# Safety Data Sheet



This Safety Data Sheet has been prepared in accordance with the SS586 Specification for Hazard Communication for Hazardous Chemicals and Dangerous Goods.

| | | | |
|---|---|---|---|
| **Document group:** | 11-1417-2 | **Version number:** | 2.00 |
| **Issue Date:** | 14/03/2024 | **Supersedes date:** | 26/09/2022 |

## IDENTIFICATION

**1.1. Product identifier**
3M™ Scotch-Weld™ Epoxy Potting Compound/Adhesive DP270 Black

**1.2. Recommended use and restrictions on use**

**Recommended use**
Structural adhesive.

**1.3. Supplier's details**

**Address:** 3M Technologies (S) Pte Ltd,10 Ang Mo Kio Street 65, Singapore 569059
**Telephone:** +65 6450 8888
**Website:** www.3m.com.sg

**1.4. Emergency telephone number**

**Company Emergency Hotline:** +65 6591 6601 (8.15am - 5.00pm, Monday - Friday)

**This product is a kit or a multipart product which consists of multiple, independently packaged components. An SDS for each of these components is included. Please do not separate the component SDSs from this cover page. The document numbers of the SDSs for components of this product are:**

11-1418-0, 19-0425-9

## TRANSPORT INFORMATION

**International Regulations**

**UN No.:** UN2810
**UN Proper shipping name:** TOXIC LIQUID, ORGANIC, N.O.S.
**Transportation Class (IMO):** 6.1-6.1 Toxic substances
**Transportation Class (IATA):** 6.1-6.1 Toxic substances
**Other Dangerous Goods Descriptions (IMO):** None assigned
**Other Dangerous Goods Descriptions (IATA):** None assigned
**Packing Group:** III
**Marine pollutant:** None assigned

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.

**3M Singapore SDSs are available at www.3m.com.sg**

# Safety Data Sheet



This Safety Data Sheet has been prepared in accordance with the SS586 Specification for Hazard Communication for Hazardous Chemicals and Dangerous Goods.

| | | | |
|---|---|---|---|
| **Document group:** | 19-0425-9 | **Version number:** | 3.00 |
| **Issue Date:** | 30/08/2024 | **Supersedes date:** | 26/09/2022 |

## SECTION 1: Identification

### 1.1. Product identifier
3M™ Scotch-Weld™ Epoxy Potting Compound/Adhesive DP270 Black, Part A

### 1.2. Recommended use and restrictions on use

**Recommended use**
Structural adhesive.

### 1.3. Supplier's details
**Address:** 3M Technologies (S) Pte Ltd,10 Ang Mo Kio Street 65, Singapore 569059
**Telephone:** +65 6450 8888
**Website:** www.3m.com.sg

### 1.4. Emergency telephone number
+65 6591 6601 (8.15am - 5.00pm, Monday - Friday)

## SECTION 2: Hazard identification

### 2.1. Classification of the substance or mixture
Acute Toxicity (oral): Category 4.
Acute Toxicity (dermal): Category 3.
Skin Corrosion/Irritation: Category 2.
Serious Eye Damage/Irritation: Category 2.
Reproductive Toxicity: Category 2.
Acute Aquatic Toxicity: Category 1.
Chronic Aquatic Toxicity: Category 1.

### 2.2. Label elements
**SIGNAL WORD**
DANGER!

**Symbols**
Skull and crossbones |Health Hazard | Environment |

**Pictograms**

**HAZARD STATEMENTS**

| | |
|---|---|
| H302 | Harmful if swallowed. |
| H311 | Toxic in contact with skin. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H361 | Suspected of damaging fertility or the unborn child. |
| H410 | Very toxic to aquatic life with long lasting effects. |

**PRECAUTIONARY STATEMENTS**

**Prevention:**

| | |
|---|---|
| P273 | Avoid release to the environment. |
| P280C | Wear protective gloves and protective clothing. |

**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. |
| P391 | Collect spillage. |

**2.3. Other hazards**

None known.

## SECTION 3: Composition/information on ingredients

This material is a mixture.

| Ingredient | CAS Nbr | % by Wt |
|---|---|---|
| 4-Nonylphenol, branched | 84852-15-3 | 40 - 60 |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | 6864-37-5 | 15 - 40 |
| 2-Nonylphenol, branched | 91672-41-2 | < 10 |
| Benzyl Alcohol | 100-51-6 | 1 - 10 |

## 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. Get medical attention. Wash clothing before reuse.

**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**

Toxic in contact with skin.

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

## SECTION 5: Fire-fighting measures

**5.1. Suitable 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 |
|---|---|
| Amine compounds. | During combustion. |
| Carbon monoxide. | During combustion. |
| Carbon dioxide. | During combustion. |
| Oxides of nitrogen. | During combustion. |
| Toxic vapour, gas, particulate. | During combustion. |

**5.3. Special protective actions 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 vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

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

**6.3. Methods and material for containment and cleaning up**
Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a metal container approved for use in transportation by appropriate authorities. The container must be lined with polyethylene plastic or contain a plastic drum liner made of polyethylene. 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 in accordance with applicable local/regional/national/international regulations.

