



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
US OSHA Hazard Communication Standard (29 CFR 1910.1200)

Revision date 14-Feb-2025

Revision Number 4

1. Identification

Product identifier

Product Name Part A: MetalSet A4

Other means of identification

Product Code(s) FG-10A

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Formulated Epoxy Resin

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Address

Smooth-On, Inc, 5600 Lower Macungie Rd, Macungie, PA 18062, USA, Phone: +01.610.252.5800, www.smooth-on.com, sds@smooth-on.com

E-mail sds@smooth-on.com

Emergency telephone number

Emergency Telephone Chemtel: US: 1-800.255.3924; International: 1-813.248.0585

2. Hazard(s) identification

Classification

| | |
|-----------------------------------|-------------|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 2A |
| Skin sensitization | Category 1 |

Hazards not otherwise classified (HNOC)

Not applicable

Label elements



Warning

Hazard statements

H315 - Causes skin irritation
 H317 - May cause an allergic skin reaction
 H319 - Causes serious eye irritation

Precautionary Statements - Prevention

Avoid breathing dust/fume/gas/mist/vapors/spray.
 Use only outdoors or in a well-ventilated area.
 Wash face, hands and any exposed skin thoroughly after handling.
 Wear protective gloves.
 Contaminated work clothing must not be allowed out of the workplace.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 If eye irritation persists: Get medical advice/attention.
 IF ON SKIN: Wash with plenty of water and soap.
 Take off contaminated clothing and wash it before reuse.
 If skin irritation or rash occurs: Get medical advice/attention.
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 Call a POISON CENTER or doctor.

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed.
 Store locked up.

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant.

Other information

Toxic to aquatic life with long lasting effects.

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

| Chemical name | CAS No. | Weight-% | Trade secret |
|---|------------|----------|--------------|
| Oxirane, 2,2-[(1-methylethylidene)bis(4,1-phenyleneoxymeth ylene)]bis-, homopolymer | 25085-99-8 | 45 - 70 | * |
| Aluminum | 7429-90-5 | 20 - 30 | * |
| Triphenyl Phosphite | 101-02-0 | 5 - 10 | * |

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

General advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Inhalation

Remove to fresh air. Get medical attention immediately if symptoms occur. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration

with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen.

| | |
|---|--|
| Eye contact | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Get medical attention if irritation develops and persists. Remove contact lenses, if present and easy to do. Continue rinsing. |
| Skin contact | May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician. Wash off immediately with soap and plenty of water for at least 15 minutes. |
| Ingestion | Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician or poison control center immediately. |
| Self-protection of the first aider | Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Do not breathe vapor or mist. Use personal protective equipment as required. See section 8 for more information. |

Most important symptoms and effects, both acute and delayed

| | |
|----------------------------|---|
| Symptoms | Itching. Rashes. Hives. Coughing and/ or wheezing. Difficulty in breathing. |
| Effects of Exposure | No information available. |

Indication of any immediate medical attention and special treatment needed

| | |
|---------------------------|--|
| Note to physicians | May cause sensitization in susceptible persons. Treat symptomatically. |
|---------------------------|--|

5. Fire-fighting measures

| | |
|---|--|
| Suitable Extinguishing Media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Large Fire | CAUTION: Use of water spray when fighting fire may be inefficient. |
| Unsuitable extinguishing media | Do not scatter spilled material with high pressure water streams. |
| Specific hazards arising from the chemical | Product is or contains a sensitizer. May cause sensitization by skin contact. |
| Explosion data | |
| Sensitivity to mechanical impact | None. |
| Sensitivity to static discharge | None. |
| Special protective equipment and precautions for fire-fighters | Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. |

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

| | |
|-----------------------------|--|
| Personal precautions | Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Do not breathe vapor or mist. |
| Other information | Refer to protective measures listed in Sections 7 and 8. |

Methods and material for containment and cleaning up

- Methods for containment** Prevent further leakage or spillage if safe to do so.
- Methods for cleaning up** Pick up and transfer to properly labeled containers.
- Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Do not breathe vapor or mist. Handle product only in closed system or provide appropriate exhaust ventilation.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

8. Exposure controls/personal protection

Control parameters

Exposure Limits The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH |
|-----------------------|--|--|--|
| Aluminum 7429-90-5 | TWA: 1 mg/m ³ respirable particulate matter | TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction | TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust |

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

- Eye/face protection** Wear safety glasses with side shields (or goggles). None required for consumer use.
- Hand protection** Wear suitable gloves. Impervious gloves.
- Skin and body protection** Wear suitable protective clothing. Long sleeved clothing.

