/l | 136 weeks |
| 1-chloro-2,3-epoxypropane | Inhalation | endocrine system | Not classified | Rat | NOAEL 0.377 mg/l | 4 weeks |
| 1-chloro-2,3-epoxypropane | Inhalation | immune system | Not classified | Rat | LOAEL 0.211 mg/l | 4 weeks |
| 1-chloro-2,3-epoxypropane | Inhalation | heart | Not classified | Rat | NOAEL 0.02 mg/l | 98 days |
| 1-chloro-2,3-epoxypropane | Inhalation | nervous system | Not classified | Rat | NOAEL 0.002 mg/l | 98 days |
| 1-chloro-2,3-epoxypropane | Inhalation | respiratory system | Not classified | Multiple animal species | NOAEL 0.02 mg/l | 13 weeks |
| 1-chloro-2,3-epoxypropane | Inhalation | blood | Not classified | Rat | NOAEL 0.189 mg/l | 90 days |
| 1-chloro-2,3-epoxypropane | Ingestion | heart \| blood | Not classified | Rat | NOAEL 80 mg/kg/day | 12 weeks |
| 1-chloro-2,3-epoxypropane | Ingestion | liver | Not classified | Rat | NOAEL 25 mg/kg/day | 90 days |
| 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 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 |
|---|---|---|---|---|---|---|
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | 4246-51-9 | Bacteria | Experimental | 17 hours | EC50 | 4,000 mg/l |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | 4246-51-9 | Golden Orfe | Experimental | 96 hours | LC50 | >1,000 mg/l |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | 4246-51-9 | Green algae | Experimental | 72 hours | EC50 | >500 mg/l |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | 4246-51-9 | Water flea | Experimental | 48 hours | EC50 | 218.16 mg/l |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | 4246-51-9 | Green algae | Experimental | 72 hours | EC10 | 5.4 mg/l |
| Epoxy Copolymer (NJTS Reg No. 04499600-7155) | Trade Secret | N/A | Data not available or insufficient for classification | N/A | N/A | N/A |
| 2-piperazin-1-ylethylamine | 140-31-8 | Bacteria | Experimental | 17 hours | EC10 | 100 mg/l |
| 2-piperazin-1-ylethylamine | 140-31-8 | Golden Orfe | Experimental | 96 hours | LC50 | 368 mg/l |
| 2-piperazin-1-ylethylamine | 140-31-8 | Green algae | Experimental | 72 hours | EC50 | >1,000 mg/l |
| 2-piperazin-1-ylethylamine | 140-31-8 | Water flea | Experimental | 48 hours | EC50 | 58 mg/l |
| 2-piperazin-1-ylethylamine | 140-31-8 | Green algae | Experimental | 72 hours | NOEC | 31 mg/l |
| Acrylic copolymer | Trade Secret | N/A | Data not available or insufficient for classification | N/A | N/A | N/A |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated | 68683-29-4 | N/A | Data not available or insufficient for classification | N/A | N/A | N/A |
| Aluminium | 7429-90-5 | Fish | Experimental | 96 hours | No tox obs at lmt of water sol | >100 mg/l |
| Aluminium | 7429-90-5 | Green algae | Experimental | 72 hours | No tox obs at lmt of water sol | >100 mg/l |
| Aluminium | 7429-90-5 | Water flea | Experimental | 48 hours | No tox obs at lmt of water sol | >100 mg/l |
| Aluminium | 7429-90-5 | Green algae | Experimental | 72 hours | No tox obs at lmt of water sol | 100 mg/l |
| Aluminium | 7429-90-5 | Water flea | Experimental | 21 days | NOEC | 0.076 mg/l |
| 4,4'-Methylenebis(cyclohexylamine) | 1761-71-3 | Golden Orfe | Experimental | 96 hours | LC50 | >100 mg/l |
| 4,4'-Methylenebis(cyclohexylamine) | 1761-71-3 | Green algae | Experimental | 72 hours | EC50 | 140 mg/l |
| 4,4'-Methylenebis(cyclohexylamine) | 1761-71-3 | Water flea | Experimental | 48 hours | EC50 | 7.07 mg/l |
| 4,4'-Methylenebis(cyclohexylamine) | 1761-71-3 | Water flea | Analogous Compound | 21 days | NOEC | 4 mg/l |
| 4,4'-Methylenebis(cyclohexylamine) | 1761-71-3 | Green algae | Experimental | 72 hours | EC10 | 100 mg/l |
| 4,4'-Methylenebis(cyclohexylamine) | 1761-71-3 | Redworm | Analogous Compound | 56 days | EC10 | 228 mg/kg (Dry Weight) |
| 4,4'-Methylenebis(cyclohexylamine) | 1761-71-3 | Soil microbes | Analogous Compound | 28 days | EC10 | >1,000 mg/kg (Dry Weight) |
| 4,4'-Methylenebis(cyclohexylamine) | 1761-71-3 | Bacteria | Experimental | 30 minutes | EC50 | 156 mg/l |
| Treated Inorganic Filler (NJTS Reg No. 04499600-7204) | Trade Secret | N/A | Data not available or insufficient for classification | N/A | N/A | N/A |
| Inorganic Filler (NJTS Reg No. 04499600-7153) | Trade Secret | N/A | Data not available or insufficient for classification | N/A | N/A | N/A |
| Mineral Filler (NJTS Reg No. 04499600-7156) | Trade Secret | N/A | Data not available or insufficient for classification | N/A | N/A | N/A |
| m-Xylene-.alpha.alpha'.-diamine | 1477-55-0 | Activated sludge | Experimental | 30 minutes | EC50 | >1,000 mg/l |
| m-Xylene-.alpha.alpha'.-diamine | 1477-55-0 | Bacteria | Experimental | 16 hours | EC10 | 24 mg/l |
| m-Xylene-.alpha.alpha'.-diamine | 1477-55-0 | Green algae | Experimental | 72 hours | ErC50 | 28 mg/l |
| m-Xylene-.alpha.alpha'.-diamine | 1477-55-0 | Medaka | Experimental | 96 hours | LC50 | 87.6 mg/l |
| m-Xylene-.alpha.alpha'.-diamine | 1477-55-0 | Water flea | Experimental | 48 hours | EC50 | 15.2 mg/l |
| m-Xylene-.alpha.alpha'.-diamine | 1477-55-0 | Green algae | Experimental | 72 hours | NOEC | 9.8 mg/l |

| | | | | | | |
|---|---|---|---|---|---|---|
| m-Xylene-.alpha.alpha'.-diamine | 1477-55-0 | Water flea | Experimental | 21 days | NOEC | 4.7 mg/l |
| Treated Filler (NJTS Reg No. 04499600-7152) | Trade Secret | Green algae | Estimated | 72 hours | EC50 | >100 mg/l |
| Treated Filler (NJTS Reg No. 04499600-7152) | Trade Secret | Rainbow trout | Estimated | 96 hours | LC50 | >100 mg/l |
| Treated Filler (NJTS Reg No. 04499600-7152) | Trade Secret | Water flea | Estimated | 48 hours | EC50 | >100 mg/l |
| Treated Filler (NJTS Reg No. 04499600-7152) | Trade Secret | Green algae | Estimated | 72 hours | EC10 | >100 mg/l |
| 2,4,6-tris(dimethylaminomethyl)phenol | 90-72-2 | N/A | Experimental | 96 hours | LC50 | 718 mg/l |
| 2,4,6-tris(dimethylaminomethyl)phenol | 90-72-2 | Common Carp | Experimental | 96 hours | LC50 | >100 mg/l |
| 2,4,6-tris(dimethylaminomethyl)phenol | 90-72-2 | Green algae | Experimental | 72 hours | EC50 | 46.7 mg/l |
| 2,4,6-tris(dimethylaminomethyl)phenol | 90-72-2 | Water flea | Experimental | 48 hours | EC50 | >100 mg/l |
| 2,4,6-tris(dimethylaminomethyl)phenol | 90-72-2 | Green algae | Experimental | 72 hours | NOEC | 6.44 mg/l |
| Formaldehyde, polymer with benzenamine, hydrogenated | 135108-88-2 | Activated sludge | Experimental | 3 hours | EC50 | 186.7 mg/l |
| Formaldehyde, polymer with benzenamine, hydrogenated | 135108-88-2 | Green algae | Experimental | 72 hours | EC50 | 43.94 mg/l |
| Formaldehyde, polymer with benzenamine, hydrogenated | 135108-88-2 | Guppy | Experimental | 96 hours | LC50 | 63 mg/l |
| Formaldehyde, polymer with benzenamine, hydrogenated | 135108-88-2 | Water flea | Experimental | 48 hours | EC50 | 15.4 mg/l |
| Formaldehyde, polymer with benzenamine, hydrogenated | 135108-88-2 | Green algae | Experimental | 72 hours | EC10 | 1.2 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 |
| 1-chloro-2,3-epoxypropane | 106-89-8 | Bacteria | Experimental | 16 hours | LOEC | 55 mg/l |
| 1-chloro-2,3-epoxypropane | 106-89-8 | Fathead minnow | Experimental | 96 hours | LC50 | 10.6 mg/l |
| 1-chloro-2,3-epoxypropane | 106-89-8 | Green algae | Experimental | 72 hours | EC50 | 15 mg/l |
| 1-chloro-2,3-epoxypropane | 106-89-8 | Water flea | Experimental | 48 hours | EC50 | 23.9 mg/l |
| 1-chloro-2,3-epoxypropane | 106-89-8 | Green algae | Experimental | 72 hours | NOEC | 1.7 mg/l |
| lead powder; [particle diameter < 1 mm] | 7439-92-1 | Fathead minnow | Analogous Compound | 96 hours | LC50 | 0.0408 mg/l |
| 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 |
|---|---|---|---|---|---|---|
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | 4246-51-9 | Experimental Biodegradation | 25 days | CO2 evolution | -8 %CO2 evolution/THCO2 evolution | OECD 301B - Modified sturm or CO2 |
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | 4246-51-9 | Estimated Photolysis | | Photolytic half-life (in air) | 2.96 hours (t 1/2) | |
| Epoxy Copolymer (NJTS Reg No. 04499600-7155) | Trade Secret | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| 2-piperazin-1-ylethylamine | 140-31-8 | Experimental Biodegradation | 28 days | BOD | 0 %BOD/ThOD | OECD 301C - MITI test (I) |
| Acrylic copolymer | Trade Secret | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| 2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated | 68683-29-4 | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| Aluminium | 7429-90-5 | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| 4,4'-Methylenebis(cyclohexylamine) | 1761-71-3 | Analogous Compound Biodegradation | 28 days | BOD | 0 %BOD/ThOD | OECD 301C - MITI test (I) |
| 4,4'-Methylenebis(cyclohexylamine) | 1761-71-3 | Analogous Compound Aquatic Inherent Biodegrad. | 28 days | Percent degraded | <1 %removal of DOC | OECD 302B Zahn-Wellens/EVPA |
| Treated Inorganic Filler (NJTS Reg No. 04499600-7204) | Trade Secret | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| Inorganic Filler (NJTS Reg No. 04499600-7153) | Trade Secret | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| Mineral Filler (NJTS Reg No. 04499600-7156) | Trade Secret | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| m-Xylene-.alpha.alpha'.-diamine | 1477-55-0 | Experimental Biodegradation | 28 days | CO2 evolution | 49 %CO2 evolution/THCO2 evolution | OECD 301B - Modified sturm or CO2 |
| m-Xylene-.alpha.alpha'.-diamine | 1477-55-0 | Experimental Aquatic Inherent Biodegrad. | 28 days | BOD | 22 %BOD/ThOD | OECD 302C - Modified MITI (II) |
| Treated Filler (NJTS Reg No. 04499600-7152) | Trade Secret | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| 2,4,6-tris(dimethylaminomethyl)phenol | 90-72-2 | Experimental Biodegradation | 28 days | BOD | 4 %BOD/ThOD | OECD 301D - Closed bottle test |
| Formaldehyde, polymer with benzenamine, hydrogenated | 135108-88-2 | Experimental Biodegradation | 28 days | BOD | 0 %BOD/ThOD | |
| Quartz | 14808-60-7 | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| 1-chloro-2,3-epoxypropane | 106-89-8 | Estimated Biodegradation | 14 days | BOD | 68 %BOD/ThOD | OECD 301C - MITI test (I) |
| 1-chloro-2,3-epoxypropane | 106-89-8 | Experimental Hydrolysis | | Hydrolytic half-life | 3.9 days (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 |
|---|---|---|---|---|---|---|
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | 4246-51-9 | Experimental Bioconcentration | | Log Kow | -1.25 | |
| Epoxy Copolymer (NJTS Reg No. 04499600-7155) | Trade Secret | Estimated Bioconcentration | | Bioaccumulation factor | 2.9 | |
| 2-piperazin-1-ylethylamine | 140-31-8 | Experimental Bioconcentration | | Log Kow | 0.3 | |
| Acrylic copolymer | Trade Secret | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| 2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated | 68683-29-4 | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| Aluminium | 7429-90-5 | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| 4,4'-Methylenebis(cyclohexylamine) | 1761-71-3 | Analogous Compound BCF - Fish | | Bioaccumulation factor | <60 | OECD305-Bioconcentration |
| 4,4'-Methylenebis(cyclohexylamine) | 1761-71-3 | Experimental Bioconcentration | | Log Kow | 2.03 | OECD 107 log Kow shke flsk mtd |
| Treated Inorganic Filler (NJTS Reg No. 04499600-7204) | Trade Secret | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| Inorganic Filler (NJTS Reg No. 04499600-7153) | Trade Secret | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| Mineral Filler (NJTS Reg No. 04499600-7156) | Trade Secret | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| m-Xylene-.alpha.alpha'.-diamine | 1477-55-0 | Experimental BCF - Fish | 42 days | Bioaccumulation factor | <2.7 | OECD305-Bioconcentration |
| m-Xylene-.alpha.alpha'.-diamine | 1477-55-0 | Extrapolated Bioconcentration | | Log Kow | 0.18 | OECD 107 log Kow shke flsk mtd |
| Treated Filler (NJTS Reg No. 04499600-7152) | Trade Secret | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| 2,4,6-tris(dimethylaminomethyl)phenol | 90-72-2 | Experimental Bioconcentration | | Log Kow | -0.66 | 830.7550 Part.Coef Shake Flask |
| Formaldehyde, polymer with benzenamine, hydrogenated | 135108-88-2 | Experimental BCF - Fish | 56 days | Bioaccumulation factor | ≤ 219 | OECD305-Bioconcentration |
| Formaldehyde, polymer with benzenamine, hydrogenated | 135108-88-2 | Experimental Bioconcentration | | Log Kow | 2.68 | EC A.8 Partition Coefficient |
| Quartz | 14808-60-7 | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| 1-chloro-2,3-epoxypropane | 106-89-8 | Experimental Bioconcentration | | Log Kow | 0.45 | |
| 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 |
|---|---|---|---|---|---|
| 3,3'-Oxybis(ethyleneoxy)bis(propylamine) | 4246-51-9 | Modeled Mobility in Soil | Koc | 1 l/kg | ACD/Labs ChemSketch™ |
| 4,4'-Methylenebis(cyclohexylamine) | 1761-71-3 | Modeled Mobility in Soil | Koc | 1 l/kg | ACD/Labs ChemSketch™ |
| m-Xylene-.alpha.alpha'.-diamine | 1477-55-0 | Modeled Mobility in Soil | Koc | <1 l/kg | ACD/Labs ChemSketch™ |

