# Safety Data Sheet



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|---|---|---|---|
| **Document group:** | 10-8380-7 | **Version number:** | 12.00 |
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This Safety Data Sheet has been prepared in accordance with the REACH Regulation (1907/2006), as amended for GB.

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

**1.1. Product identifier**
3M™ Thermal Bonding Film 588

**Product Identification Numbers**
70-0025-1213-8 70-0060-3959-1

7000001105 7000048450

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

**Identified uses**
Adhesive

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

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

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

## SECTION 2: Hazard identification

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

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

**CLASSIFICATION:**

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 3 - Aquatic Chronic 3; H412

For full text of H phrases, see Section 16.

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

**SIGNAL WORD**
WARNING.

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

**Pictograms**

| Ingredient | CAS Nbr | EC No. | % by Wt |
|---|---|---|---|
| phenol-formaldehyde polymer | 9003-35-4 | 500-005-2 | 45 - 60 |
| acrylonitrile-butadiene polymer | 9003-18-3 | | 35 - 45 |
| rapeseel oil, sulfurized | 68153-37-7 | 268-883-7 | 1 - 5 |
| zinc oxide | 1314-13-2 | 215-222-5 | < 2.45 |
| amorphous silica | 7631-86-9 | 231-545-4 | <= 2 |
| phenol | 108-95-2 | 203-632-7 | <= 2 |
| benzothiazole-2-thiol | 149-30-4 | 205-736-8 | <= 0.5 |
| trimethyldihydroquinoline polymer | 26780-96-1 | 500-051-3 | <= 0.5 |

**HAZARD STATEMENTS:**

| | |
|---|---|
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H317 | May cause an allergic skin reaction. |
| H341 | Suspected of causing genetic defects. |
| H412 | Harmful to aquatic life with long lasting effects. |

**PRECAUTIONARY STATEMENTS**

**Prevention:**

| | |
|---|---|
| P280K | Wear protective gloves and respiratory protection. |

**Response:**

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

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

5% of the mixture consists of components of unknown acute dermal toxicity.
5% of the mixture consists of components of unknown acute inhalation toxicity.
Contains 5% 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], as amended for GB |
|---|---|---|---|
| phenol-formaldehyde polymer | (CAS-No.) 9003-35-4<br>(EC-No.) 500-005-2 | 45 - 60 | Skin Sens. 1, H317 |
| acrylonitrile-butadiene polymer | (CAS-No.) 9003-18-3 | 35 - 45 | Substance not classified as hazardous |
| rapeseel oil, sulfurized | (CAS-No.) 68153-37-7<br>(EC-No.) 268-883-7 | 1 - 5 | Substance not classified as hazardous |
| zinc oxide | (CAS-No.) 1314-13-2<br>(EC-No.) 215-222-5 | < 2.45 | Aquatic Acute 1, H400,M=1<br>Aquatic Chronic 1, H410,M=1 |
| amorphous silica | (CAS-No.) 7631-86-9<br>(EC-No.) 231-545-4 | <= 2 | Substance with a national occupational exposure limit |
| phenol | (CAS-No.) 108-95-2<br>(EC-No.) 203-632-7 | <= 2 | Acute Tox. 3, H331<br>Acute Tox. 3, H311<br>Acute Tox. 3, H301<br>Skin Corr. 1B, H314<br>Muta. 2, H341<br>STOT RE 2, H373<br>Aquatic Chronic 2, H411 |
| trimethyldihydroquinoline polymer | (CAS-No.) 26780-96-1<br>(EC-No.) 500-051-3 | <= 0.5 | Aquatic Chronic 3, H412 |
| benzothiazole-2-thiol | (CAS-No.) 149-30-4<br>(EC-No.) 205-736-8 | <= 0.5 | Skin Sens. 1, H317<br>Aquatic Acute 1, H400,M=1<br>Aquatic Chronic 1, H410,M=1 |

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

**Specific Concentration Limits**

| Ingredient | Identifier(s) | Specific Concentration Limits |
|---|---|---|

| | | |
|---|---|---|
| phenol | (CAS-No.) 108-95-2<br>(EC-No.) 203-632-7 | (C >= 3%) Skin Corr. 1B, H314<br>(1% =< C < 3%) Skin Irrit. 2, H315<br>(1% =< C < 3%) Eye Irrit. 2, H319 |