## 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. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. 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 acids. Store away from oxidising agents.

## 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 |
|---|---|---|---|---|
| Benzyl Alcohol | 100-51-6 | AIHA | TWA:44.2 mg/m3(10 ppm) | |

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
Singapore PELs : Singapore. Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

**8.2. Exposure controls**

**8.2.1. Engineering controls**
No engineering controls required.

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

**Eye/face protection**

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

**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: 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

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

## SECTION 9: Physical and chemical properties

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

| | |
|---|---|
| **Physical state** | Liquid. |
| **Color** | Colorless |

| | |
|---|---|
| **Odor** | Mild Amine, Pungent Odor |
| **Odour threshold** | *No data available.* |
| **pH** | *Not applicable.* |
| **Melting point/Freezing point** | *No data available.* |
| **Boiling point/Initial boiling point/Boiling range** | 205 ºC [*Details:*CONDITIONS: @ 760mm Hg (benzyl alcohol)] |
| **Flash point** | > 115.6 ºC [*Test Method:*Closed Cup] |
| **Evaporation rate** | *No data available.* |
| **Flammability** | Not applicable. |
| **Flammable Limits(LEL)** | *No data available.* |
| **Flammable Limits(UEL)** | *No data available.* |
| **Vapour pressure** | 13.3 Pa [*Details:*CONDITIONS: @ 86F (30C); 13.3mm Hg @ 212F (100C).] |
| **Vapor Density and/or Relative Vapor Density** | 3.72 [*Ref Std:*AIR=1] |
| **Density** | 1 g/ml |
| **Relative density** | 1 [*Ref Std:*WATER=1] |
| **Water solubility** | Slight (less than 10%) |
| **Solubility- non-water** | *No data available.* |
| **Partition coefficient: n-octanol/water** | *No data available.* |
| **Autoignition temperature** | *No data available.* |
| **Decomposition temperature** | *No data available.* |
| **Kinematic Viscosity** | 13,500 mm²/sec |
| **VOC less H2O & exempt solvents** | <= 10 g/l [*Test Method:*tested per EPA method 24] [*Details:*when used as intended with Part B] |
| **VOC less H2O & exempt solvents** | <= 1 % [*Test Method:*tested per EPA method 24] [*Details:*when used as intended with Part B] |
| **VOC less H2O & exempt solvents** | <= 90 g/l [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*as supplied] |
| **Molecular weight** | *No data available.* |

| | |
|---|---|
| **Particle Characteristics** | *Not applicable.* |

## SECTION 10: Stability and reactivity

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

**10.2 Chemical stability**
Stable.

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

**10.4 Conditions to avoid**
Heat is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature exothermic reaction with production of intense heat and smoke.

**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 be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labelling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.**

**11.1 Information on Toxicological effects**

**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**
Toxic in contact with skin.
Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain.

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

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

**Additional Health Effects:**

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

**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 >200 - =1,000 mg/kg |
| Overall product | Ingestion | | No data available; calculated ATE >300 - =2,000 mg/kg |
| 4-Nonylphenol, branched | Dermal | Rabbit | LD50 > 2,000 mg/kg |
| 4-Nonylphenol, branched | Ingestion | Rat | LD50 1,531 mg/kg |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | Dermal | Rabbit | LD50 > 200 mg/kg |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | Inhalation-Dust/Mist (4 hours) | Rat | LC50 0.42 mg/l |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | Ingestion | Rat | LD50 > 320 mg/kg |
| Benzyl Alcohol | Inhalation- | Rat | LC50 8.8 mg/l |

| | | | |
|---|---|---|---|
| | Dust/Mist (4 hours) | | |
| Benzyl Alcohol | Ingestion | Rat | LD50 1,230 mg/kg |

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

| Name | Species | Value |
|---|---|---|
| Overall product | In vitro data | Irritant |
| 4-Nonylphenol, branched | Rabbit | Corrosive |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | Rabbit | Corrosive |
| Benzyl Alcohol | Multiple animal species | Mild irritant |

**Serious Eye Damage/Irritation**

| Name | Species | Value |
|---|---|---|
| Overall product | similar health hazards | Severe irritant |
| 4-Nonylphenol, branched | Rabbit | Corrosive |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | Rabbit | Corrosive |
| Benzyl Alcohol | Rabbit | Severe irritant |

**Sensitization:**

**Skin Sensitisation**

| Name | Species | Value |
|---|---|---|
| 4-Nonylphenol, branched | Guinea pig | Not classified |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | Guinea pig | Not classified |
| Benzyl Alcohol | Human and animal | Not classified |