| | |
|---------------------------------------|---|
| Respiratory protection | Appropriate respiratory protection should be selected and used according to the chemical nature, hazards and use of this product and safety requirements of the local jurisdiction. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. |
| General hygiene considerations | Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes or clothing. Do not breathe vapor or mist. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. |

9. Physical and chemical properties

Information on basic physical and chemical properties

| | |
|-----------------------|--------------------------|
| Physical state | Paste / Gel Liquid |
| Appearance | Paste |
| Color | black |
| Odor | Mild |
| Odor threshold | No information available |

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|--|-----------------------|-------------------------|
| pH | No data available | None known |
| pH (as aqueous solution) | | None known |
| Melting point / freezing point | No data available | None known |
| Initial boiling point and boiling range | No data available | None known |
| Flash point | > 148.889 °C / 300 °F | None known |
| Evaporation rate | No data available | None known |
| Flammability | No data available | None known |
| Flammability Limit in Air | | None known |
| Upper flammability or explosive limits | No data available | |
| Lower flammability or explosive limits | No data available | |
| Vapor pressure | No data available | None known |
| Relative vapor density | No data available | None known |
| Relative density | 1.0 - 1.2 | None known |
| Water solubility | Insoluble in water | None known |
| Solubility(ies) | No data available | None known |
| Partition coefficient | No data available | None known |
| Autoignition temperature | No data available | None known |
| Decomposition temperature | | None known |
| Kinematic viscosity | No data available | None known |
| Dynamic viscosity | No data available | None known |

Other information

| | |
|-----------------------------|--------------------------|
| Explosive properties | No information available |
| Oxidizing properties | No information available |
| Softening point | No information available |
| Molecular weight | No information available |
| VOC content | No information available |
| Liquid Density | No information available |
| Bulk density | No information available |

10. Stability and reactivity

| | |
|---------------------------|---------------------------------|
| Reactivity | No information available. |
| Chemical stability | Stable under normal conditions. |

Possibility of hazardous reactions None under normal processing.

Conditions to avoid Excessive heat.

Incompatible materials Strong acids. Strong bases. Strong oxidizing agents.

Hazardous decomposition products None known based on information supplied.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. Toxic by inhalation. (based on components).

Eye contact Specific test data for the substance or mixture is not available. Causes eye irritation. May cause redness, itching, and pain.

Skin contact May cause sensitization by skin contact. Specific test data for the substance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). Causes skin irritation.

Ingestion Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Itching. Rashes. Hives. Redness. May cause redness and tearing of the eyes. Coughing and/ or wheezing. Difficulty in breathing.

Acute toxicity Toxic by inhalation.

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 7,175.50 mg/kg
ATEmix (dermal) 9,755.90 mg/kg
ATEmix (inhalation-dust/mist) > 5 mg/l

Component Information

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---------------------------------|----------------------|------------------------------|--------------------------|
| Aluminum 7429-90-5 | - | - | > 0.888 mg/L (Rat) 4 h |
| Triphenyl Phosphite 101-02-0 | = 1590 mg/kg (Rat) | 2000 - 5000 mg/kg (Rabbit) | > 6.7 mg/L (Rat) 1 h |

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes skin irritation.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes eye irritation.

Respiratory or skin sensitization May cause an allergic skin reaction.

| | |
|---------------------------------|---------------------------------|
| Germ cell mutagenicity | No information available. |
| Carcinogenicity | No information available. |
| Reproductive toxicity | No information available. |
| STOT - single exposure | No information available. |
| STOT - repeated exposure | No information available. |
| Target organ effects | Respiratory system, Eyes, Skin. |
| Aspiration hazard | No information available. |
| Other adverse effects | No information available. |
| Interactive effects | No information available. |

12. Ecological information

| | |
|--------------------------------------|--|
| Ecotoxicity | Toxic to aquatic life with long lasting effects. |
| Persistence and degradability | No information available. |

Bioaccumulation

Component Information

| Chemical name | Partition coefficient |
|---------------------------------|-----------------------|
| Triphenyl Phosphite 101-02-0 | 4.98 |

| | |
|------------------------------|---------------------------|
| Other adverse effects | No information available. |
|------------------------------|---------------------------|

13. Disposal considerations

Disposal methods

| | |
|--|---|
| Waste from residues/unused products | Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. |
| Contaminated packaging | Do not reuse empty containers. |
| California Hazardous Waste Status | This product contains one or more substances that are listed with the State of California as a hazardous waste. |

14. Transport information

DOT Not regulated

TDG Not regulated

IATA Regulated

This product is not regulated for single or combination packaging having a net quantity of 5L or less.

