# Safety Data Sheet



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|---|---|---|---|
| **Document Group:** | 16-5850-9 | **Version Number:** | 7.00 |
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This Safety Data Sheet has been prepared in accordance with the Malaysia Occupational Safety and Health (Chemical Classification, Labelling and Safety Data Sheets) Regulations 2013.

## SECTION 1: Identification

### 1.1. Product identifier
3M™ Marine Adhesive Sealant Fast Cure 5200, White; PN 06520 , 05220, 06534, 06535

### 1.2. Recommended use and restrictions on use

**Recommended use**
Adhesive Sealant, Sealant

For Industrial or Professional use only

### 1.3. Supplier's details
**ADDRESS:** 3M Malaysia Sdn. Bhd., Level 8, Block F, Oasis Square, No.2, Jalan PJU 1A/7A, Ara Damansara 47301 Petaling, Jaya, Selangor
**Telephone:** 03-7884 2888
**E Mail:** 3mmyehsr@mmm.com
**Website:** www.3M.com.my

### 1.4. Emergency telephone number
+60 03-7884 2888

## SECTION 2: Hazard identification

### 2.1. Classification of the substance or mixture
Respiratory Sensitizer: Category 1.
Skin Sensitizer: Category 1.
Specific Target Organ Toxicity (repeated exposure): Category 2.
Chronic Aquatic Toxicity: Category 2.

### 2.2. Label elements
**Signal word**
Danger

**Symbols**
Health Hazard |Environment |

**Pictograms**

**Hazard Statements:**

| | |
|---|---|
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H317 | May cause an allergic skin reaction. |
| H373 | May cause damage to organs through prolonged or repeated exposure: respiratory system. |
| H411 | Toxic to aquatic life with long lasting effects. |

**Precautionary statements**

**General:**

| | |
|---|---|
| P101 | If medical advice is needed, have product container or label at hand. |
| P102 | Keep out of reach of children. |

**Prevention:**

| | |
|---|---|
| P260 | Do not breathe dust/fume/gas/mist/vapors/spray. |
| P273 | Avoid release to the environment. |
| P280E | Wear protective gloves. |
| P285 | In case of inadequate ventilation wear respiratory protection. |

**Response:**

| | |
|---|---|
| P304 + P341 | IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| P333 + P313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P342 + P311 | If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. |

**Disposal:**

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

**2.3. Other hazards**

Although titanium dioxide is classified as a carcinogen, exposures associated with this health effect are not expected during normal, intended use of this product., Persons previously sensitized to isocyanates may develop a cross-sensitization reaction to other isocyanates.

## SECTION 3: Composition/information on ingredients

This material is a mixture.

| Ingredient | C.A.S. No. | % by Wt |
|---|---|---|
| Urethane Polymer | 51447-37-1 | 40 - 70 |
| Titanium Dioxide | 13463-67-7 | 10 - 30 |
| Fumed Silica | 112945-52-5 | 1 - 5 |
| p,p'-Methylenebis(Phenyl Isocyanate) | 101-68-8 | < 2.4 |
| Zinc Oxide | 1314-13-2 | < 2.3 |
| Alkyl Isocyanate Silane | 85702-90-5 | < 2 |
| Alumina Trihydrate | 21645-51-2 | < 2 |
| Carbitol Acetate | 112-15-2 | < 2.0 |

| | | |
|---|---|---|
| Fumed Silica | 7631-86-9 | 0.5 - 1.5 |
| Heptane | 142-82-5 | < 0.3 |
| (Gamma-mercaptopropyl)trimethoxysilane | 4420-74-0 | < 0.2 |

# 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 respiratory reaction (difficulty breathing, wheezing, cough, and tightness of chest). Allergic skin reaction (redness, swelling, blistering, and itching). Target organ effects following prolonged or repeated exposure. See Section 11 for additional details.