**Respiratory Sensitisation**

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

**Germ Cell Mutagenicity**

| Name | Route | Value |
|---|---|---|
| 4-Nonylphenol, branched | In Vitro | Not mutagenic |
| 4-Nonylphenol, branched | In vivo | Not mutagenic |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | In Vitro | Not mutagenic |
| Benzyl Alcohol | In vivo | Not mutagenic |
| Benzyl Alcohol | In Vitro | Some positive data exist, but the data are not sufficient for classification |

**Carcinogenicity**

| Name | Route | Species | Value |
|---|---|---|---|
| Benzyl Alcohol | Ingestion | Multiple animal species | Not carcinogenic |

**Reproductive Toxicity**

**Reproductive and/or Developmental Effects**

| Name | Route | Value | Species | Test result | Exposure Duration |
|---|---|---|---|---|---|
| 4-Nonylphenol, branched | Ingestion | Not classified for male reproduction | Rat | NOAEL 400 mg/kg/day | 28 days |
| 4-Nonylphenol, branched | Ingestion | Toxic to female reproduction | official classification | NOAEL Not available | |
| 4-Nonylphenol, branched | Ingestion | Toxic to development | official classification | NOAEL Not available | |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | Ingestion | Not classified for male reproduction | Rat | NOAEL 12 mg/kg/day | 3 months |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | Inhalation | Not classified for male reproduction | Rat | NOAEL 0.048 mg/l | 3 months |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | Ingestion | Not classified for development | Rat | NOAEL 45 mg/kg/day | during gestation |
| Benzyl Alcohol | Ingestion | Not classified for development | Mouse | NOAEL 550 mg/kg/day | during organogenesis |

### Lactation

| Name | Route | Species | Value |
|---|---|---|---|
| 4-Nonylphenol, branched | Ingestion | Rat | Not classified for effects on or via lactation |

### Target Organ(s)

### Specific Target Organ Toxicity - single exposure

| Name | Route | Target Organ(s) | Value | Species | Test result | Exposure Duration |
|---|---|---|---|---|---|---|
| 4,4'-Methylenebis(2-methylcyclohexylamine) | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | Rat | NOAEL Not available | |
| Benzyl Alcohol | Inhalation | central nervous system depression | May cause drowsiness or dizziness | | NOAEL Not available | |
| Benzyl Alcohol | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | | NOAEL Not available | |
| Benzyl Alcohol | Ingestion | central nervous system depression | May cause drowsiness or dizziness | | NOAEL Not available | |

### Specific Target Organ Toxicity - repeated exposure

| Name | Route | Target Organ(s) | Value | Species | Test result | Exposure Duration |
|---|---|---|---|---|---|---|
| 4-Nonylphenol, branched | Ingestion | endocrine system \| hematopoietic system \| liver | Not classified | Rat | NOAEL 400 mg/kg/day | 28 days |
| 4-Nonylphenol, branched | Ingestion | kidney and/or bladder \| heart \| bone, teeth, nails, and/or hair \| immune system \| muscles \| nervous system \| respiratory system | Not classified | Rat | NOAEL 150 mg/kg/day | 90 days |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | Inhalation | hematopoietic system | Some positive data exist, but the data are not sufficient for classification | Rat | NOAEL 0.012 mg/l | 3 months |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | Inhalation | endocrine system \| liver \| kidney and/or bladder \| respiratory system | Not classified | Rat | NOAEL 0.048 mg/l | 3 months |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | Inhalation | skin | Not classified | Human | NOAEL Not available | occupational exposure |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | Ingestion | heart | Some positive data exist, but the data are not sufficient for | Rat | NOAEL 2.5 mg/kg/day | 3 months |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | classification | | | |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | Ingestion | hematopoietic system \| liver | Some positive data exist, but the data are not sufficient for classification | Rat | NOAEL 12 mg/kg/day | 3 months |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | Ingestion | endocrine system \| kidney and/or bladder | Not classified | Rat | NOAEL 60 mg/kg/day | 3 months |
| Benzyl Alcohol | Ingestion | endocrine system \| muscles \| kidney and/or bladder | Not classified | Rat | NOAEL 400 mg/kg/day | 13 weeks |
| Benzyl Alcohol | Ingestion | nervous system \| respiratory system | Not classified | Mouse | NOAEL 645 mg/kg/day | 8 days |

**Aspiration Hazard**
For the component/components, either no data are currently available or the data are 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.**

## SECTION 12: Ecological information

**The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.**

**12.1. Toxicity**

**Acute aquatic hazard:**
GHS Acute 1: Very toxic to aquatic life.

**Chronic aquatic hazard:**
GHS Chronic 1: Very toxic to aquatic life with long lasting effects.

No product test data available.

| Material | CAS Nbr | Organism | Type | Exposure | Test endpoint | Test result |
|---|---|---|---|---|---|---|
| 4-Nonylphenol, branched | 84852-15-3 | Fish | Analogous Compound | 96 hours | LC50 | 0.05 mg/l |
| 4-Nonylphenol, branched | 84852-15-3 | Green algae | Analogous Compound | 72 hours | ErC50 | 0.323 mg/l |
| 4-Nonylphenol, branched | 84852-15-3 | Invertebrate | Analogous Compound | 96 hours | LC50 | 0.038 mg/l |
| 4-Nonylphenol, branched | 84852-15-3 | Diatom | Experimental | 96 hours | EC50 | 0.027 mg/l |
| 4-Nonylphenol, branched | 84852-15-3 | Fish | Experimental | 96 hours | LC50 | 0.017 mg/l |
| 4-Nonylphenol, branched | 84852-15-3 | Water flea | Experimental | 48 hours | LC50 | 0.02 mg/l |
| 4-Nonylphenol, branched | 84852-15-3 | Green algae | Analogous Compound | 72 hours | ErC10 | 0.0251 mg/l |
| 4-Nonylphenol, branched | 84852-15-3 | Midge | Analogous Compound | 28 days | EC10 | 203 mg/kg (Dry Weight) |
| 4-Nonylphenol, branched | 84852-15-3 | Rainbow trout | Analogous Compound | 91 days | NOEC | 0.006 mg/l |
| 4-Nonylphenol, branched | 84852-15-3 | Water flea | Analogous Compound | 21 days | NOEC | 0.024 mg/l |
| 4-Nonylphenol, branched | 84852-15-3 | Mysid Shrimp | Experimental | 28 days | NOEC | 0.0039 mg/l |
| 4-Nonylphenol, | 84852-15-3 | Activated sludge | Analogous | 3 hours | EC50 | 950 mg/l |

| | | | | | | |
|---|---|---|---|---|---|---|
| branched | | | Compound | | | |
| 4-Nonylphenol, branched | 84852-15-3 | Japanese quail | Analogous Compound | 147 days | NOEC | <=10 ppm diet |
| 4-Nonylphenol, branched | 84852-15-3 | Lettuce | Analogous Compound | 14 days | EC50 | 625 mg/kg (Dry Weight) |
| 4-Nonylphenol, branched | 84852-15-3 | Soil microbes | Analogous Compound | 40 days | NOEC | 100 mg/kg (Dry Weight) |
| 4-Nonylphenol, branched | 84852-15-3 | Springtail | Analogous Compound | 21 days | EC10 | 23 mg/kg (Dry Weight) |
| 4-Nonylphenol, branched | 84852-15-3 | Worm | Analogous Compound | 14 days | LC50 | 88.6 mg/kg (Wet Weight) |
| 4-Nonylphenol, branched | 84852-15-3 | Worm | Analogous Compound | 28 days | NOEC | 24 mg/kg (Dry Weight) |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | 6864-37-5 | Activated sludge | Experimental | 30 minutes | EC20 | 160 mg/l |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | 6864-37-5 | Bacteria | Experimental | 17 hours | EC50 | 96 mg/l |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | 6864-37-5 | Green algae | Experimental | 72 hours | ErC50 | 7.9 mg/l |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | 6864-37-5 | Medaka | Experimental | 96 hours | LC50 | 22 mg/l |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | 6864-37-5 | Water flea | Experimental | 48 hours | EC50 | 4.6 mg/l |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | 6864-37-5 | Green algae | Experimental | 72 hours | NOEC | 0.13 mg/l |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | 6864-37-5 | Water flea | Experimental | 21 days | NOEC | 4 mg/l |
| 2-Nonylphenol, branched | 91672-41-2 | Diatom | Analogous Compound | 96 hours | EC50 | 0.027 mg/l |
| 2-Nonylphenol, branched | 91672-41-2 | Fish | Analogous Compound | 96 hours | LC50 | 0.017 mg/l |
| 2-Nonylphenol, branched | 91672-41-2 | Fish | Analogous Compound | 96 hours | LC50 | 0.05 mg/l |
| 2-Nonylphenol, branched | 91672-41-2 | Green algae | Analogous Compound | 72 hours | ErC50 | 0.323 mg/l |
| 2-Nonylphenol, branched | 91672-41-2 | Invertebrate | Analogous Compound | 96 hours | LC50 | 0.038 mg/l |
| 2-Nonylphenol, branched | 91672-41-2 | Water flea | Analogous Compound | 48 hours | LC50 | 0.02 mg/l |
| 2-Nonylphenol, branched | 91672-41-2 | Green algae | Analogous Compound | 72 hours | ErC10 | 0.0251 mg/l |
| 2-Nonylphenol, branched | 91672-41-2 | Midge | Analogous Compound | 28 days | EC10 | 203 mg/l |
| 2-Nonylphenol, branched | 91672-41-2 | Mysid Shrimp | Analogous Compound | 28 days | NOEC | 0.0039 mg/l |
| 2-Nonylphenol, branched | 91672-41-2 | Rainbow trout | Analogous Compound | 91 days | NOEC | 0.006 mg/l |
| 2-Nonylphenol, branched | 91672-41-2 | Water flea | Analogous Compound | 21 days | NOEC | 0.024 mg/l |
| 2-Nonylphenol, branched | 91672-41-2 | Activated sludge | Analogous Compound | 3 hours | EC50 | 950 mg/l |
| 2-Nonylphenol, branched | 91672-41-2 | Japanese quail | Analogous Compound | 147 days | NOEC | <=10 ppm diet |
| 2-Nonylphenol, | 91672-41-2 | Lettuce | Analogous | 14 days | EC50 | 625 mg/kg (Dry Weight) |

| | | | | | | |
|---|---|---|---|---|---|---|
| branched | | | Compound | | | |
| 2-Nonylphenol, branched | 91672-41-2 | Soil microbes | Analogous Compound | 40 days | NOEC | 100 mg/kg (Dry Weight) |
| 2-Nonylphenol, branched | 91672-41-2 | Springtail | Analogous Compound | 21 days | EC10 | 23 mg/kg (Dry Weight) |
| 2-Nonylphenol, branched | 91672-41-2 | Worm | Analogous Compound | 14 days | LC50 | 88.6 mg/kg (Dry Weight) |
| 2-Nonylphenol, branched | 91672-41-2 | Worm | Analogous Compound | 28 days | NOEC | 24 mg/kg (Dry Weight) |
| Benzyl Alcohol | 100-51-6 | Activated sludge | Experimental | 3 hours | EC50 | 1,385 mg/l |
| Benzyl Alcohol | 100-51-6 | Fathead minnow | Experimental | 96 hours | LC50 | 460 mg/l |
| Benzyl Alcohol | 100-51-6 | Green algae | Experimental | 72 hours | ErC50 | 770 mg/l |
| Benzyl Alcohol | 100-51-6 | Water flea | Experimental | 48 hours | EC50 | 230 mg/l |
| Benzyl Alcohol | 100-51-6 | Green algae | Experimental | 72 hours | NOEC | 310 mg/l |
| Benzyl Alcohol | 100-51-6 | Water flea | Experimental | 21 days | NOEC | 51 mg/l |

### 12.2. Persistence and degradability

| Material | CAS Nbr | Test type | Duration | Study Type | Test result | Protocol |
|---|---|---|---|---|---|---|
| 4-Nonylphenol, branched | 84852-15-3 | Experimental Biodegradation | 28 days | CO2 evolution | 53 %CO2 evolution/THCO2 evolution (does not pass 10-day window) | OECD 301B - Modified sturm or CO2 |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | 6864-37-5 | Experimental Biodegradation | 28 days | BOD | 0 %BOD/ThOD | OECD 301C - MITI test (I) |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | 6864-37-5 | Experimental Biodegradation | 28 days | Dissolv. Organic Carbon Deplet | <1 %removal of DOC | OECD 302B Zahn-Wellens/EVPA |
| 2-Nonylphenol, branched | 91672-41-2 | Analogous Compound Biodegradation | 28 days | CO2 evolution | 53 %CO2 evolution/THCO2 evolution (does not pass 10-day window) | OECD 301B - Modified sturm or CO2 |
| Benzyl Alcohol | 100-51-6 | Experimental Biodegradation | 14 days | BOD | 94 %BOD/ThOD | OECD 301C - MITI test (I) |

### 12.3 : Bioaccumulative potential

| Material | CAS Nbr | Test type | Duration | Study Type | Test result | Protocol |
|---|---|---|---|---|---|---|
| 4-Nonylphenol, branched | 84852-15-3 | Experimental BCF - Fish | 28 days | Bioaccumulation factor | 984 | |
| 4-Nonylphenol, branched | 84852-15-3 | Experimental BCF - Fish | 16 days | Bioaccumulation factor | 1300 | similar to OECD 305 |
| 4-Nonylphenol, branched | 84852-15-3 | Experimental Bioconcentration | | Log Kow | 5.4 | OECD 117 log Kow HPLC method |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | 6864-37-5 | Experimental BCF - Fish | 60 days | Bioaccumulation factor | 60 | OECD305-Bioconcentration |
| 4,4'-Methylenebis(2-methylcyclohexylamine) | 6864-37-5 | Experimental Bioconcentration | | Log Kow | 2.51 | OECD 107 log Kow shke flsk mtd |
| 2-Nonylphenol, branched | 91672-41-2 | Analogous Compound BCF - Fish | 28 days | Bioaccumulation factor | 984 | |
| 2-Nonylphenol, branched | 91672-41-2 | Analogous Compound BCF - | 16 days | Bioaccumulation factor | 1300 | similar to OECD 305 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Fish | | | | |
| 2-Nonylphenol, branched | 91672-41-2 | Analogous Compound Bioconcentration | | Log Kow | 5.4 | OECD 117 log Kow HPLC method |
| Benzyl Alcohol | 100-51-6 | Experimental Bioconcentration | | Log Kow | 1.10 | |

**12.4. Mobility in soil**
Please contact manufacturer for more details

**12.5 Other adverse effects**
No information available.

## SECTION 13: Disposal considerations

**13.1. Disposal 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.

## SECTION 14: Transport Information

**International Regulations**

**UN No.:** UN2810
**UN Proper shipping name:** TOXIC LIQUID, ORGANIC, N.O.S.

**Transportation Class (IMO):** 6.1-6.1 Toxic substances
**Transportation Class (IATA):** 6.1-6.1 Toxic substances
**Other Dangerous Goods Descriptions (IMO):** None assigned
**Other Dangerous Goods Descriptions (IATA):** None assigned
**Packing Group:** III
**Marine pollutant:** Yes

## SECTION 15: Regulatory information

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

**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 Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information. 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.

**This product may contain component(s) that are regulated by the following:**
Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations: this product is subject to SDS, labelling, PEL and other requirements in the Act/Regulations.

## SECTION 16: Other information

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.

**3M Singapore SDSs are available at www.3m.com.sg**

# Safety Data Sheet



This Safety Data Sheet has been prepared in accordance with the SS586 Specification for Hazard Communication for Hazardous Chemicals and Dangerous Goods.

| | | | |
|---|---|---|---|
| **Document group:** | 11-1418-0 | **Version number:** | 4.00 |
| **Issue Date:** | 29/08/2024 | **Supersedes date:** | 14/03/2024 |

## SECTION 1: Identification

**1.1. Product identifier**
3M™ Scotch-Weld™ Epoxy Potting Compound/Adhesive DP270 Black, Part B

**1.2. Recommended use and restrictions on use**

**Recommended use**
Additive, Structural adhesive.

**1.3. Supplier's details**
**Address:** 3M Technologies (S) Pte Ltd,10 Ang Mo Kio Street 65, Singapore 569059
**Telephone:** +65 6450 8888
**Website:** www.3m.com.sg

**1.4. Emergency telephone number**
+65 6591 6601 (8.15am - 5.00pm, Monday - Friday)

## SECTION 2: Hazard identification

**2.1. Classification of the substance or mixture**
Serious Eye Damage/Irritation: Category 2.
Skin Sensitizer: Category 1.
Reproductive Toxicity: Category 1B.
Chronic Aquatic Toxicity: Category 2.

**2.2. Label elements**
**SIGNAL WORD**
DANGER!

**Symbols**
Exclamation mark |Health Hazard | Environment |

**Pictograms**

**HAZARD STATEMENTS**

| | |
|---|---|
| H319 | Causes serious eye irritation. |
| H317 | May cause an allergic skin reaction. |
| H360 | May damage fertility or the unborn child. |
| H411 | Toxic to aquatic life with long lasting effects. |

**PRECAUTIONARY STATEMENTS**

**Prevention:**

| | |
|---|---|
| P201 | Obtain special instructions before use. |
| P273 | Avoid release to the environment. |
| P280E | Wear protective gloves. |

**Response:**

| | |
|---|---|
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308 + P313 | IF exposed or concerned: Get medical advice/attention. |
| P333 + P313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P391 | Collect spillage. |

**2.3. Other hazards**

None known.

## SECTION 3: Composition/information on ingredients

This material is a mixture.

| Ingredient | CAS Nbr | % by Wt |
|---|---|---|
| Epoxy Resin | 25068-38-6 | 90 - 99 |
| Hydrocarbon resin | 9003-53-6 | 1 - 10 |
| Carbon black | 1333-86-4 | <= 1 |

## SECTION 4: First aid measures

**4.1. Description of first aid measures**

**Inhalation**

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

**Skin contact**

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

**Eye contact**

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

**If swallowed**

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

**4.2. Most important symptoms and effects, both acute and delayed**

Allergic skin reaction (redness, swelling, blistering, and itching).

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

## SECTION 5: Fire-fighting measures

**5.1. Suitable 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. |
| Hydrocarbons. | During combustion. |
| Carbon monoxide. | During combustion. |
| Carbon dioxide. | During combustion. |
| Hydrogen Chloride | During combustion. |
| Ketones. | During combustion. |
| Toxic vapour, gas, particulate. | During combustion. |

**5.3. Special protective actions 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 vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

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

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

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling**
For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not

be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (eg. gloves, respirators…) as required.

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

## 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 |
|---|---|---|---|---|
| Carbon black | 1333-86-4 | ACGIH | TWA(inhalable fraction):3 mg/m3 | A3: Confirmed animal carcin. |
| Carbon black | 1333-86-4 | Singapore PELs | TWA(8 hours):3.5 mg/m3 | |

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
Singapore PELs : Singapore. Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

**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.

**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: Polymer laminate

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
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.

## SECTION 9: Physical and chemical properties

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

| | |
|---|---|
| **Physical state** | Liquid. |
| **Color** | Black |
| **Odor** | Mild Epoxy |
| **Odour threshold** | *No data available.* |
| **pH** | *Not applicable.* |
| **Melting point/Freezing point** | *No data available.* |
| **Boiling point/Initial boiling point/Boiling range** | > 148.9 ºC |
| **Flash point** | > 93.3 ºC [*Test Method:*Closed Cup] |
| **Evaporation rate** | *No data available.* |
| **Flammability** | Not applicable. |
| **Flammable Limits(LEL)** | *Not applicable.* |
| **Flammable Limits(UEL)** | *Not applicable.* |
| **Vapour pressure** | <=186,158.4 Pa [@ 55 ºC ] |
| **Vapor Density and/or Relative Vapor Density** | *Not applicable.* |
| **Density** | 1.15 g/ml |
| **Relative density** | 1.15 [*Ref Std:*WATER=1] |
| **Water solubility** | Nil |
| **Solubility- non-water** | *No data available.* |
| **Partition coefficient: n-octanol/water** | *No data available.* |
| **Autoignition temperature** | *No data available.* |
| **Decomposition temperature** | *No data available.* |
| **Kinematic Viscosity** | 12,609 mm²/sec |
| **VOC less H2O & exempt solvents** | < 10 g/l [*Test Method:*tested per EPA method 24] [*Details:*when used as intended with Part A] |
| **VOC less H2O & exempt solvents** | 0 % [*Test Method:*calculated SCAQMD rule 443.1] [*Details:*as supplied] |
| **VOC less H2O & exempt solvents** | < 1 % [*Test Method:*tested per EPA method 24] [*Details:*when used as intended with Part A] |
| **Molecular weight** | *No data available.* |

| | |
|---|---|
| **Particle Characteristics** | *Not applicable.* |

## SECTION 10: Stability and reactivity

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

**10.2 Chemical stability**
Stable.

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

**10.4 Conditions to avoid**

Heat is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature exothermic reaction with production of intense heat and smoke.

**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 be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labelling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.**

**11.1 Information on Toxicological effects**

**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 localized redness, swelling, itching, and dryness. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

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

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

**Additional Health Effects:**

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

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

**Acute Toxicity**

| Name | Route | Species | Value |
|---|---|---|---|
| Overall product | Ingestion | | No data available; calculated ATE >5,000 mg/kg |
| Epoxy Resin | Dermal | Rat | LD50 > 1,600 mg/kg |

| | | | |
|---|---|---|---|
| Epoxy Resin | Ingestion | Rat | LD50 > 1,000 mg/kg |
| Carbon black | Dermal | Rabbit | LD50 > 3,000 mg/kg |
| Carbon black | Ingestion | Rat | LD50 > 8,000 mg/kg |

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

| Name | Species | Value |
|---|---|---|
| Epoxy Resin | Rabbit | Mild irritant |
| Carbon black | Rabbit | No significant irritation |

**Serious Eye Damage/Irritation**

| Name | Species | Value |
|---|---|---|
| Epoxy Resin | Rabbit | Moderate irritant |
| Carbon black | Rabbit | No significant irritation |

**Sensitization:**

**Skin Sensitisation**

| Name | Species | Value |
|---|---|---|
| Epoxy Resin | Human and animal | Sensitising |

**Respiratory Sensitisation**

| Name | Species | Value |
|---|---|---|
| Epoxy Resin | Human | Not classified |

**Germ Cell Mutagenicity**

| Name | Route | Value |
|---|---|---|
| Epoxy Resin | In vivo | Not mutagenic |
| Epoxy Resin | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| Carbon black | In Vitro | Not mutagenic |
| Carbon black | In vivo | Some positive data exist, but the data are not sufficient for classification |

**Carcinogenicity**

| Name | Route | Species | Value |
|---|---|---|---|
| Epoxy Resin | Dermal | Mouse | Some positive data exist, but the data are not sufficient for classification |
| Carbon black | Dermal | Mouse | Not carcinogenic |
| Carbon black | Ingestion | Mouse | Not carcinogenic |
| Carbon black | Inhalation | Rat | Carcinogenic. |

**Reproductive Toxicity**

**Reproductive and/or Developmental Effects**

| Name | Route | Value | Species | Test result | Exposure Duration |
|---|---|---|---|---|---|
| Epoxy Resin | Ingestion | Not classified for female reproduction | Rat | NOAEL 750 mg/kg/day | 2 generation |
| Epoxy Resin | Ingestion | Not classified for male reproduction | Rat | NOAEL 750 mg/kg/day | 2 generation |
| Epoxy Resin | Dermal | Not classified for development | Rabbit | NOAEL 300 mg/kg/day | during organogenesis |
| Epoxy Resin | Ingestion | Not classified for development | Rat | NOAEL 750 | 2 generation |

| | | | | | |
|---|---|---|---|---|---|
| | | | | mg/kg/day | |
| Hydrocarbon resin | Ingestion | Toxic to female reproduction | Rat | NOAEL 5 mg/kg/day | premating into lactation |

**Target Organ(s)**

**Specific Target Organ Toxicity - single exposure**
For the component/components, either no data are currently available or the data are not sufficient for classification.

**Specific Target Organ Toxicity - repeated exposure**

| Name | Route | Target Organ(s) | Value | Species | Test result | Exposure Duration |
|---|---|---|---|---|---|---|
| Epoxy Resin | Dermal | liver | Not classified | Rat | NOAEL 1,000 mg/kg/day | 2 years |
| Epoxy Resin | Dermal | nervous system | Not classified | Rat | NOAEL 1,000 mg/kg/day | 13 weeks |
| Epoxy Resin | 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 |
| Carbon black | Inhalation | pneumoconiosis | Not classified | Human | NOAEL Not available | occupational exposure |

**Aspiration Hazard**
For the component/components, either no data are currently available or the data are 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.**

## SECTION 12: Ecological information

**The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.**

**12.1. Toxicity**

**Acute aquatic hazard:**
GHS Acute 2: Toxic to aquatic life.

**Chronic aquatic hazard:**
GHS Chronic 2: Toxic to aquatic life with long lasting effects.

No product test data available.

| Material | CAS Nbr | Organism | Type | Exposure | Test endpoint | Test result |
|---|---|---|---|---|---|---|
| Epoxy Resin | 25068-38-6 | Activated sludge | Estimated | 3 hours | IC50 | >100 mg/l |
| Epoxy Resin | 25068-38-6 | Green algae | Estimated | 72 hours | EC50 | >11 mg/l |
| Epoxy Resin | 25068-38-6 | Rainbow trout | Estimated | 96 hours | LC50 | 2 mg/l |
| Epoxy Resin | 25068-38-6 | Water flea | Estimated | 48 hours | EC50 | 1.8 mg/l |
| Epoxy Resin | 25068-38-6 | Green algae | Estimated | 72 hours | NOEC | 4.2 mg/l |
| Epoxy Resin | 25068-38-6 | Water flea | Estimated | 21 days | NOEC | 0.3 mg/l |

| | | | | | | |
|---|---|---|---|---|---|---|
| Hydrocarbon resin | 9003-53-6 | N/A | Data not available or insufficient for classification | N/A | N/A | N/A |
| Carbon black | 1333-86-4 | Green algae | Experimental | 72 hours | No tox obs at lmt of water sol | >100 mg/l |
| Carbon black | 1333-86-4 | Zebra Fish | Experimental | 96 hours | No tox obs at lmt of water sol | >100 mg/l |
| Carbon black | 1333-86-4 | Green algae | Experimental | 72 hours | No tox obs at lmt of water sol | 100 mg/l |
| Carbon black | 1333-86-4 | Activated sludge | Experimental | 3 hours | NOEC | >800 mg/l |

**12.2. Persistence and degradability**

| Material | CAS Nbr | Test type | Duration | Study Type | Test result | Protocol |
|---|---|---|---|---|---|---|
| Epoxy Resin | 25068-38-6 | Estimated Biodegradation | 28 days | BOD | 5 %BOD/COD | OECD 301F - Manometric respirometry |
| Epoxy Resin | 25068-38-6 | Estimated Hydrolysis | | Hydrolytic half-life | 117 hours (t 1/2) | |
| Hydrocarbon resin | 9003-53-6 | Experimental Biodegradation | 28 days | BOD | 2 %BOD/ThOD | OECD 301C - MITI test (I) |
| Carbon black | 1333-86-4 | Data not available-insufficient | N/A | N/A | N/A | N/A |

**12.3 : Bioaccumulative potential**

| Material | CAS Nbr | Test type | Duration | Study Type | Test result | Protocol |
|---|---|---|---|---|---|---|
| Epoxy Resin | 25068-38-6 | Estimated Bioconcentration | | Log Kow | 3.242 | |
| Hydrocarbon resin | 9003-53-6 | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| Carbon black | 1333-86-4 | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |

**12.4. Mobility in soil**
Please contact manufacturer for more details

**12.5 Other adverse effects**
No information available.

## SECTION 13: Disposal considerations

**13.1. Disposal 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.

## SECTION 14: Transport Information

**International Regulations**

**UN No.:** None assigned
**UN Proper shipping name:** None assigned

**Transportation Class (IMO):** None assigned
**Transportation Class (IATA):** None assigned
**Other Dangerous Goods Descriptions (IMO):** Not restricted, as per IMDG code 2.10.2.7, marine pollutant exception.
**Other Dangerous Goods Descriptions (IATA):** Not restricted, as per Special Provision A197, environmentally hazardous substance exception.
**Packing Group:** None assigned
**Marine pollutant:** None assigned

## SECTION 15: Regulatory information

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

**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 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.

**This product may contain component(s) that are regulated by the following:**
Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations: this product is subject to SDS, labelling, PEL and other requirements in the Act/Regulations.

## SECTION 16: Other information

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.

**3M Singapore SDSs are available at www.3m.com.sg**