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

## SECTION 4: First aid measures

**4.1. Description of first aid measures**

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

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

**Eye contact**
Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

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

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

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

## SECTION 5: Fire-fighting measures

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

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

**Hazardous Decomposition or By-Products**

| Substance | Condition |
|---|---|
| Carbon monoxide | During combustion. |
| Carbon dioxide. | During combustion. |
| Oxides of nitrogen. | During combustion. |
| Oxides of sulphur. | During combustion. |

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

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Ventilate the area with fresh air. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

**6.2. Environmental precautions**
Avoid release to the environment.

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

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

## SECTION 7: Handling and storage

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

**7.2. Conditions for safe storage including any incompatibilities**
No special storage requirements.

**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 |
|---|---|---|---|---|
| phenol | 108-95-2 | UK HSC | TWA:7.8 mg/m3(2 ppm);STEL:16 mg/m3(4 ppm) | SKIN |
| DUST, INERT OR NUISANCE | 1314-13-2 | UK HSC | TWA(as respirable dust):4 mg/m3;TWA(as inhalable dust):10 mg/m3 | |
| DUST, INERT OR NUISANCE | 7631-86-9 | UK HSC | TWA(as respirable dust):4 mg/m3;TWA(as inhalable dust):10 mg/m3 | |

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

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

**8.2. Exposure controls**

**8.2.1. Engineering controls**

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

**8.2.2. Personal protective equipment (PPE)**

**Eye/face protection**

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

*Applicable Norms/Standards*
Use eye protection conforming to EN 166

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

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

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

Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

**Respiratory protection**

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

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

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

## SECTION 9: Physical and chemical properties

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

| | |
|---|---|
| **Physical state** | Solid. |
| **Specific Physical Form:** | Film |
| **Colour** | Colourless |
| **Odor** | Slight Phenolic |
| **Odour threshold** | *Not applicable.* |
| **Melting point/freezing point** | *No data available.* |
| **Boiling point/boiling range** | *Not applicable.* |
| **Flammability (solid, gas)** | Not classified |

| | |
|---|---|
| **Flammable Limits(LEL)** | *Not applicable.* |
| **Flammable Limits(UEL)** | *Not applicable.* |
| **Flash point** | >=93.9 ºC [*Details:*CONDITIONS: None ] |
| **Autoignition temperature** | *No data available.* |
| **Decomposition temperature** | *Not applicable.* |
| **pH** | *substance/mixture is non-soluble (in water)* |
| **Kinematic Viscosity** | *Not applicable.* |
| **Water solubility** | Nil |
| **Solubility- non-water** | *Not applicable.* |
| **Partition coefficient: n-octanol/water** | *No data available.* |
| **Vapour pressure** | *Not applicable.* |
| **Relative density** | approximately 1.1 [*Ref Std:*WATER=1] |
| **Relative Vapour Density** | *Not applicable.* |

**9.2. Other information**

**9.2.2 Other safety characteristics**

| | |
|---|---|
| **EU Volatile Organic Compounds** | *No data available.* |
| **Evaporation rate** | *Not applicable.* |
| **Molecular weight** | *No data available.* |
| **Percent volatile** | *Not applicable.* |

## SECTION 10: Stability and reactivity

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

**10.2 Chemical stability**
Stable.

**10.3 Possibility of hazardous reactions**
Hazardous polymerisation will not occur.

**10.4 Conditions to avoid**
None known.

**10.5 Incompatible materials**
None known.

**10.6 Hazardous decomposition products**

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

Refer to section 5.2 for hazardous decomposition products during combustion.

## SECTION 11: Toxicological information

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

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

**Signs and Symptoms of Exposure**

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

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

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

**Single exposure may cause target organ effects:**
Cardiac effects: Signs/symptoms may include irregular heartbeat (arrhythmia), changes in heart rate, damage to heart muscle, heart attack, and may be fatal. Hematopoietic effects: Signs/symptoms may include generalised weakness, fatigue and alterations in numbers of circulating blood cells. Neurological effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and changes in blood pressure and heart rate. Respiratory effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish coloured skin (cyanosis), sputum production, changes in lung function tests, and respiratory failure. 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.