UN number or ID number 3082
UN proper shipping name Environmentally hazardous substance, liquid, n.o.s. (Epoxy Resin)
Transport hazard class(es) 9
Packing group III

IMDG Regulated

This product is not regulated for single or combination packaging having a net quantity of 5L or less.

UN number or ID number UN 3082
UN proper shipping name Environmentally hazardous substance, liquid, n.o.s. (Epoxy Resin)
Transport hazard class(es) 9
Packing group III
EmS-No. F-A, S-F
Marine pollutant P
Marine Pollutant Marine pollutant

15. Regulatory information

International Inventories

TSCA Contact supplier for inventory compliance status.
DSL/NDL Contact supplier for inventory compliance status.
EINECS/ELINCS Contact supplier for inventory compliance status.
ENCS Contact supplier for inventory compliance status.
IECSC Contact supplier for inventory compliance status.
KECI Contact supplier for inventory compliance status.
PICCS Contact supplier for inventory compliance status.
AIIC Contact supplier for inventory compliance status.
NZIoC Contact supplier for inventory compliance status.

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical

or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

| Chemical name | SARA 313 - Threshold Values % |
|----------------------|-------------------------------|
| Aluminum - 7429-90-5 | 1.0 |

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

U.S. State Right-to-Know Regulations

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|-----------------------|------------|---------------|--------------|
| Aluminum 7429-90-5 | X | X | X |

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

| | | | | |
|-----------------------------------|----------------------------------|----------------|--------------------|-----------------------|
| NFPA | Health hazards 3 | Flammability 0 | Instability 0 | Special hazards - |
| HMIS | Health hazards 3* | Flammability 0 | Physical hazards 0 | Personal protection X |
| <i>Chronic Hazard Star Legend</i> | <i>* = Chronic Health Hazard</i> | | | |

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend

SVHC: Substances of Very High Concern for Authorization:
 PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances
 vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances
 STOT: Specific Target Organ Toxicity
 ATE: Acute Toxicity Estimate
 LC50: 50% Lethal Concentration
 LD50: 50% Lethal Dose

Legend Section 8: Exposure controls/personal protection

| | | | |
|---------|-----------------------------|------|----------------------------------|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| Ceiling | Maximum limit value | Sk* | Skin designation |
| + | Sensitizers | | |

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database

European Food Safety Authority (EFSA)
Environmental Protection Agency
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Revision date 14-Feb-2025
Revision Note No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
US OSHA Hazard Communication Standard (29 CFR 1910.1200)

Revision date 14-Feb-2025

Revision Number 3

1. Identification

Product identifier

Product Name Part B: MetalSet A4

Other means of identification

Product Code(s) FG-10B

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Epoxy Adhesive

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Address

Smooth-On, Inc, 5600 Lower Macungie Rd, Macungie, PA 18062, USA, Phone: +01.610.252.5800, www.smooth-on.com, sds@smooth-on.com

E-mail sds@smooth-on.com

Emergency telephone number

Emergency Telephone Chemtel: US: 1-800.255.3924; International: 1-813.248.0585

2. Hazard(s) identification

Classification

| | |
|-----------------------------------|-------------|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |
| Skin sensitization | Category 1 |
| Reproductive toxicity | Category 1B |

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Danger

Hazard statements

H315 - Causes skin irritation
 H317 - May cause an allergic skin reaction
 H318 - Causes serious eye damage
 H360 - May damage fertility or the unborn child

Precautionary Statements - Prevention

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Wear protective gloves/clothing and eye/face protection.
 Do not breathe dusts or mists.
 Wash face, hands and any exposed skin thoroughly after handling.
 Contaminated work clothing must not be allowed out of the workplace.

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 Immediately call a POISON CENTER or doctor.
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
 Wash contaminated clothing before reuse.
 If skin irritation or rash occurs: Get medical advice/attention.
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 Immediately call a POISON CENTER or doctor.
 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Precautionary Statements - Storage

Store locked up.

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant.

Other information

May be harmful if swallowed. May be harmful in contact with skin. Toxic to aquatic life with long lasting effects.