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

# SECTION 5: Fire-fighting measures

**5.1. Suitable extinguishing media**
Use a fire fighting agent suitable for the surrounding fire.

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

**Hazardous Decomposition or By-Products**

| Substance | Condition |
|---|---|
| Isocyanates | During Combustion |
| Carbon monoxide | During Combustion |
| Carbon dioxide | During Combustion |
| Hydrogen Cyanide | During Combustion |
| Oxides of Nitrogen | During Combustion |
| Oxides of Sulfur | During Combustion |
| Toxic Vapor, Gas, Particulate | During Combustion |

**5.3. Special protective actions for fire-fighters**
No special protective actions for fire-fighters are anticipated.

# 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 dikes to prevent entry into sewer systems or bodies of water.

**6.3. Methods and material for containment and cleaning up**
Pour isocyanate decontaminant solution (90% water, 8% concentrated ammonia, 2% detergent) on spill and allow to react for 10 minutes. Or pour water on spill and allow to react for more than 30 minutes. Cover with absorbent material. 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 container approved for transportation by appropriate authorities, but do not seal the container for 48 hours to avoid pressure build-up. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. 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**
Keep out of reach of children. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse.

**7.2. Conditions for safe storage including any incompatibilities**
Keep container tightly closed to prevent contamination with water or air. If contamination is suspected, do not reseal container. Store away from amines.

## 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 | C.A.S. No. | Agency | Limit type | Additional Comments |
|---|---|---|---|---|
| p,p'-Methylenebis(Phenyl Isocyanate) | 101-68-8 | ACGIH | TWA:0.005 ppm | |
| p,p'-Methylenebis(Phenyl Isocyanate) | 101-68-8 | Malaysia OELs | TWA(8 hours):0.051 mg/m3(0.005 ppm) | |
| DUST, INERT OR NUISANCE | 1314-13-2 | Malaysia OELs | TWA (proposed)(respirable particles)(8 hours):3 mg/m3;TWA (proposed)(Inhalable particulate)(8 hours):10 mg/m3 | |
| Zinc Oxide | 1314-13-2 | ACGIH | TWA(respirable fraction):2 mg/m3;STEL(respirable fraction):10 mg/m3 | |
| Zinc Oxide | 1314-13-2 | Malaysia OELs | TWA(as fume)(8 hours):5 mg/m3;TWA(as dust)(8 hours):10 mg/m3 | |
| DUST, INERT OR NUISANCE | 13463-67-7 | Malaysia OELs | TWA (proposed)(respirable particles)(8 hours):3 mg/m3;TWA (proposed)(Inhalable | |

| | | | | |
|---|---|---|---|---|
| | | | particulate)(8 hours):10 mg/m3 | |
| Titanium Dioxide | 13463-67-7 | ACGIH | TWA:10 mg/m3 | A4: Not class. as human carcin |
| Titanium Dioxide | 13463-67-7 | Malaysia OELs | TWA(8 hours):10 mg/m3 | |
| Heptane | 142-82-5 | ACGIH | TWA:400 ppm;STEL:500 ppm | |
| Heptane | 142-82-5 | Malaysia OELs | TWA(8 hours):1640 mg/m3(400 ppm) | |
| Aluminum, insoluble compounds | 21645-51-2 | ACGIH | TWA(respirable fraction):1 mg/m3 | A4: Not class. as human carcin |
| DUST, INERT OR NUISANCE | 21645-51-2 | Malaysia OELs | TWA (proposed)(respirable particles)(8 hours):3 mg/m3;TWA (proposed)(Inhalable particulate)(8 hours):10 mg/m3 | |
| DUST, INERT OR NUISANCE | 7631-86-9 | Malaysia OELs | TWA (proposed)(respirable particles)(8 hours):3 mg/m3;TWA (proposed)(Inhalable particulate)(8 hours):10 mg/m3 | |

ACGIH : American Conference of Governmental Industrial Hygienists
CMRG : Chemical Manufacturer's Recommended Guidelines
Malaysia OELs : Malaysia. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations
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/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