**Prolonged or repeated exposure may cause target organ effects:**
Cardiac effects: Signs/symptoms may include irregular heartbeat (arrhythmia), changes in heart rate, damage to heart muscle, heart attack, and may be fatal. Hematopoietic effects: Signs/symptoms may include generalised weakness, fatigue and alterations in numbers of circulating blood cells. Liver effects: Signs/symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice. Neurological effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and changes in blood pressure and heart rate. Respiratory effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish coloured skin (cyanosis), sputum production, changes in lung function tests, and respiratory failure. 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.

**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 | Inhalation-Vapour(4 hr) | | No data available; calculated ATE >50 mg/l |

| | | | |
|---|---|---|---|
| Overall product | Ingestion | | No data available; calculated ATE >5,000 mg/kg |
| phenol-formaldehyde polymer | Dermal | Rat | LD50 > 2,000 mg/kg |
| phenol-formaldehyde polymer | Ingestion | Rat | LD50 > 2,900 mg/kg |
| acrylonitrile-butadiene polymer | Dermal | Rabbit | LD50 > 15,000 mg/kg |
| acrylonitrile-butadiene polymer | Ingestion | Rat | LD50 > 30,000 mg/kg |
| zinc oxide | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| zinc oxide | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 5.7 mg/l |
| zinc oxide | Ingestion | Rat | LD50 > 5,000 mg/kg |
| amorphous silica | Dermal | Rabbit | LD50 > 5,000 mg/kg |
| amorphous silica | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 0.691 mg/l |
| amorphous silica | Ingestion | Rat | LD50 > 5,110 mg/kg |
| phenol | Inhalation-Vapour | | LC50 estimated to be 2 - 10 mg/l |
| phenol | Dermal | Rat | LD50 670 mg/kg |
| phenol | Ingestion | Rat | LD50 340 mg/kg |
| benzothiazole-2-thiol | Dermal | Rabbit | LD50 > 7,940 mg/kg |
| benzothiazole-2-thiol | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 1.27 mg/l |
| benzothiazole-2-thiol | Ingestion | Rat | LD50 2,830 mg/kg |
| trimethyldihydroquinoline polymer | Dermal | Rabbit | LD50 > 5,010 mg/kg |
| trimethyldihydroquinoline polymer | Ingestion | Rat | LD50 3,190 mg/kg |

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

| Name | Species | Value |
|---|---|---|
| phenol-formaldehyde polymer | Human and animal | Mild irritant |
| acrylonitrile-butadiene polymer | Professional judgement | No significant irritation |
| zinc oxide | Human and animal | No significant irritation |
| amorphous silica | Rabbit | No significant irritation |
| phenol | Rat | Corrosive |
| benzothiazole-2-thiol | Rabbit | No significant irritation |
| trimethyldihydroquinoline polymer | Rabbit | No significant irritation |

**Serious Eye Damage/Irritation**

| Name | Species | Value |
|---|---|---|
| phenol-formaldehyde polymer | Human and animal | Moderate irritant |
| acrylonitrile-butadiene polymer | Professional judgement | No significant irritation |
| zinc oxide | Rabbit | Mild irritant |
| amorphous silica | Rabbit | No significant irritation |
| phenol | Rabbit | Corrosive |
| benzothiazole-2-thiol | Rabbit | Mild irritant |
| trimethyldihydroquinoline polymer | Rabbit | No significant irritation |

**Skin Sensitisation**

| Name | Species | Value |
|---|---|---|
| phenol-formaldehyde polymer | Human and animal | Sensitising |
| zinc oxide | Guinea pig | Not classified |
| amorphous silica | Human and animal | Not classified |
| phenol | Guinea pig | Not classified |
| benzothiazole-2-thiol | Human and animal | Sensitising |
| trimethyldihydroquinoline polymer | Guinea pig | Not classified |

**Respiratory Sensitisation**

| Name | Species | Value |
|---|---|---|
| phenol-formaldehyde polymer | Human | Not classified |