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

| Chemical name | CAS No. | Weight-% | Trade secret |
|---|------------|----------|--------------|
| Fatty acids, C18-unsaturated, dimers, polymers with tall-oil fatty acids and triethylenetetramine | 68082-29-1 | 15 - 40 | * |
| Tetraethylenepentamine | 112-57-2 | 1 - 5 | * |
| Titanium dioxide | 13463-67-7 | 1 - 5 | * |
| Triethylenetetramine | 112-24-3 | 1 - 5 | * |
| Diethylenetriamine | 111-40-0 | 0.1 - 1 | * |
| Bisphenol A | 80-05-7 | 0.1 - 1 | * |

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

| | |
|---|--|
| General advice | Immediate medical attention is required. Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention. |
| Inhalation | Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. |
| Eye contact | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical attention. May cause an allergic skin reaction. |
| Ingestion | Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention. |
| Self-protection of the first aider | Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Wear personal protective clothing (see section 8). |

Most important symptoms and effects, both acute and delayed

| | |
|----------------------------|--|
| Symptoms | Burning sensation. Itching. Rashes. Hives. |
| Effects of Exposure | May cause adverse reproductive effects - such as birth defect, miscarriages, or infertility. |

Indication of any immediate medical attention and special treatment needed

| | |
|---------------------------|---|
| Note to physicians | Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization in susceptible persons. Treat symptomatically. |
|---------------------------|---|

5. Fire-fighting measures

| | |
|---|--|
| Suitable Extinguishing Media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Large Fire | CAUTION: Use of water spray when fighting fire may be inefficient. |
| Unsuitable extinguishing media | Do not scatter spilled material with high pressure water streams. |
| Specific hazards arising from the chemical | The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. Product is or contains a sensitizer. May cause sensitization by skin contact. |
| Explosion data | |
| Sensitivity to mechanical impact | None. |
| Sensitivity to static discharge | None. |
| Special protective equipment and precautions for fire-fighters | Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. |

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other information Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Remove contaminated clothing and shoes.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

8. Exposure controls/personal protection

Control parameters

Exposure Limits The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH |
|--------------------------------|--|--|---|
| Titanium dioxide 13463-67-7 | TWA: 0.2 mg/m ³ nanoscale respirable particulate matter TWA: 2.5 mg/m ³ finescale respirable particulate matter | TWA: 15 mg/m ³ total dust (vacated) TWA: 10 mg/m ³ total dust | IDLH: 5000 mg/m ³ TWA: 2.4 mg/m ³ CIB 63 fine TWA: 0.3 mg/m ³ CIB 63 ultrafine, including engineered nanoscale |
| Diethylenetriamine 111-40-0 | TWA: 1 ppm Sk* | (vacated) TWA: 1 ppm (vacated) TWA: 4 mg/m ³ | TWA: 1 ppm TWA: 4 mg/m ³ |

Appropriate engineering controls

Engineering controls Showers
Eyewash stations

Ventilation systems.

Individual protection measures, such as personal protective equipment

| | |
|---------------------------------------|---|
| Eye/face protection | Tight sealing safety goggles. Face protection shield. |
| Hand protection | Wear suitable gloves. Impervious gloves. |
| Skin and body protection | Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. |
| Respiratory protection | Appropriate respiratory protection should be selected and used according to the chemical nature, hazards and use of this product and safety requirements of the local jurisdiction. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. |
| General hygiene considerations | Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. |

9. Physical and chemical properties

Information on basic physical and chemical properties

| | |
|-----------------------|--------------------------|
| Physical state | Paste / Gel Liquid |
| Appearance | Paste |
| Color | White |
| Odor | Mild ammonia odor |
| Odor threshold | No information available |

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|--|---------------------------|-------------------------|
| pH | No data available | None known |
| pH (as aqueous solution) | | None known |
| Melting point / freezing point | No data available | None known |
| Initial boiling point and boiling range | No data available | None known |
| Flash point | > 251.667 °C / 485 °F | None known |
| Evaporation rate | No data available | None known |
| Flammability | No data available | None known |
| Flammability Limit in Air | | None known |
| Upper flammability or explosive limits | No data available | |
| Lower flammability or explosive limits | No data available | |
| Vapor pressure | < 10 mmHg @ 20 °C / 70 °F | None known |
| Relative vapor density | > 1.0 | None known |
| Relative density | 1.4 | None known |
| Water solubility | Insoluble in water | None known |
| Solubility(ies) | No data available | None known |
| Partition coefficient | No data available | None known |
| Autoignition temperature | No data available | None known |
| Decomposition temperature | | None known |
| Kinematic viscosity | 320,000 centipoise | None known |
| Dynamic viscosity | No data available | None known |
| <u>Other information</u> | | |
| Explosive properties | No information available | |
| Oxidizing properties | No information available | |
| Softening point | No information available | |
| Molecular weight | No information available | |

| | |
|----------------|--------------------------|
| VOC content | No information available |
| Liquid Density | No information available |
| Bulk density | No information available |