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

**Eye/face protection**
None required.

**Skin/hand protection**
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
Gloves made from the following material(s) are recommended: 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 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 vapors 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 |
| **Specific Physical Form:** | Paste |
| **Color** | White |
| **Odor** | Slight Urethane |
| **Odor threshold** | *No Data Available* |
| **pH** | *Not Applicable* |
| **Melting point/Freezing point** | *Not Applicable* |
| **Boiling point/Initial boiling point/Boiling range** | *Not Applicable* |
| **Flash Point** | No flash point |
| **Evaporation rate** | *No Data Available* |
| **Flammability (solid, gas)** | Not Applicable |
| **Flammable Limits(LEL)** | *Not Applicable* |
| **Flammable Limits(UEL)** | *Not Applicable* |
| **Vapor Pressure** | *No Data Available* |
| **Vapor Density and/or Relative Vapor Density** | *No Data Available* |
| **Density** | 1.3 g/ml |
| **Relative Density** | 1.3 [*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* |
| **Viscosity/Kinematic Viscosity** | 100,000 - 500,000 mPa-s |
| **Volatile Organic Compounds** | 38 g/l [*Test Method:*tested per EPA method 24] [*Details:*EU VOC content] |
| **Percent volatile** | 2.83 % weight |
| **VOC Less H2O & Exempt Solvents** | 38 g/l [*Test Method:*tested per EPA method 24] |
| **Molecular weight** | *No Data Available* |

**Nanoparticles**
This material contains nanoparticles.

# 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 polymerization will not occur.

**10.4. Conditions to avoid**
None known.

**10.5. Incompatible materials**
Amines

Alcohols
Water

**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 labeling, 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.

Allergic Respiratory Reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest.

May cause additional health effects (see below).

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

**Ingestion:**
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

**Additional Health Effects:**

**Prolonged or repeated exposure may cause target organ effects:**
Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

**Additional Information:**
Persons previously sensitized to isocyanates may develop a cross-sensitization reaction to other isocyanates.

**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 | Inhalation-Vapor(4 hr) | | No data available; calculated ATE >50 mg/l |
| Overall product | Ingestion | | No data available; calculated ATE >5,000 mg/kg |
| Urethane Polymer | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| Urethane Polymer | Ingestion | Rat | LD50 > 5,000 mg/kg |
| Titanium Dioxide | Dermal | Rabbit | LD50 > 10,000 mg/kg |
| Titanium Dioxide | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 6.82 mg/l |
| Titanium Dioxide | Ingestion | Rat | LD50 > 10,000 mg/kg |
| Fumed Silica | Dermal | Rabbit | LD50 > 5,000 mg/kg |
| Fumed Silica | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 0.691 mg/l |
| Fumed Silica | Ingestion | Rat | LD50 > 5,110 mg/kg |
| p,p'-Methylenebis(Phenyl Isocyanate) | Dermal | Rabbit | LD50 > 5,000 mg/kg |
| p,p'-Methylenebis(Phenyl Isocyanate) | Inhalation-Dust/Mist (4 hours) | Rat | LC50 0.368 mg/l |
| p,p'-Methylenebis(Phenyl Isocyanate) | Ingestion | Rat | LD50 31,600 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 |
| Carbitol Acetate | Dermal | Rabbit | LD50 15,000 mg/kg |
| Carbitol Acetate | Ingestion | Rat | LD50 11,000 mg/kg |
| Fumed Silica | Dermal | Rabbit | LD50 > 5,000 mg/kg |
| Fumed Silica | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 0.691 mg/l |
| Fumed Silica | Ingestion | Rat | LD50 > 5,110 mg/kg |
| Alumina Trihydrate | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| Alumina Trihydrate | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 2.3 mg/l |
| Alumina Trihydrate | Ingestion | Rat | LD50 > 5,000 mg/kg |
| Heptane | Dermal | Rabbit | LD50 3,000 mg/kg |
| Heptane | Inhalation-Vapor (4 hours) | Rat | LC50 103 mg/l |
| Heptane | Ingestion | Rat | LD50 > 15,000 mg/kg |
| (Gamma-mercaptopropyl)trimethoxysilane | Dermal | Rabbit | LD50 2,270 mg/kg |
| (Gamma-mercaptopropyl)trimethoxysilane | Ingestion | Rat | LD50 770 mg/kg |