**Germ Cell Mutagenicity**

| Name | Route | Value |
|---|---|---|
| zinc oxide | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| zinc oxide | In vivo | Some positive data exist, but the data are not sufficient for classification |
| amorphous silica | In Vitro | Not mutagenic |
| phenol | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| phenol | In vivo | Some positive data exist, but the data are not sufficient for classification |
| benzothiazole-2-thiol | In vivo | Not mutagenic |
| benzothiazole-2-thiol | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| trimethyldihydroquinoline polymer | In Vitro | Not mutagenic |

**Carcinogenicity**

| Name | Route | Species | Value |
|---|---|---|---|
| amorphous silica | Not specified. | Mouse | Some positive data exist, but the data are not sufficient for classification |
| phenol | Dermal | Mouse | Some positive data exist, but the data are not sufficient for classification |
| phenol | Ingestion | Rat | Some positive data exist, but the data are not sufficient for classification |
| benzothiazole-2-thiol | Inhalation | Human | Carcinogenic. |
| benzothiazole-2-thiol | Ingestion | Multiple animal species | Carcinogenic. |
| trimethyldihydroquinoline polymer | Ingestion | Rat | Some positive data exist, but the data are not sufficient for classification |

**Reproductive Toxicity**

**Reproductive and/or Developmental Effects**

| Name | Route | Value | Species | Test result | Exposure Duration |
|---|---|---|---|---|---|
| zinc oxide | Ingestion | Not classified for reproduction and/or development | Multiple animal species | NOAEL 125 mg/kg/day | premating & during gestation |

| | | | | | |
|---|---|---|---|---|---|
| amorphous silica | Ingestion | Not classified for female reproduction | Rat | NOAEL 509 mg/kg/day | 1 generation |
| amorphous silica | Ingestion | Not classified for male reproduction | Rat | NOAEL 497 mg/kg/day | 1 generation |
| amorphous silica | Ingestion | Not classified for development | Rat | NOAEL 1,350 mg/kg/day | during organogenesis |
| phenol | Ingestion | Not classified for female reproduction | Rat | NOAEL 321 mg/kg/day | 2 generation |
| phenol | Ingestion | Not classified for male reproduction | Rat | NOAEL 321 mg/kg/day | 2 generation |
| phenol | Ingestion | Not classified for development | Rat | NOAEL 120 mg/kg/day | during organogenesis |
| benzothiazole-2-thiol | Ingestion | Not classified for female reproduction | Rat | NOAEL 745 mg/kg/day | 2 generation |
| benzothiazole-2-thiol | Ingestion | Not classified for male reproduction | Rat | NOAEL 788 mg/kg/day | 2 generation |
| benzothiazole-2-thiol | Ingestion | Not classified for development | Rabbit | NOAEL 300 mg/kg/day | during organogenesis |
| trimethyldihydroquinoline polymer | Ingestion | Not classified for development | Rat | NOAEL 120 mg/kg/day | during organogenesis |

## Target Organ(s)

### Specific Target Organ Toxicity - single exposure

| Name | Route | Target Organ(s) | Value | Species | Test result | Exposure Duration |
|---|---|---|---|---|---|---|
| phenol-formaldehyde polymer | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | Human and animal | NOAEL Not available | |
| phenol | Dermal | hematoppoitic system | Causes damage to organs | Rat | LOAEL 108 mg/kg | not available |
| phenol | Dermal | heart \| nervous system \| kidney and/or bladder | Causes damage to organs | Rat | LOAEL 107 mg/kg | 24 hours |
| phenol | Dermal | liver | Not classified | Human | NOAEL Not available | not available |
| phenol | Inhalation | respiratory irritation | May cause respiratory irritation | Multiple animal species | NOAEL Not available | not available |
| phenol | Ingestion | kidney and/or bladder | Causes damage to organs | Rat | NOAEL 120 mg/kg/day | not applicable |
| phenol | Ingestion | respiratory system | Causes damage to organs | Human | NOAEL not available | poisoning and/or abuse |
| phenol | Ingestion | endocrine system \| liver | Not classified | Rat | NOAEL 224 mg/kg | not applicable |
| phenol | 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 |
|---|---|---|---|---|---|---|
| phenol-formaldehyde polymer | Inhalation | respiratory system | Some positive data exist, but the data are not sufficient for classification | Human | NOAEL Not available | occupational exposure |
| zinc oxide | Ingestion | nervous system | Not classified | Rat | NOAEL 600 mg/kg/day | 10 days |
| zinc oxide | Ingestion | endocrine system \| hematopoietic system \| kidney and/or bladder | Not classified | Other | NOAEL 500 mg/kg/day | 6 months |
| amorphous silica | Inhalation | respiratory system \| silicosis | Not classified | Human | NOAEL Not available | occupational exposure |
| phenol | Dermal | nervous system | May cause damage to organs though prolonged or repeated exposure | Rabbit | LOAEL 260 mg/kg/day | 18 days |

| | | | | | | |
|---|---|---|---|---|---|---|
| phenol | Inhalation | heart \| liver \| kidney and/or bladder \| respiratory system | Causes damage to organs through prolonged or repeated exposure | Guinea pig | LOAEL 0.1 mg/l | 41 days |
| phenol | Inhalation | nervous system | May cause damage to organs though prolonged or repeated exposure | Multiple animal species | LOAEL 0.1 mg/l | 14 days |
| phenol | Inhalation | hematopoietic system | Not classified | Human | NOAEL Not available | occupational exposure |
| phenol | Inhalation | immune system | Not classified | Rat | NOAEL 0.1 mg/l | 2 weeks |
| phenol | Ingestion | kidney and/or bladder | Causes damage to organs through prolonged or repeated exposure | Rat | NOAEL 12 mg/kg/day | 14 days |
| phenol | Ingestion | hematopoietic system | Causes damage to organs through prolonged or repeated exposure | Mouse | LOAEL 1.8 mg/kg/day | 28 days |
| phenol | Ingestion | nervous system | May cause damage to organs though prolonged or repeated exposure | Rat | LOAEL 308 mg/kg/day | 13 weeks |
| phenol | Ingestion | liver | Not classified | Rat | NOAEL 40 mg/kg/day | 14 days |
| phenol | Ingestion | respiratory system | Not classified | Rat | LOAEL 40 mg/kg/day | 14 days |
| phenol | Ingestion | immune system | Not classified | Mouse | NOAEL 1.8 mg/kg/day | 28 days |
| phenol | Ingestion | endocrine system | Not classified | Rat | NOAEL 120 mg/kg/day | 14 days |
| phenol | Ingestion | skin \| bone, teeth, nails, and/or hair | Not classified | Multiple animal species | NOAEL 1,204 mg/kg/day | 103 weeks |
| benzothiazole-2-thiol | Ingestion | gastrointestinal tract \| kidney and/or bladder \| heart \| endocrine system \| bone, teeth, nails, and/or hair \| hematopoietic system \| liver \| immune system \| nervous system \| eyes \| respiratory system | Not classified | Rat | NOAEL 375 mg/kg/day | 2 years |
| trimethyldihydroquinoline polymer | Ingestion | endocrine system \| liver \| heart \| skin \| gastrointestinal tract \| bone, teeth, nails, and/or hair \| hematopoietic system \| immune system \| muscles \| nervous system \| eyes \| kidney and/or bladder \| respiratory system \| vascular system | Not classified | Rat | NOAEL 48 mg/kg/day | 2 years |

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

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

**11.2. Information on other hazards**

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

# SECTION 12: Ecological information

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

### 12.1. Toxicity

No product test data available.

| Material | CAS # | Organism | Type | Exposure | Test endpoint | Test result |
|---|---|---|---|---|---|---|
| phenol-formaldehyde polymer | 9003-35-4 | N/A | Data not available or insufficient for classification | N/A | N/A | n/a |
| acrylonitrile-butadiene polymer | 9003-18-3 | N/A | Data not available or insufficient for classification | N/A | N/A | N/A |
| rapeseel oil, sulfurized | 68153-37-7 | N/A | Data not available or insufficient for classification | N/A | N/A | N/A |
| zinc oxide | 1314-13-2 | Activated sludge | Estimated | 3 hours | EC50 | 6.5 mg/l |
| zinc oxide | 1314-13-2 | Green algae | Estimated | 72 hours | EC50 | 0.052 mg/l |
| zinc oxide | 1314-13-2 | Rainbow trout | Estimated | 96 hours | LC50 | 0.21 mg/l |
| zinc oxide | 1314-13-2 | Water flea | Estimated | 48 hours | EC50 | 0.07 mg/l |
| zinc oxide | 1314-13-2 | Green algae | Estimated | 72 hours | NOEC | 0.006 mg/l |
| zinc oxide | 1314-13-2 | Water flea | Estimated | 7 days | NOEC | 0.02 mg/l |
| amorphous silica | 7631-86-9 | Green algae | Experimental | 72 hours | ErC50 | >173.1 mg/l |
| amorphous silica | 7631-86-9 | Rainbow trout | Experimental | 96 hours | LC50 | >1,000 mg/l |
| amorphous silica | 7631-86-9 | Sediment organism | Experimental | 96 hours | EC50 | 8,500 mg/kg (Dry Weight) |
| amorphous silica | 7631-86-9 | Water flea | Experimental | 48 hours | EL50 | >1,000 mg/l |
| amorphous silica | 7631-86-9 | Green algae | Experimental | 72 hours | NOEC | 173.1 mg/l |
| amorphous silica | 7631-86-9 | Water flea | Experimental | 21 days | NOEC | 68 mg/l |
| amorphous silica | 7631-86-9 | Activated sludge | Experimental | 3 hours | EC50 | >1,000 mg/l |
| amorphous silica | 7631-86-9 | Redworm | Experimental | 56 days | NOEC | 100,000 mg/kg (Dry Weight) |
| phenol | 108-95-2 | Bacteria | Experimental | 24 hours | IC50 | 21 mg/l |
| phenol | 108-95-2 | Green algae | Experimental | 96 hours | EC50 | 61.1 mg/l |
| phenol | 108-95-2 | Rainbow trout | Experimental | 96 hours | LC50 | 8.9 mg/l |
| phenol | 108-95-2 | Water flea | Experimental | 48 hours | EC50 | 3.1 mg/l |
| phenol | 108-95-2 | Fish | Experimental | 60 days | NOEC | 0.077 mg/l |
| phenol | 108-95-2 | Water flea | Experimental | 16 days | NOEC | 0.16 mg/l |
| benzothiazole-2-thiol | 149-30-4 | Green algae | Experimental | 72 hours | ErC50 | 0.5 mg/l |
| benzothiazole-2-thiol | 149-30-4 | Rainbow trout | Experimental | 96 hours | LC50 | 0.42 mg/l |
| benzothiazole-2-thiol | 149-30-4 | Water flea | Experimental | 48 hours | EC50 | 0.71 mg/l |

| | | | | | | |
|---|---|---|---|---|---|---|
| benzothiazole-2-thiol | 149-30-4 | Green algae | Experimental | 72 hours | NOEC | 0.066 mg/l |
| benzothiazole-2-thiol | 149-30-4 | Water flea | Experimental | 21 days | NOEC | 0.08 mg/l |
| trimethyldihydroquinoline polymer | 26780-96-1 | Activated sludge | Experimental | 3 hours | EC50 | >10,000 mg/l |
| trimethyldihydroquinoline polymer | 26780-96-1 | Green algae | Experimental | 72 hours | No tox obs at lmt of water sol | >100 mg/l |
| trimethyldihydroquinoline polymer | 26780-96-1 | Water flea | Experimental | 48 hours | EL50 | 56 mg/l |
| trimethyldihydroquinoline polymer | 26780-96-1 | Zebra Fish | Experimental | 96 hours | No tox obs at lmt of water sol | >100 mg/l |

### 12.2. Persistence and degradability

| Material | CAS Nbr | Test type | Duration | Study Type | Test result | Protocol |
|---|---|---|---|---|---|---|
| phenol-formaldehyde polymer | 9003-35-4 | Estimated Biodegradation | 28 days | BOD | 3 %BOD/ThOD | |
| acrylonitrile-butadiene polymer | 9003-18-3 | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| rapeseel oil, sulfurized | 68153-37-7 | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| zinc oxide | 1314-13-2 | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| amorphous silica | 7631-86-9 | Data not availbl-insufficient | N/A | N/A | N/A | N/A |
| phenol | 108-95-2 | Experimental Biodegradation | 100 hours | BOD | 62 %BOD/ThOD | OECD 301C - MITI test (I) |
| benzothiazole-2-thiol | 149-30-4 | Experimental Biodegradation | 14 days | BOD | 2.5 %BOD/ThOD | OECD 301C - MITI test (I) |
| trimethyldihydroquinoline polymer | 26780-96-1 | Experimental Biodegradation | 28 days | BOD | 0 %BOD/ThOD | OECD 301C - MITI test (I) |

### 12.3 : Bioaccumulative potential

| Material | Cas No. | Test type | Duration | Study Type | Test result | Protocol |
|---|---|---|---|---|---|---|
| phenol-formaldehyde polymer | 9003-35-4 | Estimated Bioconcentration | | Bioaccumulation factor | 2.57 | |
| acrylonitrile-butadiene polymer | 9003-18-3 | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| rapeseel oil, sulfurized | 68153-37-7 | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| zinc oxide | 1314-13-2 | Experimental BCF - Fish | 56 days | Bioaccumulation factor | ≤217 | OECD305-Bioconcentration |
| amorphous silica | 7631-86-9 | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| phenol | 108-95-2 | Experimental Bioconcentration | | Log Kow | 1.47 | |
| benzothiazole-2-thiol | 149-30-4 | Experimental BCF - Fish | 42 days | Bioaccumulation factor | <8 | OECD305-Bioconcentration |
| benzothiazole-2-thiol | 149-30-4 | Experimental Bioconcentration | | Log Kow | 2.42 | |
| trimethyldihydroquinoline polymer | 26780-96-1 | Experimental BCF - Fish | 56 days | Bioaccumulation factor | 6720 | |
| trimethyldihydroquinoline polymer | 26780-96-1 | Experimental Bioconcentration | | Log Kow | 5.8 | OECD 117 log Kow HPLC method |

### 12.4. Mobility in soil

| Material | Cas No. | Test type | Study Type | Test result | Protocol |
|---|---|---|---|---|---|
| phenol-formaldehyde polymer | 9003-35-4 | Experimental Mobility in Soil | Koc | 637 l/kg | OECD 121 Estim. of Koc by HPLC |
| benzothiazole-2-thiol | 149-30-4 | Experimental Mobility in Soil | Koc | 326-3560 l/kg | 40CFR796.2750 Sed/Soil Adsorp |
| trimethyldihydroquinoline polymer | 26780-96-1 | Experimental Mobility in Soil | Koc | 3,715 l/kg | OECD 121 Estim. of Koc by HPLC |

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

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

**12.6. Other adverse effects**

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

## SECTION 13: Disposal considerations

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

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. 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

Not hazardous for transportation.

ADR/IMDG/IATA: Not restricted for transport.

| | Ground Transport (ADR) | Air Transport (IATA) | Marine Transport (IMDG) |
|---|---|---|---|
| **14.1 UN number** | No data available. | No data available. | No data available. |
| **14.2 UN proper shipping name** | No data available. | No data available. | No data available. |
| **14.3 Transport hazard class(es)** | No data available. | No data available. | No data available. |
| **14.4 Packing group** | No data available. | No data available. | No data available. |

| | | | |
|---|---|---|---|
| **14.5 Environmental hazards** | No data available. | No data available. | No data available. |
| **14.6 Special precautions for user** | Please refer to the other sections of the SDS for further information. | Please refer to the other sections of the SDS for further information. | Please refer to the other sections of the SDS for further information. |
| **14.7 Transport in bulk according to Annex II of Marpol 73/78 and IBC Code** | No data available. | No data available. | No data available. |
| **Control Temperature** | No data available. | No data available. | No data available. |
| **Emergency Temperature** | No data available. | No data available. | No data available. |
| **ADR Classification Code** | No data available. | No data available. | No data available. |
| **IMDG Segregation Code** | No data available. | No data available. | No data available. |

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

## SECTION 15: Regulatory information

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

**Carcinogenicity**

| Ingredient | CAS Nbr | Classification | Regulation |
|---|---|---|---|
| benzothiazole-2-thiol | 149-30-4 | Grp. 2A: Probable human carc. | International Agency for Research on Cancer |
| amorphous silica | 7631-86-9 | Gr. 3: Not classifiable | International Agency for Research on Cancer |
| phenol | 108-95-2 | Gr. 3: Not classifiable | International Agency for Research on Cancer |

**Global inventory status**
Contact 3M for more information.

**COMAH Regulation, SI 2015/483**
Seveso hazard categories, Annex 1, Part 1
None

Seveso named dangerous substances, Annex 1, Part 2

| Dangerous Substances | Identifier(s) | Qualifying quantity (tonnes) for the application of | |
|---|---|---|---|
| | | Lower-tier requirements | Upper-tier requirements |
| benzothiazole-2-thiol | 149-30-4 | 100 | 200 |

| | | | |
|---|---|---|---|
| phenol | 108-95-2 | 50 | 200 |
| zinc oxide | 1314-13-2 | 100 | 200 |

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

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

## SECTION 16: Other information

**List of relevant H statements**

| | |
|---|---|
| H301 | Toxic if swallowed. |
| H311 | Toxic in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H331 | Toxic if inhaled. |
| H341 | Suspected of causing genetic defects. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H411 | Toxic to aquatic life with long lasting effects. |
| H412 | Harmful to aquatic life with long lasting effects. |

**Revision information:**
GB Section 02: CLP Ingredient table information was added.
GB Section 02: Other hazards phrase information was added.
GB Section 04: First Aid - Symptoms and Effects (GB CLP) information was added.
GB Section 04: Information on toxicological effects information was added.
GB Section 12: Classification Warning information was added.
GB Section 15: Carcinogenicity information information was added.
GB Section 15: Chemical Safety Assessment information was added.
GBSDS Section 14 Transport in bulk - Main Heading information was added.
GBSDS Section 14 UN Number information was added.
CLP: Ingredient table information was deleted.
Label: CLP Percent Unknown information was deleted.
Label: CLP Precautionary - Disposal information was deleted.
Label: CLP Precautionary - Prevention information was modified.
Section 02: Label Elements: GB Percent Unknown information was added.
Section 2: Other hazards phrase information was deleted.
Section 3: Composition/ Information of ingredients table information was added.
Section 3: Composition/ Information of ingredients table information was deleted.
Section 03: SCL table information was added.
Section 03: SCL table information was deleted.
Section 04: First Aid - Symptoms and Effects (CLP) information was deleted.
Section 04: Information on toxicological effects information was deleted.
Section 8: Eye/face protection information information was modified.
Section 8: Occupational exposure limit table information was modified.
Section 9: Vapour density value information was modified.
Section 11: Acute Toxicity table information was modified.
Section 11: Carcinogenicity Table information was modified.

Section 11: Classification disclaimer information was deleted.
Section 11: GB Classification disclaimer information was added.
Section 11: GB No endocrine disruptor information available warning information was added.
Section 11: Germ Cell Mutagenicity Table information was modified.
Section 11: No endocrine disruptor information available warning information was deleted.
Section 11: Reproductive Toxicity Table information was modified.
Section 11: Respiratory Sensitization 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: 12.6. Endocrine Disrupting Properties information was deleted.
Section 12: 12.6. Other adverse effects information was added.
Section 12: 12.7. Other adverse effects information was deleted.
Section 12: Classification Warning information was deleted.
Section 12: Component ecotoxicity information information was modified.
Section 12: Mobility in soil information information was modified.
Prints No Data if Adverse effects information is not present information was deleted.
Section 12: No endocrine disruptor information available warning information was added.
Section 12: No endocrine disruptor information available warning information was deleted.
Section 12: Persistence and Degradability information information was modified.
Section 12:Bioccumulative potential information information was modified.
Section 14 Marine transport in bulk according to IMO instruments – Main Heading information was deleted.
Section 14 UN Number information was deleted.
Section 15: Carcinogenicity information information was deleted.
Section 15: Chemical Safety Assessment information was deleted.
Section 15: Seveso Substance Text information was added.
Section 15: Seveso Substance Text information was deleted.
Two-column table displaying the unique list of H Codes and statements (std phrases) for all components of the given material. information was added.
Two-column table displaying the unique list of H Codes and statements (std phrases) for all components of the given material. information was deleted.
Section 16: Web address information was added.
Section 16: Web address information was deleted.

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For Northern Ireland documents, please contact your 3M representative to obtain a copy.