10. Stability and reactivity

| | |
|------------------------------------|---|
| Reactivity | No information available. |
| Chemical stability | Stable under normal conditions. |
| Possibility of hazardous reactions | None under normal processing. |
| Conditions to avoid | Exposure to air or moisture over prolonged periods. |
| Incompatible materials | Acids. Bases. Oxidizing agent. |
| Hazardous decomposition products | None known based on information supplied. |

11. Toxicological information

Information on likely routes of exposure

Product Information

| | |
|---------------------|---|
| Inhalation | Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. |
| Eye contact | Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes. |
| Skin contact | Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. May be harmful in contact with skin. |
| Ingestion | Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. |

Symptoms related to the physical, chemical and toxicological characteristics

| | |
|-----------------|---|
| Symptoms | Redness. Burning. May cause blindness. Coughing and/ or wheezing. Itching. Rashes. Hives. |
|-----------------|---|

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

| | |
|-----------------|----------------|
| ATEmix (oral) | 2,683.50 mg/kg |
| ATEmix (dermal) | 2,421.20 mg/kg |

ATEmix (inhalation-dust/mist) 9.35 mg/l

Component Information

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|------------------------|--|-------------------------------------|
| Fatty acids, C18-unsaturated, dimers, polymers with tall-oil fatty acids and triethylenetetramine 68082-29-1 | - | > 2000 mg/kg (Rat) | - |
| Tetraethylenepentamine 112-57-2 | = 3990 mg/kg (Rat) | = 660 µL/kg (Rabbit) | - |
| Titanium dioxide 13463-67-7 | > 10000 mg/kg (Rat) | - | = 5.09 mg/L (Rat) 4 h |
| Triethylenetetramine 112-24-3 | = 1716.2 mg/kg (Rat) | = 1720 mg/kg (Rabbit) = 1465.4 mg/kg (Rabbit) | - |
| Diethylenetriamine 111-40-0 | = 1080 mg/kg (Rat) | = 672 mg/kg (Rabbit) | = 70 mg/L (Rat) 4 h |
| Bisphenol A 80-05-7 | = 3300 mg/kg (Rat) | = 3000 mg/kg (Rabbit) | > 170 mg/m ³ (Rat) 6 h |

Delayed and immediate effects as well as chronic effects from short and long-term exposure

- Skin corrosion/irritation** Classification based on data available for ingredients. Causes severe skin burns and eye damage.
- Serious eye damage/eye irritation** Classification based on data available for ingredients. Causes serious eye damage. Causes burns.
- Respiratory or skin sensitization** May cause an allergic skin reaction.
- Germ cell mutagenicity** No information available.
- Carcinogenicity** Contains a known or suspected carcinogen. Classification based on data available for ingredients. Suspected of causing cancer.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Chemical name | ACGIH | IARC | NTP | OSHA |
|--------------------------------|-------|----------|-----|------|
| Titanium dioxide 13463-67-7 | A3 | Group 2B | - | X |

Legend

- ACGIH (American Conference of Governmental Industrial Hygienists)**
- A3 - Animal Carcinogen
- IARC (International Agency for Research on Cancer)**
- Group 2B - Possibly Carcinogenic to Humans
- Occupational Safety and Health Administration of the US Department of Labor**
- X - Present

- Reproductive toxicity** Classification based on data available for ingredients. May damage fertility or the unborn child.
- STOT - single exposure** No information available.
- STOT - repeated exposure** No information available.

| | |
|------------------------------|----------------------------|
| Target organ effects | Respiratory system, Lungs. |
| Aspiration hazard | No information available. |
| Other adverse effects | No information available. |
| Interactive effects | No information available. |