ATE = acute toxicity estimate

## Skin Corrosion/Irritation

| Name | Species | Value |
|---|---|---|
| Titanium Dioxide | Rabbit | No significant irritation |
| Fumed Silica | Rabbit | No significant irritation |
| p,p'-Methylenebis(Phenyl Isocyanate) | official classification | Irritant |
| Zinc Oxide | Human and animal | No significant irritation |
| Carbitol Acetate | Human and animal | Minimal irritation |
| Fumed Silica | Rabbit | No significant irritation |

| | | |
|---|---|---|
| Alumina Trihydrate | Rabbit | No significant irritation |
| Heptane | Human | Mild irritant |
| (Gamma-mercaptopropyl)trimethoxysilane | Rabbit | No significant irritation |

**Serious Eye Damage/Irritation**

| Name | Species | Value |
|---|---|---|
| Titanium Dioxide | Rabbit | No significant irritation |
| Fumed Silica | Rabbit | No significant irritation |
| p,p'-Methylenebis(Phenyl Isocyanate) | official classification | Severe irritant |
| Zinc Oxide | Rabbit | Mild irritant |
| Carbitol Acetate | Rabbit | Severe irritant |
| Fumed Silica | Rabbit | No significant irritation |
| Alumina Trihydrate | Rabbit | No significant irritation |
| Heptane | Professional judgement | Moderate irritant |
| (Gamma-mercaptopropyl)trimethoxysilane | Rabbit | No significant irritation |

**Sensitization:**

**Skin Sensitization**

| Name | Species | Value |
|---|---|---|
| Titanium Dioxide | Human and animal | Not classified |
| Fumed Silica | Human and animal | Not classified |
| p,p'-Methylenebis(Phenyl Isocyanate) | official classification | Sensitizing |
| Zinc Oxide | Guinea pig | Not classified |
| Carbitol Acetate | Human and animal | Not classified |
| Fumed Silica | Human and animal | Not classified |
| Alumina Trihydrate | Guinea pig | Not classified |
| (Gamma-mercaptopropyl)trimethoxysilane | Guinea pig | Sensitizing |

**Respiratory Sensitization**

| Name | Species | Value |
|---|---|---|
| p,p'-Methylenebis(Phenyl Isocyanate) | Human | Sensitizing |

**Germ Cell Mutagenicity**

| Name | Route | Value |
|---|---|---|
| Titanium Dioxide | In Vitro | Not mutagenic |
| Titanium Dioxide | In vivo | Not mutagenic |
| Fumed Silica | In Vitro | Not mutagenic |
| p,p'-Methylenebis(Phenyl Isocyanate) | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| 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 |
| Carbitol Acetate | In Vitro | Not mutagenic |
| Fumed Silica | In Vitro | Not mutagenic |
| Heptane | In Vitro | Not mutagenic |
| (Gamma-mercaptopropyl)trimethoxysilane | In Vitro | Not mutagenic |

### Carcinogenicity

| Name | Route | Species | Value |
|---|---|---|---|
| Titanium Dioxide | Ingestion | Multiple animal species | Not carcinogenic |
| Titanium Dioxide | Inhalation | Rat | Carcinogenic |
| Fumed Silica | Not Specified | Mouse | Some positive data exist, but the data are not sufficient for classification |
| p,p'-Methylenebis(Phenyl Isocyanate) | Inhalation | Rat | Some positive data exist, but the data are not sufficient for classification |
| Fumed Silica | Not Specified | Mouse | Some positive data exist, but the data are not sufficient for classification |
| Alumina Trihydrate | Not Specified | Multiple animal species | Not carcinogenic |

### Reproductive Toxicity

### Reproductive and/or Developmental Effects

| Name | Route | Value | Species | Test Result | Exposure Duration |
|---|---|---|---|---|---|
| Fumed Silica | Ingestion | Not classified for female reproduction | Rat | NOAEL 509 mg/kg/day | 1 generation |
| Fumed Silica | Ingestion | Not classified for male reproduction | Rat | NOAEL 497 mg/kg/day | 1 generation |
| Fumed Silica | Ingestion | Not classified for development | Rat | NOAEL 1,350 mg/kg/day | during organogenesis |
| p,p'-Methylenebis(Phenyl Isocyanate) | Inhalation | Not classified for development | Rat | NOAEL 0.004 mg/l | during organogenesis |
| Zinc Oxide | Ingestion | Not classified for reproduction and/or development | Multiple animal species | NOAEL 125 mg/kg/day | premating & during gestation |
| Fumed Silica | Ingestion | Not classified for female reproduction | Rat | NOAEL 509 mg/kg/day | 1 generation |
| Fumed Silica | Ingestion | Not classified for male reproduction | Rat | NOAEL 497 mg/kg/day | 1 generation |
| Fumed Silica | Ingestion | Not classified for development | Rat | NOAEL 1,350 mg/kg/day | during organogenesis |
| Alumina Trihydrate | Ingestion | Not classified for development | Rat | NOAEL 768 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 |
|---|---|---|---|---|---|---|
| p,p'-Methylenebis(Phenyl Isocyanate) | Inhalation | respiratory irritation | May cause respiratory irritation | official classification | NOAEL Not available | |
| Carbitol Acetate | Inhalation | central nervous system depression | May cause drowsiness or dizziness | Human and animal | NOAEL Not available | not applicable |
| Carbitol Acetate | Ingestion | central nervous system depression | May cause drowsiness or dizziness | Multiple animal species | NOAEL Not available | not applicable |
| Heptane | Inhalation | central nervous | May cause drowsiness or | Human | NOAEL Not | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | system depression | dizziness | | available | |
| Heptane | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | Human | NOAEL Not available | |
| Heptane | Ingestion | central nervous system depression | May cause drowsiness or dizziness | Human | NOAEL Not available | |

**Specific Target Organ Toxicity - repeated exposure**

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|---|---|---|---|---|---|---|
| Titanium Dioxide | Inhalation | respiratory system | Some positive data exist, but the data are not sufficient for classification | Rat | LOAEL 0.01 mg/l | 2 years |
| Titanium Dioxide | Inhalation | pulmonary fibrosis | Not classified | Human | NOAEL Not available | occupational exposure |
| Fumed Silica | Inhalation | respiratory system \| silicosis | Not classified | Human | NOAEL Not available | occupational exposure |
| p,p'-Methylenebis(Phenyl Isocyanate) | Inhalation | respiratory system | Causes damage to organs through prolonged or repeated exposure | Rat | LOAEL 0.004 mg/l | 13 weeks |
| 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 |
| Carbitol Acetate | Inhalation | respiratory system \| liver \| immune system \| kidney and/or bladder | Not classified | Rat | NOAEL 0.48 mg/l | 2 weeks |
| Fumed Silica | Inhalation | respiratory system \| silicosis | Not classified | Human | NOAEL Not available | occupational exposure |
| Heptane | Inhalation | liver \| nervous system \| kidney and/or bladder | Not classified | Rat | NOAEL 12 mg/l | 26 weeks |

**Aspiration Hazard**

| Name | Value |
|---|---|
| Heptane | Aspiration hazard |

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

# 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 labeling, 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 # | Organism | Type | Exposure | Test Endpoint | Test Result |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| Urethane Polymer | 51447-37-1 | | Data not available or insufficient for classification | | | N/A |
| Titanium Dioxide | 13463-67-7 | Activated sludge | Experimental | 3 hours | NOEC | >=1,000 mg/l |
| Titanium Dioxide | 13463-67-7 | Diatom | Experimental | 72 hours | EC50 | >10,000 mg/l |
| Titanium Dioxide | 13463-67-7 | Fathead Minnow | Experimental | 96 hours | LC50 | >100 mg/l |
| Titanium Dioxide | 13463-67-7 | Water flea | Experimental | 48 hours | EC50 | >100 mg/l |
| Titanium Dioxide | 13463-67-7 | Diatom | Experimental | 72 hours | NOEC | 5,600 mg/l |
| Fumed Silica | 112945-52-5 | Green Algae | Experimental | 72 hours | EC50 | >100 mg/l |
| Fumed Silica | 112945-52-5 | Water flea | Experimental | 24 hours | EC50 | >100 mg/l |
| Fumed Silica | 112945-52-5 | Zebra Fish | Experimental | 96 hours | LC50 | >100 mg/l |
| Fumed Silica | 112945-52-5 | Green Algae | Experimental | 72 hours | NOEC | 60 mg/l |
| p,p'-Methylenebis(Phenyl Isocyanate) | 101-68-8 | Activated sludge | Estimated | 3 hours | EC50 | >100 mg/l |
| p,p'-Methylenebis(Phenyl Isocyanate) | 101-68-8 | Green algae | Estimated | 72 hours | EC50 | >1,640 mg/l |
| p,p'-Methylenebis(Phenyl Isocyanate) | 101-68-8 | Water flea | Estimated | 24 hours | EC50 | >1,000 mg/l |
| p,p'-Methylenebis(Phenyl Isocyanate) | 101-68-8 | Zebra Fish | Estimated | 96 hours | LC50 | >1,000 mg/l |
| p,p'-Methylenebis(Phenyl Isocyanate) | 101-68-8 | Green algae | Estimated | 72 hours | NOEC | 1,640 mg/l |
| p,p'-Methylenebis(Phenyl Isocyanate) | 101-68-8 | Water flea | Estimated | 21 days | NOEC | 10 mg/l |
| 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 |
| Alkyl Isocyanate Silane | 85702-90-5 | | Data not available or insufficient for classification | | | N/A |
| Alumina | 21645-51-2 | Fish other | Experimental | 96 hours | No tox obs at | >100 mg/l |

| | | | | | | |
|---|---|---|---|---|---|---|
| Trihydrate | | | | | lmt of water sol | |
| Alumina Trihydrate | 21645-51-2 | Green Algae | Experimental | 72 hours | No tox obs at lmt of water sol | >100 mg/l |
| Alumina Trihydrate | 21645-51-2 | Water flea | Experimental | 48 hours | No tox obs at lmt of water sol | >100 mg/l |
| Alumina Trihydrate | 21645-51-2 | Green Algae | Experimental | 72 hours | No tox obs at lmt of water sol | 100 mg/l |
| Carbitol Acetate | 112-15-2 | Fathead Minnow | Experimental | 96 hours | LC50 | 110 mg/l |
| Carbitol Acetate | 112-15-2 | Green algae | Experimental | 72 hours | EC50 | >100 mg/l |
| Carbitol Acetate | 112-15-2 | Water flea | Experimental | 48 hours | EC50 | >100 mg/l |
| Carbitol Acetate | 112-15-2 | Green algae | Experimental | 72 hours | NOEC | 100 mg/l |
| Fumed Silica | 7631-86-9 | | Data not available or insufficient for classification | | | N/A |
| Heptane | 142-82-5 | Water flea | Experimental | 48 hours | EC50 | 1.5 mg/l |
| Heptane | 142-82-5 | Water flea | Estimated | 21 days | NOEC | 0.17 mg/l |
| (Gamma-mercaptopropyl)trimethoxysilane | 4420-74-0 | Green algae | Experimental | 72 hours | EC50 | 267 mg/l |
| (Gamma-mercaptopropyl)trimethoxysilane | 4420-74-0 | Water flea | Experimental | 48 hours | EC50 | 6.7 mg/l |
| (Gamma-mercaptopropyl)trimethoxysilane | 4420-74-0 | Zebra Fish | Experimental | 96 hours | LC50 | 439 mg/l |

**12.2. Persistence and degradability**

| Material | CAS No. | Test Type | Duration | Study Type | Test Result | Protocol |
|---|---|---|---|---|---|---|
| Urethane Polymer | 51447-37-1 | Data not availbl-insufficient | | | N/A | |
| Titanium Dioxide | 13463-67-7 | Data not availbl-insufficient | | | N/A | |
| Fumed Silica | 112945-52-5 | Data not availbl-insufficient | | | N/A | |
| p,p'-Methylenebis(Phenyl Isocyanate) | 101-68-8 | Estimated Hydrolysis | | Hydrolytic half-life | 20 hours (t 1/2) | Non-standard method |
| Zinc Oxide | 1314-13-2 | Data not availbl-insufficient | | | N/A | |
| Alkyl | 85702-90-5 | Data not | | | N/A | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Isocyanate Silane | | availbl-insufficient | | | | |
| Alumina Trihydrate | 21645-51-2 | Data not availbl-insufficient | | | N/A | |
| Carbitol Acetate | 112-15-2 | Experimental Biodegradation | 28 days | Biological Oxygen Demand | 100 % BOD/ThBOD | OECD 301C - MITI (I) |
| Fumed Silica | 7631-86-9 | Data not availbl-insufficient | | | N/A | |
| Heptane | 142-82-5 | Experimental Photolysis | | Photolytic half-life (in air) | 4.24 days (t 1/2) | Non-standard method |
| Heptane | 142-82-5 | Experimental Biodegradation | 28 days | Biological Oxygen Demand | 101 % BOD/ThBOD | OECD 301C - MITI (I) |
| (Gamma-mercaptopropyl)trimethoxysilane | 4420-74-0 | Estimated Hydrolysis | | Hydrolytic half-life | 53.3 minutes (t 1/2) | Non-standard method |

**12.3. Bioaccumulative potential**

| Material | CAS No. | Test Type | Duration | Study Type | Test Result | Protocol |
|---|---|---|---|---|---|---|
| Urethane Polymer | 51447-37-1 | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| Titanium Dioxide | 13463-67-7 | Experimental BCF-Carp | 42 days | Bioaccumulation Factor | 9.6 | Non-standard method |
| Fumed Silica | 112945-52-5 | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| p,p'-Methylenebis(Phenyl Isocyanate) | 101-68-8 | Experimental BCF-Carp | 28 days | Bioaccumulation Factor | 200 | OECD 305E-Bioaccum Fl-thru fis |
| Zinc Oxide | 1314-13-2 | Experimental BCF-Carp | 56 days | Bioaccumulation Factor | ≤217 | OECD 305E-Bioaccum Fl-thru fis |
| Alkyl Isocyanate Silane | 85702-90-5 | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| Alumina Trihydrate | 21645-51-2 | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |
| Carbitol Acetate | 112-15-2 | Experimental Bioconcentration | | Log of Octanol/H2O part. coeff | 0.74 | Non-standard method |
| Fumed Silica | 7631-86-9 | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |

| | | | | | | |
|---|---|---|---|---|---|---|
| Heptane | 142-82-5 | Estimated Bioconcentration | | Bioaccumulation Factor | 105 | Est: Bioconcentration factor |
| (Gamma-mercaptopropyl)trimethoxysilane | 4420-74-0 | Estimated Bioconcentration | | Log of Octanol/H2O part. coeff | 0.25 | Est: Octanol-water part. coeff |

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

**12.5 Other adverse effects**

| Material | CAS No. | Ozone Depletion Potential | Global Warming Potential |
|---|---|---|---|
| (gamma-mercaptopropyl)trimethoxysilane | 4420-74-0 | 0 | |

## SECTION 13: Disposal considerations

**13.1. Disposal methods**

According to the Environmental Quality (Scheduled Wastes) Regulations 2005, scheduled waste has to be sent to a prescribed premise for recycling, treatment or disposal. Please approach Kualiti Alam for proper schedule waste classification and disposal.

## SECTION 14: Transport Information

**Marine Transport (IMDG)**

**UN Number:**None assigned.
**Proper Shipping Name:**None assigned.
**Technical Name:**None assigned.
**Hazard Class/Division:**None assigned.
**Subsidiary Risk:**None assigned.
**Packing Group:**None assigned.
**Limited Quantity:**None assigned.
**Marine Pollutant:** None assigned.
**Marine Pollutant Technical Name:** None assigned.
**Other Dangerous Goods Descriptions:**
Not restricted, as per IMDG code 2.10.2.7, marine pollutant exception.

**Air Transport (IATA)**

**UN Number:**None assigned.
**Proper Shipping Name:**None assigned.
**Technical Name:**None assigned.
**Hazard Class/Division:**None assigned.
**Subsidiary Risk:**None assigned.
**Packing Group:**None assigned.
**Limited Quantity:**None assigned.
**Marine Pollutant:** None assigned.
**Marine Pollutant Technical Name:** None assigned.
**Other Dangerous Goods Descriptions:**

Not restricted, as per Special Provision A197, environmentally hazardous substance exception.

Transportation classifications are provided as a customer service. As for shipping, YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M's transportation classifications are based on product formulation, packaging, 3M policies and 3M's understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and not the packaging, labeling or marking requirements. The above information is only for reference. If you are shipping by air or ocean, YOU are advised to check & meet applicable regulatory requirements.

## 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 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.

## 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.

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