**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. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

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

**EU waste code (product as sold)**

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

## SECTION 14: Transportation information

| | Ground Transport (ADR) | Air Transport (IATA) | Marine Transport (IMDG) |
|---|---|---|---|
| **14.1 UN number or ID number** | UN2735 | UN2735 | UN2735 |
| **14.2 UN proper shipping name** | AMINES, LIQUID, CORROSIVE, N.O.S.(BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL) | AMINES, LIQUID, CORROSIVE, N.O.S.(BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL) | AMINES, LIQUID, CORROSIVE, N.O.S.(BIS(3-AMINOPROPYL) ETHER OF DIETHYLENE GLYCOL; ALUMINUM) |

| | | | |
|---|---|---|---|
| **14.3 Transport hazard class(es)** | 8 | 8 | 8 |
| **14.4 Packing group** | II | II | II |
| **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 Marine Transport in bulk according to IMO instruments** | 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** | C7 | Not applicable. | Not applicable. |
| **IMDG Segregation Code** | Not applicable. | Not applicable. | 18 - ALKALIS |

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 |
|---|---|---|---|
| 1-chloro-2,3-epoxypropane | 106-89-8 | Carc. 1B | Regulation (EC) No. 1272/2008, Table 3.1 |
| 1-chloro-2,3-epoxypropane | 106-89-8 | Grp. 2A: Probable human carc. | 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 |
| Mineral Filler (NJTS Reg No. 04499600-7156) | Trade Secret | Gr. 3: Not classifiable | International Agency for Research on Cancer |
| Quartz | 14808-60-7 | Grp. 1: Carcinogenic to humans | International Agency for Research on Cancer |

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

| Ingredient | CAS Nbr |
|---|---|

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 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.

**DIRECTIVE 2012/18/EU**
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 |
| Aluminium | 7429-90-5 | 50 | 200 |
| 1-chloro-2,3-epoxypropane | 106-89-8 | 50 | 200 |
| lead powder; [particle diameter < 1 mm] | 7439-92-1 | 100 | 200 |

**Regulation (EU) No 649/2012**

| Chemical | Identifier(s) | Annex I |
|---|---|---|
| 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 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**

| | |
|---|---|
| H226 | Flammable liquid and vapour. |
| H228 | Flammable solid. |
| H261 | In contact with water releases flammable gas. |
| H301 | Toxic if swallowed. |
| 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. |
| H331 | Toxic if inhaled. |
| H332 | Harmful if inhaled. |
| H335 | May cause respiratory irritation. |
| H350 | May cause cancer. |
| H360FD | May damage fertility. May damage the unborn child. |
| H361d | Suspected of damaging the unborn child. |

| | |
|---|---|
| H361f | Suspected of damaging fertility. |
| 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. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H412 | Harmful to aquatic life with long lasting effects. |

**Revision information:**
Section 1: Product name information was modified.
CLP: Ingredient table information was modified.
Label: CLP Classification information was modified.
Label: CLP Percent Unknown information was modified.
Section 3: Composition/ Information of ingredients table information was modified.
Section 03: SCL table information was added.
Section 04: First Aid - Symptoms and Effects (CLP) information was modified.
BLV Reg Agency Desc information was added.
Section 8: BLV table information was added.
Section 8: BLV information was deleted.
Legend description information was added.
Section 8: Occupational exposure limit table information was modified.
Section 11: Acute Toxicity table information was modified.
Section 11: Cancer Hazards information information was added.
Section 11: Carcinogenicity Table information was modified.
Section 11: Germ Cell Mutagenicity Table information was modified.
Section 11: Health Effects - Inhalation information 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: Persistence and Degradability information information was modified.
Section 12:Bioccumulative potential information information was modified.
Section 14 Classification Code – Regulation Data information was modified.
Section 14 Hazard Class + Sub Risk – Regulation Data information was modified.
Section 14 Hazardous/Not Hazardous for Transportation 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 UN Number Column data information was modified.
Section 14: Transportation classification information was deleted.
Section 15: Authorization status under REACH: SVHC Authorization ingredient information information was added.
Section 15: Carcinogenicity information information was modified.
Section 15: Seveso Substance Text 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.

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 Ireland MSDSs are available at www.3M.com**

# Safety Data Sheet



| | | | |
|---|---|---|---|
| **Document group:** | 33-5988-2 | **Version number:** | 8.00 |
| **Revision date:** | 17/04/2026 | **Supersedes date:** | 15/05/2023 |

This Safety Data Sheet has been prepared in accordance with the REACH Regulation (1907/2006) as amended by Regulation (EU) 2020/878

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

**1.1. Product identifier**
3M™ Impact Resistant Structural Adhesive (Part B) PNs 07333, 57333

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

**Identified uses**
Automotive.

**1.3. Details of the supplier of the safety data sheet**

| | |
|---|---|
| **Address:** | 3M Ireland Limited, 70 SIR JOHN ROGERSON'S QUAY, D02R296 DUBLIN 2 |
| **Telephone:** | +353 1 280 3555 |
| **E Mail:** | ner-productstewardship@mmm.com |
| **Website:** | www.3M.com |

**1.4. Emergency telephone number**
Emergency medical information: 8am-10pm (seven days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 DOV2NO, Ireland. Telephone Number: +353 (0)1 809 2166

## 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:**
Skin Corrosion/Irritation, Category 2 - Skin Irrit. 2; H315
Serious Eye Damage/Eye Irritation, Category 2 - Eye Irrit. 2; H319
Skin Sensitization, Category 1 - Skin Sens. 1; H317
Germ Cell Mutagenicity, Category 2 - Muta. 2; H341
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**

**SIGNAL WORD**
WARNING.

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

**Pictograms**

**Ingredients:**

| Ingredient | CAS Nbr | EC No. | % by Wt |
|---|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | 1675-54-3 | 216-823-5 | 70 - 89 |
| Rxn mass: 2-({[1-chloro-3-({4-[methoxy(oxiran-2-yl)methyl]cyclohexyl}methoxy)propan-2-yl]oxy}methyl)oxirane & 2,2'-[cis-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane & 2,2'-[trans-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane | | 946-427-4 | 0.5 - 1.5 |

**HAZARD STATEMENTS:**

| | |
|---|---|
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H317 | May cause an allergic skin reaction. |
| H341 | Suspected of causing genetic defects. |
| H411 | Toxic to aquatic life with long lasting effects. |

**PRECAUTIONARY STATEMENTS**

**Prevention:**

| | |
|---|---|
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves and eye protection. |

**Response:**

| | |
|---|---|
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P333 + P313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P391 | Collect spillage. |

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

Contains 2% of components with unknown hazards to the aquatic environment.

**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] |
|---|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | (CAS-No.) 1675-54-3<br>(EC-No.) 216-823-5 | 70 - 89 | Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>Skin Sens. 1, H317<br>Aquatic Chronic 2, H411 |
| Synthetic Rubber | Trade Secret | 4 - 20 | Substance not classified as hazardous |
| Treated Filler | Trade Secret | 1 - 5 | Substance with a national occupational exposure limit |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | (CAS-No.) 131298-44-7<br>(EC-No.) ELINCS 421-090-1 | 1 - 5 | Substance not classified as hazardous |
| Inorganic Filler | (CAS-No.) 7631-86-9<br>(EC-No.) 231-545-4 | 1 - 5 | Substance with a national occupational exposure limit |
| Treated Inorganic Filler | Trade Secret | 1 - 5 | Substance not classified as hazardous |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | (CAS-No.) 2530-83-8<br>(EC-No.) 219-784-2<br>(REACH-No.) 01-2119513212-58 | < 2 | Eye Dam. 1, H318<br>Aquatic Chronic 3, H412 |
| Rxn mass: 2-({[1-chloro-3-({4-[methoxy(oxiran-2-yl)methyl]cyclohexyl}methoxy)propan-2-yl]oxy}methyl)oxirane & 2,2'-[cis-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane & 2,2'-[trans-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane | (EC-No.) 946-427-4 | 0.5 - 1.5 | Acute Tox. 4, H302<br>Skin Irrit. 2, H315<br>Skin Sens. 1, H317<br>Muta. 2, H341<br>Aquatic Chronic 3, H412 |
| phenolphthalein | (CAS-No.) 77-09-8<br>(EC-No.) 201-004-7 | < 0.4 | Muta. 2, H341<br>Carc. 1B, H350<br>Repr. 2, H361f<br>Skin Irrit. 2, H315<br>Repr. 2, H361d<br>Aquatic Chronic 2, H411 |

Any entry in the Identifier(s) column that begins with the numbers 6, 7, 8, or 9 are a Provisional List Number provided by ECHA pending publication of the official EC Inventory Number for the substance.
Please see section 16 for the full text of any H statements referred to in this section

**Specific Concentration Limits**

| Ingredient | Identifier(s) | Specific Concentration Limits |
|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | (CAS-No.) 1675-54-3<br>(EC-No.) 216-823-5 | (C >= 5%) Skin Irrit. 2, H315<br>(C >= 5%) Eye Irrit. 2, H319 |
| phenolphthalein | (CAS-No.) 77-09-8<br>(EC-No.) 201-004-7 | (C >= 1%) Carc. 1B, H350 |

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). Allergic skin reaction (redness, swelling, blistering, and itching). Serious irritation to the eyes (significant redness, swelling, pain, tearing, and impaired vision).

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

## SECTION 5: Fire-fighting measures

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

**5.2. Special hazards arising from the substance or mixture**
None inherent in this product.

**Hazardous Decomposition or By-Products**

| Substance | Condition |
|---|---|
| Aldehydes. | During combustion. |
| Carbon monoxide | During combustion. |
| Carbon dioxide. | During combustion. |
| Hydrogen Chloride | During combustion. |

**5.3. Advice for fire-fighters**

When fire fighting conditions are severe and total thermal decomposition of the product is possible, wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus,tunic and trousers (leggings),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. 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.

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

**7.2. Conditions for safe storage including any incompatibilities**
Store away from heat. Store away from acids. Store away from oxidising agents.

**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 |
|---|---|---|---|---|
| Inorganic Filler | 7631-86-9 | Ireland OELs | TWA(Total inhalable dust)(8 hours):6 mg/m3;TWA(as respirable dust)(8 hours):2.4 mg/m3 | |
| Treated Filler | Trade Secret | Ireland OELs | TWA(Total inhalable dust)(8 hours):10 mg/m3;TWA(as respirable dust)(8 hours):4 mg/m3 | |

Ireland OELs : Ireland. OELs
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 Indust. Inspect./Ministry (IE)

**8.2. Exposure controls**

**8.2.1. Engineering controls**
Provide ventilated enclosure for heat curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. 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.
Indirect vented goggles.

*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
Half facepiece or full facepiece supplied-air respirator

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
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** | Silver-Gray |
| **Odor** | Slight Epoxy |
| **Odour threshold** | *No data available.* |
| **Melting point/freezing point** | *No data available.* |
| **Boiling point/boiling range** | >=120 ºC [*Test Method:*Estimated] |
| **Flammability** | Not applicable. |
| **Flammable Limits(LEL)** | *No data available.* |
| **Flammable Limits(UEL)** | *No data available.* |
| **Flash point** | 103.9 ºC [*Test Method:*Closed Cup] |
| **Autoignition temperature** | *No data available.* |
| **Decomposition temperature** | *No data available.* |
| **pH** | *substance/mixture is non-soluble (in water)* |
| **Kinematic Viscosity** | 441,696 mm²/sec |
| **Water solubility** | *No data available.* |
| **Solubility- non-water** | *No data available.* |
| **Partition coefficient: n-octanol/water** | *No data available.* |
| **Vapour pressure** | 5 mm Hg |
| **Density** | 1.132 g/ml |
| **Relative density** | 1.132 [*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.* |
| **Percent volatile** | 0.1 % weight |

## 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.
Sparks and/or flames.

**10.5 Incompatible materials**
Strong acids.
Strong oxidising agents.

**10.6 Hazardous decomposition products**

| Substance | Condition |
|---|---|
| None known. | |

Refer to section 5.2 for hazardous decomposition products during combustion.

## SECTION 11: Toxicological information

**The information below may not agree with the 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**
Mild Skin Irritation: Signs/symptoms may include localised redness, swelling, itching, and dryness. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

**Eye contact**
Severe eye irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

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

**Additional Health Effects:**

**Reproductive/Developmental Toxicity:**
Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

**Genotoxicity:**
Genotoxicity and Mutagenicity: May interact with genetic material and possibly alter gene expression.

**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 ATE >5,000 mg/kg |
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | Dermal | Rat | LD50 > 1,600 mg/kg |
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | Ingestion | Rat | LD50 > 1,000 mg/kg |
| Treated Filler | Dermal | Rat | LD50 > 2,000 mg/kg |
| Treated Filler | Inhalation-Dust/Mist (4 hours) | Rat | LC50 3 mg/l |
| Treated Filler | Ingestion | Rat | LD50 6,450 mg/kg |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | Dermal | Rabbit | LD50 > 2,000 mg/kg |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 5.5 mg/l |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | Ingestion | Rat | LD50 > 5,000 mg/kg |
| Treated Inorganic Filler | Dermal | Rabbit | LD50 > 5,000 mg/kg |
| Treated Inorganic Filler | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 0.691 mg/l |
| Treated Inorganic Filler | Ingestion | Rat | LD50 > 5,110 mg/kg |
| Inorganic Filler | Dermal | Rabbit | LD50 > 5,000 mg/kg |
| Inorganic Filler | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 0.691 mg/l |
| Inorganic Filler | Ingestion | Rat | LD50 > 5,110 mg/kg |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | Dermal | Rabbit | LD50 4,000 mg/kg |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 5.3 mg/l |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | Ingestion | Rat | LD50 7,010 mg/kg |
| Rxn mass: 2-({[1-chloro-3-({4-[methoxy(oxiran-2-yl)methyl]cyclohexyl}methoxy)propan-2-yl]oxy}methyl)oxirane & 2,2'-[cis-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane & 2,2'-[trans-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane | Ingestion | Rat | LD50 1,000 mg/kg |
| phenolphthalein | Ingestion | Rat | LD50 > 10,500 mg/kg |
| phenolphthalein | Dermal | similar health hazards | LD50 estimated to be > 5,000 mg/kg |

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

| Name | Species | Value |
|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | Rabbit | Mild irritant |

| | | |
|---|---|---|
| Treated Filler | Rabbit | No significant irritation |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | Rabbit | Minimal irritation |
| Treated Inorganic Filler | Rabbit | No significant irritation |
| Inorganic Filler | Rabbit | No significant irritation |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | Rabbit | Mild irritant |
| Rxn mass: 2-({[1-chloro-3-({4-[methoxy(oxiran-2-yl)methyl]cyclohexyl}methoxy)propan-2-yl]oxy}methyl)oxirane & 2,2'-[cis-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane & 2,2'-[trans-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane | In vitro data | Irritant |
| phenolphthalein | In vitro data | Irritant |

## Serious Eye Damage/Irritation

| Name | Species | Value |
|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | Rabbit | Moderate irritant |
| Treated Filler | Rabbit | No significant irritation |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | Rabbit | Mild irritant |
| Treated Inorganic Filler | Rabbit | No significant irritation |
| Inorganic Filler | Rabbit | No significant irritation |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | Rabbit | Corrosive |
| Rxn mass: 2-({[1-chloro-3-({4-[methoxy(oxiran-2-yl)methyl]cyclohexyl}methoxy)propan-2-yl]oxy}methyl)oxirane & 2,2'-[cis-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane & 2,2'-[trans-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane | In vitro data | No significant irritation |
| phenolphthalein | In vitro data | No significant irritation |

## Skin Sensitisation

| Name | Species | Value |
|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | Human and animal | Sensitising |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | Guinea pig | Not classified |
| Treated Inorganic Filler | Human and animal | Not classified |
| Inorganic Filler | Human and animal | Not classified |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | Guinea pig | Not classified |
| Rxn mass: 2-({[1-chloro-3-({4-[methoxy(oxiran-2-yl)methyl]cyclohexyl}methoxy)propan-2-yl]oxy}methyl)oxirane & 2,2'-[cis-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane & 2,2'-[trans-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane | similar compounds | Sensitising |
| phenolphthalein | Mouse | Not classified |

## Respiratory Sensitisation

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

## Germ Cell Mutagenicity

| Name | Route | Value |
|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | In vivo | Not mutagenic |
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | In Vitro | Not mutagenic |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | In vivo | Not mutagenic |

| | | |
|---|---|---|
| Treated Inorganic Filler | In Vitro | Not mutagenic |
| Inorganic Filler | In Vitro | Not mutagenic |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | In vivo | Some positive data exist, but the data are not sufficient for classification |
| Rxn mass: 2-({[1-chloro-3-({4-[methoxy(oxiran-2-yl)methyl]cyclohexyl}methoxy)propan-2-yl]oxy}methyl)oxirane & 2,2'-[cis-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane & 2,2'-[trans-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane | In Vitro | Mutagenic; structurally related to germ cell mutagens |
| phenolphthalein | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| phenolphthalein | In vivo | Mutagenic |

## Carcinogenicity

| Name | Route | Species | Value |
|---|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | Dermal | Mouse | Some positive data exist, but the data are not sufficient for classification |
| Treated Inorganic Filler | Not specified. | Mouse | Some positive data exist, but the data are not sufficient for classification |
| Inorganic Filler | Not specified. | Mouse | Some positive data exist, but the data are not sufficient for classification |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | Dermal | Mouse | Not carcinogenic |
| phenolphthalein | Ingestion | Multiple animal species | Carcinogenic. |

## Reproductive Toxicity

## Reproductive and/or Developmental Effects

| Name | Route | Value | Species | Test result | Exposure Duration |
|---|---|---|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | Ingestion | Not classified for female reproduction | Rat | NOAEL 750 mg/kg/day | 2 generation |
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | Ingestion | Not classified for male reproduction | Rat | NOAEL 750 mg/kg/day | 2 generation |
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | Dermal | Not classified for development | Rabbit | NOAEL 300 mg/kg/day | during organogenesis |
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | Ingestion | Not classified for development | Rat | NOAEL 750 mg/kg/day | 2 generation |
| Treated Filler | Ingestion | Not classified for development | Rat | NOAEL 625 mg/kg/day | premating & during gestation |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | Ingestion | Not classified for female reproduction | Rat | NOAEL 641 mg/kg/day | 2 generation |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | Ingestion | Not classified for male reproduction | Rat | NOAEL 676 mg/kg/day | 2 generation |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | Ingestion | Not classified for development | Rat | NOAEL 191 mg/kg/day | 2 generation |
| Treated Inorganic Filler | Ingestion | Not classified for female reproduction | Rat | NOAEL 509 mg/kg/day | 1 generation |
| Treated Inorganic Filler | Ingestion | Not classified for male reproduction | Rat | NOAEL 497 mg/kg/day | 1 generation |
| Treated Inorganic Filler | Ingestion | Not classified for development | Rat | NOAEL 1,350 mg/kg/day | during organogenesis |
| Inorganic Filler | Ingestion | Not classified for female reproduction | Rat | NOAEL 509 mg/kg/day | 1 generation |
| Inorganic Filler | Ingestion | Not classified for male reproduction | Rat | NOAEL 497 mg/kg/day | 1 generation |
| Inorganic Filler | Ingestion | Not classified for development | Rat | NOAEL 1,350 mg/kg/day | during organogenesis |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | Ingestion | Not classified for female reproduction | Rat | NOAEL 1,000 mg/kg/day | 1 generation |

| | | | | | |
|---|---|---|---|---|---|
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | Ingestion | Not classified for male reproduction | Rat | NOAEL 1,000 mg/kg/day | 1 generation |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | Ingestion | Not classified for development | Rat | NOAEL 3,000 mg/kg/day | during organogenesis |
| phenolphthalein | Ingestion | Toxic to female reproduction | Mouse | NOAEL 150 mg/kg/day | 1 generation |
| phenolphthalein | Ingestion | Toxic to male reproduction | Mouse | NOAEL 150 mg/kg/day | 1 generation |
| phenolphthalein | Ingestion | Toxic to development | Mouse | NOAEL 150 mg/kg/day | 1 generation |

## Target Organ(s)

### Specific Target Organ Toxicity - single exposure

| Name | Route | Target Organ(s) | Value | Species | Test result | Exposure Duration |
|---|---|---|---|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | similar health hazards | NOAEL Not available | |
| Treated Filler | Inhalation | respiratory system | Not classified | Rat | NOAEL 0.812 mg/l | 90 minutes |
| Rxn mass: 2-({[1-chloro-3-({4-[methoxy(oxiran-2-yl)methyl]cyclohexyl}methoxy)propan-2-yl]oxy}methyl)oxirane & 2,2'-[cis-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane & 2,2'-[trans-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | similar health hazards | NOAEL Not available | |
| phenolphthalein | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | similar health hazards | NOAEL Not available | |

### Specific Target Organ Toxicity - repeated exposure

| Name | Route | Target Organ(s) | Value | Species | Test result | Exposure Duration |
|---|---|---|---|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | Dermal | liver | Not classified | Rat | NOAEL 1,000 mg/kg/day | 2 years |
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | Dermal | nervous system | Not classified | Rat | NOAEL 1,000 mg/kg/day | 13 weeks |
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | Ingestion | auditory system \| heart \| endocrine system \| hematopoietic system \| liver \| eyes \| kidney and/or bladder | Not classified | Rat | NOAEL 1,000 mg/kg/day | 28 days |
| Treated Filler | Inhalation | respiratory system | Not classified | Human | NOAEL Not available | occupational exposure |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | Ingestion | heart \| skin \| endocrine system \| gastrointestinal tract \| bone, teeth, nails, and/or hair \| hematopoietic system \| liver \| immune system \| muscles \| nervous system \| eyes \| kidney and/or | Not classified | Rat | NOAEL 619 mg/kg/day | 91 days |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | bladder \| respiratory system \| vascular system | | | | |
| Treated Inorganic Filler | Inhalation | respiratory system \| silicosis | Not classified | Human | NOAEL Not available | occupational exposure |
| Inorganic Filler | Inhalation | respiratory system \| silicosis | Not classified | Human | NOAEL Not available | occupational exposure |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | Ingestion | heart \| endocrine system \| bone, teeth, nails, and/or hair \| hematopoietic system \| liver \| immune system \| nervous system \| kidney and/or bladder \| respiratory system | Not classified | Rat | NOAEL 1,000 mg/kg/day | 28 days |
| phenolphthalein | Ingestion | liver \| heart \| skin \| endocrine system \| gastrointestinal tract \| bone, teeth, nails, and/or hair \| hematopoietic system \| immune system \| nervous system \| kidney and/or bladder \| respiratory system | Not classified | Rat | NOAEL 3,500 mg/kg/day | 13 weeks |

**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 |
|---|---|---|---|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | 1675-54-3 | Activated sludge | Analogous Compound | 3 hours | IC50 | >100 mg/l |
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | 1675-54-3 | Rainbow trout | Estimated | 96 hours | LC50 | 2 mg/l |
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | 1675-54-3 | Water flea | Estimated | 48 hours | EC50 | 1.8 mg/l |
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | 1675-54-3 | Green algae | Experimental | 72 hours | ErC50 | >11 mg/l |

| | | | | | | |
|---|---|---|---|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | 1675-54-3 | Green algae | Experimental | 72 hours | NOEC | 4.2 mg/l |
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | 1675-54-3 | Water flea | Experimental | 21 days | NOEC | 0.3 mg/l |
| Synthetic Rubber | Trade Secret | N/A | Data not available or insufficient for classification | N/A | N/A | N/A |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | 131298-44-7 | Green algae | Experimental | 96 hours | No tox obs at lmt of water sol | >100 mg/l |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | 131298-44-7 | Rainbow trout | Experimental | 96 hours | No tox obs at lmt of water sol | >100 mg/l |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | 131298-44-7 | Water flea | Experimental | 48 hours | No tox obs at lmt of water sol | >100 mg/l |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | 131298-44-7 | Fathead minnow | Experimental | 33 days | No tox obs at lmt of water sol | >100 mg/l |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | 131298-44-7 | Green algae | Experimental | 96 hours | No tox obs at lmt of water sol | >100 mg/l |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | 131298-44-7 | Midge | Experimental | 28 days | NOEC | 64.7 mg/kg (Dry Weight) |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | 131298-44-7 | Water flea | Experimental | 21 days | No tox obs at lmt of water sol | >100 mg/l |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | 131298-44-7 | Activated sludge | Experimental | 3 hours | EC50 | >100 mg/l |
| Inorganic Filler | 7631-86-9 | N/A | Data not available or insufficient for classification | N/A | N/A | N/A |
| Treated Filler | Trade Secret | Green algae | Estimated | 72 hours | EC50 | >100 mg/l |
| Treated Filler | Trade Secret | Rainbow trout | Estimated | 96 hours | LC50 | >100 mg/l |
| Treated Filler | Trade Secret | Water flea | Estimated | 48 hours | EC50 | >100 mg/l |
| Treated Filler | Trade Secret | Green algae | Estimated | 72 hours | EC10 | >100 mg/l |
| Treated Inorganic Filler | Trade Secret | N/A | Data not available or insufficient for classification | N/A | N/A | N/A |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | 2530-83-8 | Common Carp | Experimental | 96 hours | LC50 | 55 mg/l |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | 2530-83-8 | Green algae | Experimental | 96 hours | ErC50 | 350 mg/l |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | 2530-83-8 | Invertebrate | Experimental | 48 hours | LC50 | 324 mg/l |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | 2530-83-8 | Green algae | Experimental | 96 hours | NOEC | 130 mg/l |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | 2530-83-8 | Water flea | Experimental | 21 days | NOEC | 100 mg/l |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | 2530-83-8 | Activated sludge | Experimental | 3 hours | EC50 | >100 mg/l |
| Rxn mass: 2-({[1-chloro-3-({4-[methoxy(oxiran-2-yl)methyl]cyclohexyl}methoxy)propan-2-yl]oxy}methyl)oxirane & 2,2'-[cis-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane & 2,2'-[trans- | 946-427-4 | Green algae | Experimental | 72 hours | EC50 | 38 mg/l |

| | | | | | | |
|---|---|---|---|---|---|---|
| cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane | | | | | | |
| Rxn mass: 2-({[1-chloro-3-({4-[methoxy(oxiran-2-yl)methyl]cyclohexyl}methoxy)propan-2-yl]oxy}methyl)oxirane & 2,2'-[cis-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane & 2,2'-[trans-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane | 946-427-4 | Water flea | Experimental | 72 hours | EC50 | 71 mg/l |
| Rxn mass: 2-({[1-chloro-3-({4-[methoxy(oxiran-2-yl)methyl]cyclohexyl}methoxy)propan-2-yl]oxy}methyl)oxirane & 2,2'-[cis-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane & 2,2'-[trans-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane | 946-427-4 | Green algae | Experimental | 72 hours | EC10 | 18 mg/l |
| phenolphthalein | 77-09-8 | Green algae | Experimental | 72 hours | ErC50 | >3.33 mg/l |
| phenolphthalein | 77-09-8 | Water flea | Experimental | 48 hours | EC50 | 6.72 mg/l |
| phenolphthalein | 77-09-8 | Green algae | Experimental | 72 hours | ErC10 | 0.74 mg/l |

### 12.2. Persistence and degradability

| Material | CAS Nbr | Test type | Duration | Study Type | Test result | Protocol |
|---|---|---|---|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | 1675-54-3 | Experimental Biodegradation | 28 days | BOD | 5 %BOD/COD | OECD 301F - Manometric respirometry |
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | 1675-54-3 | Experimental Hydrolysis | | Hydrolytic half-life (pH 7) | 117 hours (t 1/2) | OECD 111 Hydrolysis func of pH |
| Synthetic Rubber | Trade Secret | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | 131298-44-7 | Experimental Biodegradation | 28 days | BOD | 77.7 %BOD/ThOD | OECD 301F - Manometric respirometry |
| Inorganic Filler | 7631-86-9 | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| Treated Filler | Trade Secret | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| Treated Inorganic Filler | Trade Secret | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | 2530-83-8 | Experimental Biodegradation | 28 days | Dissolv. Organic Carbon Deplet | 37 %removal of DOC | EC C.4.A. DOC Die-Away Test |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | 2530-83-8 | Experimental Hydrolysis | | Hydrolytic half-life (pH 7) | 6.5 hours (t 1/2) | OECD 111 Hydrolysis func of pH |
| Rxn mass: 2-({[1-chloro-3-({4-[methoxy(oxiran-2-yl)methyl]cyclohexyl}methoxy)propan-2- | 946-427-4 | Experimental Biodegradation | 28 days | CO2 evolution | 1.3 %CO2 evolution/THCO2 evolution | OECD 301B - Modified sturm or CO2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| yl]oxy}methyl)oxirane & 2,2'-[cis-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane & 2,2'-[trans-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane | | | | | | |
| phenolphthalein | 77-09-8 | Experimental Biodegradation | 28 days | BOD | 76 %BOD/ThOD | OECD 301F - Manometric respirometry |

### 12.3 : Bioaccumulative potential

| Material | Cas No. | Test type | Duration | Study Type | Test result | Protocol |
|---|---|---|---|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | 1675-54-3 | Experimental Bioconcentration | | Log Kow | 3.242 | OECD 117 log Kow HPLC method |
| Synthetic Rubber | Trade Secret | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | 131298-44-7 | Modeled Bioconcentration | | Bioaccumulation factor | 288 | Catalogic™ |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | 131298-44-7 | Experimental Bioconcentration | | Log Kow | 4.61 | EC A.8 Partition Coefficient |
| Inorganic Filler | 7631-86-9 | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| Treated Filler | Trade Secret | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| Treated Inorganic Filler | Trade Secret | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | 2530-83-8 | Experimental Bioconcentration | | Log Kow | 0.5 | Episuite™ |
| Rxn mass: 2-({[1-chloro-3-({4-[methoxy(oxiran-2-yl)methyl]cyclohexyl}methoxy)propan-2-yl]oxy}methyl)oxirane & 2,2'-[cis-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane & 2,2'-[trans-cyclohexane-1,4-diylbis(methyleneoxymethylene)]bisoxirane | 946-427-4 | Experimental Bioconcentration | | Log Kow | 2.05 | |
| phenolphthalein | 77-09-8 | Experimental Bioconcentration | | Log Kow | 0.9 | EC A.8 Partition Coefficient |

### 12.4. Mobility in soil

| Material | Cas No. | Test type | Study Type | Test result | Protocol |
|---|---|---|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | 1675-54-3 | Modeled Mobility in Soil | Koc | 450 l/kg | Episuite™ |
| Benzoic Acid, C9-C11-Branched Alkyl Esters | 131298-44-7 | Modeled Mobility in Soil | Koc | 2,600 l/kg | Episuite™ |
| [3-(2,3-epoxypropoxy)propyl]trimethoxysilane | 2530-83-8 | Modeled Mobility in Soil | Koc | 10 l/kg | Episuite™ |
| phenolphthalein | 77-09-8 | Modeled Mobility in Soil | Koc | 340 l/kg | Episuite™ |

### 12.5. Results of the PBT and vPvB assessment

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

**12.6. 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 |
| 20 01 27* | Paint, inks, adhesives and resins containing dangerous substances |

## SECTION 14: Transportation information

| | Ground Transport (ADR) | Air Transport (IATA) | Marine Transport (IMDG) |
|---|---|---|---|
| **14.1 - UN Number or ID number** | UN3082 | UN3082 | UN3082 |
| **14.2 UN proper shipping name** | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER) | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER) | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(4,4'-ISOPROPYLIDENEDIPHENOL-EPICHLOROHYDRIN POLYMER) |
| **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 Marine Transport in bulk according to IMO instruments** | 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**

| Ingredient | CAS Nbr | Classification | Regulation |
|---|---|---|---|
| bis-[4-(2,3-epoxipropoxi)phenyl]propane | 1675-54-3 | Gr. 3: Not classifiable | International Agency for Research on Cancer |
| Inorganic Filler | 7631-86-9 | Gr. 3: Not classifiable | International Agency for Research on Cancer |
| phenolphthalein | 77-09-8 | Carc. 1B | Regulation (EC) No. 1272/2008, Table 3.1 |
| phenolphthalein | 77-09-8 | Grp. 2B: Possible human carc. | 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.

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

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:

| Ingredient | CAS Nbr |
|---|---|
| phenolphthalein | 77-09-8 |

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 material are in compliance with the provisions of Japan Chemical Substance Control Law. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Japan Industrial Safety and Health Law. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. 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.

**DIRECTIVE 2012/18/EU**
Seveso hazard categories, Annex 1, Part 1

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

Seveso named dangerous substances, Annex 1, Part 2
None

**Regulation (EU) No 649/2012**
No chemicals listed

**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**

| | |
|---|---|
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H341 | Suspected of causing genetic defects. |
| H350 | May cause cancer. |
| H361df | Suspected of damaging fertility. Suspected of damaging the unborn child. |
| H411 | Toxic to aquatic life with long lasting effects. |
| H412 | Harmful to aquatic life with long lasting effects. |

**Revision information:**
EU Section 14 - Table Data information was added.
EU Section 14 - Table Headers information was added.

Section 1: Address information was modified.
Section 1: E-mail address information was modified.
CLP: Ingredient table information was modified.
Label: CLP Percent Unknown information was modified.
Label: CLP Precautionary - Prevention information was modified.
Label: Graphic information was modified.
Section 3: Composition/ Information of ingredients table information was modified.
Section 6: Accidental release personal information information was modified.
Section 7: Conditions safe storage information was modified.
Section 7: Precautions safe handling information information was modified.
Section 8: Occupational exposure limit table information was modified.
Section 08: Personal Protection - Apron Statement information was added.
Section 8: Personal Protection - Skin/body information information was deleted.
Section 8: Respiratory protection - recommended respirators information information was modified.
Section 8: Skin protection - protective clothing information information was deleted.
Section 9: Boiling point information information was modified.
Section 9: Flammability (solid, gas) information information was deleted.
Section 09: Flammability information information was added.
Section 09: Odor information was modified.
Section 09: Particle Characteristics N/A information was added.
Section 9: Vapour pressure value information was modified.
Section 11: Acute Toxicity table information was modified.
Section 11: Carcinogenicity Table information was modified.
Section 11: Germ Cell Mutagenicity Table information was modified.
Section 11: Health Effects - Inhalation information 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: Persistence and Degradability information information was modified.
Section 12:Bioccumulative potential information information was modified.
Section 13: Standard Phrase Category Waste GHS information was modified.
Section 14 Classification Code – Main Heading information was deleted.
Section 14 Classification Code – Regulation Data information was deleted.
Section 14 Control Temperature – Main Heading information was deleted.
Section 14 Control Temperature – Regulation Data information was deleted.
Section 14 Emergency Temperature – Main Heading information was deleted.
Section 14 Emergency Temperature – Regulation Data information was deleted.
Section 14 Hazard Class + Sub Risk – Main Heading information was deleted.
Section 14 Hazard Class + Sub Risk – Regulation Data information was deleted.
Section 14 Other Dangerous Goods – Main Heading information was deleted.
Section 14 Other Dangerous Goods – Regulation Data information was deleted.
Section 14 Packing Group – Main Heading information was deleted.
Section 14 Packing Group – Regulation Data information was deleted.
Section 14 Proper Shipping Name information was deleted.
Section 14 Regulations – Main Headings information was deleted.
Section 14 Segregation – Regulation Data information was deleted.
Section 14 Segregation Code – Main Heading information was deleted.
Section 14 Special Precautions – Main Heading information was deleted.
Section 14 Special Precautions – Regulation Data information was deleted.
Section 14 Transport in bulk – Regulation Data information was deleted.
Section 14 Marine transport in bulk according to IMO instruments – Main Heading information was deleted.

Section 14 UN Number Column data information was deleted.
Section 14 UN Number information was deleted.
Section 15: Carcinogenicity 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.

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 Ireland MSDSs are available at www.3M.com**