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

| Chemical name | Algae/aquatic plants | Fish | Toxicity to microorganisms | Crustacea |
|--|--|--|----------------------------|--|
| Fatty acids, C18-unsaturated, dimers, polymers with tall-oil fatty acids and triethylenetetramine 68082-29-1 | - | LC50: =7.07mg/L (96h, Danio rerio) | - | - |
| Tetraethylenepentamine 112-57-2 | EC50: =2.1mg/L (72h, Pseudokirchneriella subcapitata) | LC50: =420mg/L (96h, Poecilia reticulata) | - | EC50: =24.1mg/L (48h, Daphnia magna) |
| Triethylenetetramine 112-24-3 | EC50: =2.5mg/L (72h, Desmodesmus subspicatus) EC50: =20mg/L (72h, Pseudokirchneriella subcapitata) EC50: =3.7mg/L (96h, Pseudokirchneriella subcapitata) | LC50: =570mg/L (96h, Poecilia reticulata) LC50: =495mg/L (96h, Pimephales promelas) | - | EC50: =31.1mg/L (48h, Daphnia magna) |
| Diethylenetriamine 111-40-0 | EC50: =1164mg/L (72h, Pseudokirchneriella subcapitata) EC50: =345.6mg/L (96h, Pseudokirchneriella subcapitata) EC50: =592mg/L (96h, Desmodesmus subspicatus) | LC50: =248mg/L (96h, Poecilia reticulata) LC50: =1014mg/L (96h, Poecilia reticulata) | - | EC50: =16mg/L (48h, Daphnia magna) |
| Bisphenol A 80-05-7 | EC50: =2.5mg/L (96h, Pseudokirchneriella subcapitata) | LC50: 3.6 - 5.4mg/L (96h, Pimephales promelas) LC50: 4.0 - 5.5mg/L (96h, Pimephales promelas) LC50: =4mg/L (96h, Oncorhynchus mykiss) LC50: =9.9mg/L (96h, Brachydanio rerio) | - | EC50: =10.2mg/L (48h, Daphnia magna) EC50: =3.9mg/L (48h, Daphnia magna) EC50: 9.2 - 11.4mg/L (48h, Daphnia magna) |

Persistence and degradability No information available.

Bioaccumulation

Component Information

| Chemical name | Partition coefficient |
|------------------------------------|-----------------------|
| Tetraethylenepentamine 112-57-2 | 1 |
| Triethylenetetramine 112-24-3 | -1.4 |
| Diethylenetriamine 111-40-0 | -1.3 |
| Bisphenol A 80-05-7 | 3.4 |

Other adverse effects No information available.

13. Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

California Hazardous Waste Status This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. Transport information

DOT Not regulated

IATA Not regulated

IMDG Not regulated

15. Regulatory information

International Inventories

TSCA Contact supplier for inventory compliance status.
DSL/NDSL Contact supplier for inventory compliance status.
EINECS/ELINCS Contact supplier for inventory compliance status.
ENCS Contact supplier for inventory compliance status.
IECSC Contact supplier for inventory compliance status.
KECI Contact supplier for inventory compliance status.
PICCS Contact supplier for inventory compliance status.
AIIC Contact supplier for inventory compliance status.
NZIoC Contact supplier for inventory compliance status.

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:

| Chemical name | California Proposition 65 |
|-----------------------|--------------------------------------|
| Bisphenol A - 80-05-7 | Developmental Female Reproductive |

U.S. State Right-to-Know Regulations

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|-------------------------------------|------------|---------------|--------------|
| Tetraethylenepentamine 112-57-2 | X | X | X |
| Titanium dioxide 13463-67-7 | X | X | X |
| Triethylenetetramine 112-24-3 | X | X | X |
| Diethylenetriamine 111-40-0 | X | X | X |
| Bisphenol A 80-05-7 | X | X | X |
| Aluminum oxide (Al2O3) 1344-28-1 | X | X | X |

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

| | | | | |
|-------------|---------------------------|-----------------------|---------------------------|------------------------------|
| NFPA | Health hazards 3 | Flammability 0 | Instability 0 | Special hazards - |
| HMIS | Health hazards 3 * | Flammability 0 | Physical hazards 0 | Personal protection X |

Chronic Hazard Star Legend * = Chronic Health Hazard

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend

SVHC: Substances of Very High Concern for Authorization:
 PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances
 vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances
 STOT: Specific Target Organ Toxicity
 ATE: Acute Toxicity Estimate
 LC50: 50% Lethal Concentration
 LD50: 50% Lethal Dose

Legend Section 8: Exposure controls/personal protection

| | | | |
|---------|-----------------------------|------|----------------------------------|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| Ceiling | Maximum limit value | Sk* | Skin designation |
| + | Sensitizers | | |

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 Environmental Protection Agency
 Acute Exposure Guideline Level(s) (AEGl(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 National Institute of Technology and Evaluation (NITE)
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 U.S. National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program
 Organization for Economic Co-operation and Development Screening Information Data Set
 World Health Organization

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Revision Note No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet