# SAFETY DATA SHEET

**United States**

## SOMOS® EvoLVe 128

## Section 1. Identification

| | | |
|---|---|---|
| **GHS product identifier** | : | SOMOS® EvoLVe 128 |
| **Other means of identification** | : | Not available. |
| **Product type** | : | Liquid. |
| **Material uses** | : | Stereolithography resins for the creation of three-dimensional models and prototypes directly from digital data. |
| **Supplier** | : | DSM Desotech Inc.<br>1122 St Charles Street<br>Elgin IL 60120<br>Tel: +1 (847) 697-0400 |
| **e-mail address of person responsible for this SDS** | : | DSMRESINS.SDS@dsm.com (Communication in English only please) |
| **Emergency telephone number** | : | DSM Desotech Inc.: +1 (847) 697-0401<br>(During normal business hours)<br>CHEMTREC (within the USA): (800) 424-9300 (24 hour)<br>CHEMTREC (International): +1 (703) 527-3887 [USA] (24 hour) |

## Section 2. Hazards identification

| | | |
|---|---|---|
| **OSHA/HCS status** | : | This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). |
| **Classification of the substance or mixture** | : | SKIN IRRITATION - Category 2<br>EYE IRRITATION - Category 2A<br>SKIN SENSITIZATION - Category 1 |

**GHS label elements**

**Hazard pictograms** :

| | | |
|---|---|---|
| **Signal word** | : | Warning |
| **Hazard statements** | : | H319 - Causes serious eye irritation.<br>H315 - Causes skin irritation.<br>H317 - May cause an allergic skin reaction. |

**Precautionary statements**

| | | |
|---|---|---|
| **Prevention** | : | P280 - Wear protective gloves: < 1 hour (breakthrough time): (0.12 mm) Nitrile gloves.. Wear eye or face protection.<br>P261 - Avoid breathing vapor.<br>P264 - Wash hands thoroughly after handling.<br>P272 (OSHA) - Contaminated work clothing must not be allowed out of the workplace. |
| **Response** | : | P302 + P352 + P363 - IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse.<br>P333 + P313 - If skin irritation or rash occurs: Get medical attention.<br>P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>P337 + P313 - If eye irritation persists: Get medical attention. |
| **Storage** | : | Not applicable. |
| **Disposal** | : | P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. |

**Hazards not otherwise classified** : None known.

**HMIS® IV Hazardous Material Information System (U.S.A.)** :

| | |
|---|---|
| Health | 2 |
| Flammability | 1 |
| Physical hazards | 0 |

The PPE (Personal Protection Equipment) designation in the HMIS is provided for use by employees at supplier sites only. Other users of this product are encouraged to evaluate the hazards of the product and assign PPE that is applicable to their specific situations.

**Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.**

**The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.**

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

**Other means of identification** : Not available.

**CAS number** : Not applicable.

| Ingredient name | % | CAS number |
|---|---|---|
| Multifunctional Acrylate | 10 - 25 | - |
| Monomer | 10 - 25 | - |
| Monomer | 10 - 25 | - |
| Multifunctional Acrylate | 10 - 25 | - |
| Epoxy | 5 - 10 | - |
| Epoxy | 5 - 10 | - |
| Multifunctional Acrylate | 1 - 5 | - |
| Additive | 1 - 5 | - |
| antimony compounds | 0.1-1 | - |
| antimony compounds | 0.1-1 | - |
| Epoxy | 0.1-1 | - |

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

**Occupational exposure limits, if available, are listed in Section 8.**

## Section 4. First aid measures

**Description of necessary first aid measures**

**Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

**Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Most important symptoms/effects, acute and delayed**

**Potential acute health effects**

**Eye contact** : Causes serious eye irritation.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : Causes skin irritation. May cause an allergic skin reaction.

**Ingestion** : No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

**Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness

**Inhalation** : No specific data.

**Skin contact** : Adverse symptoms may include the following:
irritation
redness

**Ingestion** : No specific data.

**Indication of immediate medical attention and special treatment needed, if necessary**

**Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments** : No specific treatment.

**Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

**See toxicological information (Section 11)**

# Section 5. Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media** : None known.

**Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

| | | |
|---|---|---|
| **Hazardous thermal decomposition products** | : | Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide<br>(dense) black smoke<br>aldehydes<br>organic acids<br>halogenated compounds |
| **Special protective actions for fire-fighters** | : | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
| **Special protective equipment for fire-fighters** | : | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |

## Section 6. Accidental release measures

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

| | | |
|---|---|---|
| **For non-emergency personnel** | : | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| **For emergency responders** | : | If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |
| **Environmental precautions** | : | Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |

**Methods and materials for containment and cleaning up**

| | | |
|---|---|---|
| **Small spill** | : | Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor. |
| **Large spill** | : | Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal. |

## Section 7. Handling and storage

**Precautions for safe handling**

| | | |
|---|---|---|
| **Protective measures** | : | Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. |
| **Advice on general occupational hygiene** | : | Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. |

**Conditions for safe storage, including any incompatibilities** : Store between the following temperatures: 15 to 30°C (59 to 86°F). Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Store in original container, protected from direct sunlight.

## Section 8. Exposure controls/personal protection

**Control parameters**

**Occupational exposure limits**

| | |
|---|---|
| Multifunctional Acrylate | None. |
| Monomer | None. |
| Monomer | None. |
| Multifunctional Acrylate | None. |
| Epoxy | None. |
| Epoxy | None. |
| Multifunctional Acrylate | None. |
| Additive | None. |
| antimony compounds | **ACGIH TLV (United States, 3/2017).**<br>TWA: 0.5 mg/m³, (as Sb) 8 hours.<br>**OSHA PEL 1989 (United States, 3/1989).**<br>TWA: 0.5 mg/m³, (as Sb) 8 hours.<br>**NIOSH REL (United States, 10/2016).**<br>TWA: 0.5 mg/m³, (as Sb) 10 hours.<br>**OSHA PEL (United States, 6/2016).**<br>TWA: 0.5 mg/m³, (as Sb) 8 hours. |
| antimony compounds | **ACGIH TLV (United States, 3/2017).**<br>TWA: 0.5 mg/m³, (as Sb) 8 hours.<br>**OSHA PEL 1989 (United States, 3/1989).**<br>TWA: 0.5 mg/m³, (as Sb) 8 hours.<br>**OSHA PEL (United States, 6/2016).**<br>TWA: 0.5 mg/m³, (as Sb) 8 hours.<br>**NIOSH REL (United States, 10/2016).**<br>TWA: 0.5 mg/m³, (as Sb) 10 hours. |
| Epoxy | None. |

**Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Individual protection measures**

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

| | | |
|---|---|---|
| **Hand protection** | : | Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. < 1 hour (breakthrough time): (0.12 mm) Nitrile gloves. |
| **Body protection** | : | Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. |
| **Other skin protection** | : | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. |
| **Respiratory protection** | : | Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. |
| **Remarks** | : | Wear nitrile or other chemical resistant gloves to avoid skin contact when handling partially cured fabricated objects in the "green" state of cure (after initial laser cure). The fabricated objects may be handled without gloves after the object has been thoroughly washed with solvent (e.g. tripropylene glycol monomethyl ether, isopropyl alcohol) followed by exposure to UV light and/or an oven bake at temperatures above 130ºC. When sanding fully cured surfaces, suitable respiratory protection for dust should be used. Good general ventilation is required when tooling or sanding to avoid inhalation of particulate matter or airborne particles. Avoid sanding or finishing parts that are not fully cured, as uncured material may cause skin sensitisation or respiratory irritation. |

## Section 9. Physical and chemical properties

**Appearance**

| | | |
|---|---|---|
| **Physical state** | : | Liquid. |
| **Color** | : | Milky white |
| **Odor** | : | Odorless. |
| **Odor threshold** | : | Not available. |
| **pH** | : | Not available. |
| **Melting point** | : | Not available. |
| **Boiling point** | : | Not available. |
| **Flash point** | : | Closed cup: >212°F (>100°C) [(estimate)] |
| **Evaporation rate** | : | Not available. |
| **Flammability (solid, gas)** | : | Not available. |
| **Lower and upper explosive (flammable) limits** | : | Not available. |
| **Vapor pressure** | : | Not available. |
| **Vapor density** | : | Not available. |
| **Relative density** | : | 1.17 (Water = 1) |
| **Density (g/cm³)** | : | 1.17 g/cm³ (23°C) |
| **Bulk density** | : | Not available. |
| **Solubility** | : | Not available. |
| **Solubility in water** | : | Not available. |
| **Solubility at room temperature** | : | Not available. |
| **Partition coefficient: n-octanol/water** | : | Not available. |
| **Auto-ignition temperature** | : | Not available. |
| **Decomposition temperature** | : | Not available. |

**Viscosity** : Dynamic (room temperature): 380 mPa·s (380 cP)
Kinematic (room temperature): >3.24 $cm^2/s$ (>324 cSt)
Kinematic (40°C (104°F)): >0.205 $cm^2/s$ (>20.5 cSt)

## Section 10. Stability and reactivity

**Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability** : The product is stable.

**Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid** : No specific data.

**Incompatible materials** : No specific data.

**Hazardous decomposition products** : No specific data.

## Section 11. Toxicological information

**Information on toxicological effects**

**Acute toxicity**

| Product/ingredient name | Result | Species | Dose | Exposure |
|---|---|---|---|---|
| Multifunctional Acrylate | LD50 Dermal | Rat - Male, Female | >2000 mg/kg ( LD0 2000 mg/kg ) | - |
| | LD50 Oral | Rat - Female | >2000 mg/kg ( LD0 2000 mg/kg ) | - |
| Monomer | LD50 Oral | Rat - Male, Female | >2000 mg/kg ( LD0 = 2000 mg/kg ) | - |
| Monomer | LD50 Dermal | Rabbit | >2000 mg/kg | - |
| | LD50 Dermal | Rat | >2000 mg/kg | - |
| | LD50 Oral | Rat - Female | 2000 mg/kg | - |
| Multifunctional Acrylate | LD50 Dermal | Rabbit | >2000 mg/kg | - |
| | LD50 Dermal | Rat | >2000 mg/kg | - |
| | LD50 Oral | Rat | >2000 mg/kg | - |
| Epoxy | LD50 Dermal | Rabbit | 20000 mg/kg | - |
| | LD50 Dermal | Rat - Male, Female | >2000 mg/kg | - |
| | LD50 Oral | Rat | 4490 mg/kg | - |
| Epoxy | LD50 Dermal | Rat - Male, Female | >2000 mg/kg ( LD0 2000 mg/kg ) | - |
| | LD50 Oral | Rat - Female | >2000 mg/kg ( LD0 2000 mg/kg ) | - |
| Multifunctional Acrylate | LD50 Oral | Rat | >2000 mg/kg | - |
| Additive | LD50 Dermal | Rabbit - Male, Female | >2000 mg/kg | - |
| | LD50 Oral | Rat - Male, Female | >5000 mg/kg | - |
| antimony compounds | LD50 Oral | Rat | >5000 mg/kg ( LD0 = 5000 mg/kg ) | - |
| antimony compounds | LD50 Oral | Rat | >5000 mg/kg ( LD0 = 5000 mg/kg ) | - |

**Irritation/Corrosion**

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|---|---|---|---|---|---|
| Multifunctional Acrylate | Skin - Non-irritating | Rabbit | 0 | 4 hours 0.5 ml | 24 to 72 hours |
| | Eyes - Non-irritating | Rabbit | 0 | 0.1 ml | 24 to 72 hours |
| Monomer | Skin - Erythema/Eschar | Rabbit | 1 | 4 hours 0.5 ml | 24 to 72 hours |
| | Skin - Edema | Rabbit | 0 | 4 hours 0.5 ml | 24 to 72 hours |
| | Eyes - Cornea opacity | Rabbit | 1 | 0.1 ml | 24 to 72 days |
| | Eyes - Iris lesion | Rabbit | 0 | 0.1 ml | 24 to 72 days |
| | Eyes - Redness of the conjunctivae | Rabbit | 3 | 0.1 ml | 24 to 72 hours |
| | Eyes - Edema of the conjunctivae | Rabbit | 3 | 0.1 ml | 24 to 72 hours |
| Monomer | Skin - Primary dermal irritation index (PDII) | Rabbit | 0.8 | 4 hours 0.5 ml | 72 hours |
| | Eyes - Non-irritating | Rabbit | 1 | 1 hours 0.1 ml | 72 hours |
| Multifunctional Acrylate | Skin - Erythema/Eschar | Rabbit | 0 | - | - |
| | Skin - Edema | Rabbit | 0 | - | - |
| | Eyes - Cornea opacity | Rabbit | 0 | - | - |
| | Eyes - Iris lesion | Rabbit | 0 | - | - |
| | Eyes - Edema of the conjunctivae | Rabbit | 0 | - | - |
| | Eyes - Redness of the conjunctivae | Rabbit | 0.7 | - | - |
| Epoxy | Skin - Primary dermal irritation index (PDII) | Rabbit | 1.35 | - | - |
| | Skin - Erythema/Eschar | Rabbit | 1 | - | 24 hours |
| | Skin - Erythema/Eschar | Rabbit | 0.8 | - | 48 hours |
| | Skin - Erythema/Eschar | Rabbit | 0.7 | - | 72 hours |
| | Skin - Edema | Rabbit | 0.5 | - | 24 hours |
| | Skin - Edema | Rabbit | 0 | - | 48 hours |
| | Skin - Edema | Rabbit | 0 | - | 72 hours |
| | Eyes - Cornea opacity | Rabbit | 0 | - | - |
| | Eyes - Iris lesion | Rabbit | 0 | - | - |
| | Eyes - Redness of the conjunctivae | Rabbit | 0 to 2 | - | - |
| Epoxy | Skin - Non-irritating | Rabbit | 0 | 4 hours 0.5 ml | 24 to 72 hours |
| | Eyes - Non-irritating | Rabbit | 0 | 0.1 ml | 24 to 72 hours |
| Multifunctional Acrylate | Skin - Moderate irritant | Mammal - species unspecified | - | - | - |
| | Eyes - Irritant | Mammal - species unspecified | - | - | - |
| | Respiratory - Irritant | Mammal - species unspecified | - | - | - |
| Additive | Eyes - Irritant | Rabbit | - | - | - |
| | Skin - Non-irritating | Rabbit | 0 | - | - |
| antimony compounds | Skin - Erythema/Eschar | Rabbit | 0.8 | 4 hours 0.5 g | 24 to 72 hours |
| | Skin - Edema | Rabbit | 0 | 4 hours 0.5 g | 24 to 72 hours |
| | Eyes - Cornea opacity | Rabbit | 0 | 0.1 ml | 24 to 72 hours |
| | Eyes - Iris lesion | Rabbit | 0 | 0.1 ml | 24 to 72 hours |
| | Eyes - Redness of the conjunctivae | Rabbit | 1.43 | 0.1 ml | 24 to 72 hours |
| | Eyes - Redness of the conjunctivae | Rabbit | 0.7 | 0.1 ml | 24 to 72 hours |
| antimony compounds | Skin - Erythema/Eschar | Rabbit | 0.8 | 4 hours 0.5 g | 4 hours |
| | Skin - Edema | Rabbit | 0 | 4 hours 0.5 g | 4 hours |
| | Eyes - Cornea opacity | Rabbit | 0 | 0.1 ml | 24 to 72 hours |
| | Eyes - Iris lesion | Rabbit | 0 | 0.1 ml | 24 to 72 hours |
| | Eyes - Redness of the conjunctivae | Rabbit | 1.43 | 0.1 ml | 24 to 72 hours |
| | Eyes - Edema of the conjunctivae | Rabbit | 0.7 | 0.1 ml | 24 to 72 hours |

| | | | | | |
|---|---|---|---|---|---|
| Epoxy | Skin - Non-irritating | Mammal - species unspecified | <0.1 | - | - |
| | Eyes - Irritant | Mammal - species unspecified | - | - | - |

**Sensitization**

| Product/ingredient name | Route of exposure | Species | Result |
|---|---|---|---|
| Multifunctional Acrylate | skin | Mouse | Sensitizing |
| Monomer | skin | Guinea pig | Not sensitizing |
| Monomer | skin | Mouse | Sensitizing |
| Multifunctional Acrylate | skin | Mouse | Sensitizing |
| Epoxy | skin | Guinea pig | Sensitizing |
| Epoxy | skin | Mouse | Sensitizing |
| Multifunctional Acrylate | skin | Mammal - species unspecified | Sensitizing |
| antimony compounds | skin | Guinea pig | Sensitizing |
| antimony compounds | skin | Guinea pig | Sensitizing |
| Epoxy | skin | Mammal - species unspecified | Sensitizing |

**Mutagenicity**

| Product/ingredient name | Test | Experiment | Result |
|---|---|---|---|
| Multifunctional Acrylate | Mammalian cell gene mutation assay | Experiment: In vitro<br>Subject: Mammalian-Animal<br>Cell: Somatic<br>Metabolic activation: Without | Positive |
| | Mammalian cell gene mutation assay | Experiment: In vitro<br>Subject: Mammalian-Animal<br>Cell: Somatic<br>Metabolic activation: With | Negative |
| | Mammalian cell gene mutation assay | Experiment: In vivo<br>Subject: Mammalian-Animal | Negative |
| Monomer | OECD 471 Bacterial Reverse Mutation Test | Experiment: In vitro<br>Subject: Bacteria<br>Metabolic activation: Without & with | Negative |
| | OECD 476 *In vitro* Mammalian Cell Gene Mutation Test | Experiment: In vitro<br>Subject: Mammalian-Animal<br>Cell: Somatic<br>Metabolic activation: Without & with | Negative |
| Monomer | - | Experiment: In vitro<br>Subject: Mammalian-Animal | Positive |
| | - | Experiment: In vitro<br>Subject: Bacteria | Negative |
| Multifunctional Acrylate | - | Experiment: In vitro<br>Subject: Bacteria | Negative |
| | - | Experiment: In vivo<br>Subject: Mammalian-Animal | Negative |
| Epoxy | - | Experiment: In vitro<br>Subject: Bacteria | Positive |
| | - | Experiment: In vitro<br>Subject: Mammalian-Animal | Positive |
| | - | Experiment: In vitro<br>Subject: Mammalian-Animal | Negative |
| | - | Experiment: In vivo<br>Subject: Mammalian-Animal | Negative |
| | - | Experiment: In vivo<br>Subject: Mammalian-Animal | Negative |
| | - | Experiment: In vitro<br>Subject: Mammalian-Animal | Equivocal |
| Epoxy | Mammalian cell gene mutation assay | Experiment: In vitro<br>Subject: Mammalian-Animal<br>Cell: Somatic | Positive |

| | | | |
|---|---|---|---|
| | Mammalian cell gene mutation assay | Metabolic activation: Without<br>Experiment: In vitro<br>Subject: Mammalian-Animal<br>Cell: Somatic | Negative |
| | Mammalian cell gene mutation assay | Metabolic activation: With<br>Experiment: In vivo<br>Subject: Mammalian-Animal | Negative |
| Additive | OECD 471 Bacterial Reverse Mutation Test | Experiment: In vitro<br>Subject: Bacteria<br>Metabolic activation: Without & with | Negative |
| | OECD 482 Genetic Toxicology: DNA Damage and Repair, Unscheduled DNA Synthesis in Mammalian Cells *in vitro* | Experiment: In vitro<br>Subject: Mammalian-Animal<br>Cell: Somatic<br>Metabolic activation: Without & with | Negative |
| | OECD 482 Genetic Toxicology: DNA Damage and Repair, Unscheduled DNA Synthesis in Mammalian Cells *in vitro* | Experiment: In vivo<br>Subject: Mammalian-Animal | Negative |
| antimony compounds | OECD 471 Bacterial Reverse Mutation Test | Experiment: In vitro<br>Subject: Bacteria<br>Metabolic activation: Without & with metabolic activation | Positive |
| | OECD 474 Mammalian Erythrocyte Micronucleus Test | Experiment: In vivo<br>Subject: Mammalian-Animal | Negative |
| antimony compounds | OECD 471 Bacterial Reverse Mutation Test | Experiment: In vitro<br>Subject: Bacteria<br>Metabolic activation: Without & with metabolic activation | Positive |
| | OECD 474 Mammalian Erythrocyte Micronucleus Test | Experiment: In vivo<br>Subject: Mammalian-Animal | Negative |

**Carcinogenicity**

| Product/ingredient name | Result | Species | Dose | Exposure |
|---|---|---|---|---|
| Multifunctional Acrylate | Negative - Oral - NOAEL | Rat - Female | 100 mg/kg /day | - |
| | Negative - Dermal - NOAEL | Mouse - Male | 100 mg/kg /day | - |
| | Negative - Oral - NOAEL | Rat - Male | 15 mg/kg /day | - |
| Epoxy | Negative - Oral - NOAEL | Rat - Female | 100 mg/kg /day | - |
| | Negative - Dermal - NOAEL | Mouse - Male | 100 mg/kg /day | - |
| | Negative - Oral - NOAEL | Rat - Male | 15 mg/kg /day | - |

**Reproductive toxicity**

| Product/ingredient name | Maternal toxicity | Fertility | Development toxin | Species | Dose | Exposure |
|---|---|---|---|---|---|---|
| Multifunctional Acrylate | - | Negative | - | Rat - Male, Female | Oral: 750 mg/kg / day ( NOEL ) | - |
| | - | - | Negative | Rabbit - Male, Female | Oral: 180 mg/kg / day ( NOAEL) | - |
| | - | - | Negative | Rat | Oral: 180 mg/kg / day ( NOAEL) | - |
| Multifunctional Acrylate | - | - | - | Rat | Oral: >900 mg/kg day | 7 days per week |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | Parental |
| | - | - | - | Rat | Oral: >1000 mg/kg day | - |
| | - | - | - | Rat | Oral: 1000 mg/kg day | - |
| Epoxy | - | - | - | Rat | Oral: 25 mg/kg mg/kg bw/day | - |
| | - | - | - | Rat | Oral: 125 mg/kg mg/kg bw/day | - |
| Epoxy | - | Negative | - | Rat - Male, Female | Oral: 750 mg/kg / day ( NOEL ) | - |
| | - | - | Negative | Rabbit - Male, Female | Oral: 180 mg/kg / day ( NOAEL) | - |
| | - | - | Negative | Rat | Oral: 180 mg/kg / day ( NOAEL) | - |
| Additive | - | Negative | - | Mouse - Male, Female | Oral: 10100 mg/kg /day | - |
| | - | Negative | - | Mouse - Male, Female | Oral: 10100 mg/kg /day | - |

**Teratogenicity**

Not available.

**Specific target organ toxicity (single exposure)**

Not available.

**Specific target organ toxicity (repeated exposure)**

Not available.

**Aspiration hazard**

Not available.

**Information on the likely routes of exposure** : Not available.

**Potential acute health effects**

**Eye contact** : Causes serious eye irritation.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : Causes skin irritation. May cause an allergic skin reaction.

**Ingestion** : No known significant effects or critical hazards.

**Symptoms related to the physical, chemical and toxicological characteristics**

**Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness

**Inhalation** : No specific data.

**Skin contact** : Adverse symptoms may include the following:
irritation
redness

**Ingestion** : No specific data.

**Delayed and immediate effects and also chronic effects from short and long term exposure**

**Short term exposure**

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

**Long term exposure**

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

**Potential chronic health effects**

| Product/ingredient name | Result | Species | Dose | Exposure |
|---|---|---|---|---|
| Multifunctional Acrylate | Sub-chronic NOAEL Oral | Rat - Male, Female | 50 mg/kg /day | - |
| | Sub-chronic NOEL Dermal | Rat - Female | 10 mg/kg /day | - |
| | Sub-chronic NOEL Dermal | Mouse - Male | 100 mg/kg /day | - |
| Monomer | Sub-acute NOEL Oral | Rat - Male, Female | 1000 mg/kg day | - |
| Multifunctional Acrylate | Sub-chronic NOAEL Oral | Rat - Male, Female | <100 mg/kg day | - |
| | Sub-chronic LOAEL Oral | Rat - Male | ≤100 mg/kg day | - |
| Epoxy | Sub-chronic NOEL Oral | Rat - Male, Female | 5 mg/kg mg/kg bw/day | - |
| Epoxy | Sub-chronic NOAEL Oral | Rat - Male, Female | 50 mg/kg /day | - |
| | Sub-chronic NOEL Dermal | Rat - Female | 10 mg/kg /day | - |
| | Sub-chronic NOEL Dermal | Mouse - Male | 100 mg/kg /day | - |
| Additive | Sub-chronic NOAEL Oral | Rat - Male, Female | >5000 mg/kg /day | 90 days; 5 days per week |
| | Sub-chronic NOAEC Inhalation Dusts and mists | Rat - Male, Female | 1000 mg/m³ | 93 days; 6 hours per day 5 days per week |

**General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates**

| Route | ATE value |
|---|---|
| Oral | 8788.3 mg/kg |

# Section 12. Ecological information

**Toxicity**

| Product/ingredient name | Result | Species | Exposure |
|---|---|---|---|
| Multifunctional Acrylate | NOEC 0.3 mg/l Fresh water | Daphnia | 21 days |
| | Acute EC50 >11 mg/l Fresh water | Algae | 72 hours |
| | Acute EC50 1.7 mg/l Fresh water | Daphnia | 48 hours |
| | Acute LC50 1.2 mg/l Fresh water | Fish | 96 hours |
| Monomer | Acute EC50 6420 mg/l Fresh water | Algae | 72 hours |
| | Acute EC50 6910 mg/l Fresh water | Daphnia | 48 hours |
| | Acute LC50 7500 mg/l Fresh water | Fish | 96 hours |
| Monomer | EC50 >100 mg/l | Algae | 72 hours |
| | Acute EC50 18.3 mg/l | Daphnia | 48 hours |
| | Acute LC50 11.5 mg/l | Fish | 96 hours |
| | Acute NOEC 10 mg/l | Daphnia | 48 hours |
| Multifunctional Acrylate | Acute EC50 >16 mg/l | Daphnia | 48 hours |
| | Acute NOEC ≥16 mg/l | Daphnia | 48 hours |
| Epoxy | EC50 90 mg/l | Algae | 72 hours |
| | EC50 40 mg/l | Daphnia | 48 hours |
| | LC50 24 mg/l | Fish | 96 hours |
| | NOEC 22 mg/l | Algae | 72 hours |
| | NOEC 10 mg/l | Daphnia | 48 hours |
| | NOEC 3.2 mg/l | Fish | 96 hours |
| Epoxy | NOEC 0.3 mg/l Fresh water | Daphnia | 21 days |
| | Acute EC50 >11 mg/l Fresh water | Algae | 72 hours |
| | Acute EC50 1.7 mg/l Fresh water | Daphnia | 48 hours |
| | Acute LC50 1.2 mg/l Fresh water | Fish | 96 hours |
| Additive | Acute EC50 >900 mg/l Fresh water | Algae | 72 hours |
| | Acute EC50 >1000 mg/l Fresh water | Daphnia | 48 hours |
| | Acute LC50 >1000 mg/l Fresh water | Fish | 96 hours |
| antimony compounds | Acute EC50 0.044 mg/l Fresh water | Algae | 72 hours |
| | Acute EC50 0.68 mg/l Fresh water | Daphnia | 48 hours |
| | Acute LC50 12.6 mg/l Fresh water | Fish | 96 hours |
| antimony compounds | Acute EC50 0.68 mg/l Fresh water | Daphnia | 48 hours |
| | Acute LC50 0.044 mg/l Fresh water | Algae | 72 hours |
| | Acute LC50 12.6 mg/l Fresh water | Fish | 96 hours |

**Persistence and degradability**

| Product/ingredient name | Test | Result | Dose | Inoculum |
|---|---|---|---|---|
| Multifunctional Acrylate | OECD 301F Ready Biodegradability - Manometric Respirometry Test | 28 % - 5 days | - | - |
| Monomer | OECD 302B Inherent Biodegradability: Zahn-Wellens/ EMPA Test | <1 % - 28 days | - | - |
| | OECD 301B Ready Biodegradability - $CO_2$ Evolution Test | <1 % - 28 days | - | - |
| Monomer | - | 0.1 % - Not readily - 28 days | - | - |
| Multifunctional Acrylate | - | 42 % - Inherent - 28 days | - | - |
| Epoxy | - | 71 % - Readily - 28 days | - | - |
| Epoxy | OECD 301F Ready Biodegradability - | 28 % - 5 days | - | - |

| | | | | |
|---|---|---|---|---|
| Additive | Manometric Respirometry Test<br>OECD 301B Ready Biodegradability - $CO_2$ Evolution Test | 69.3 % - Readily - 9 days | - | Activated sludge |
| antimony compounds | OECD 301B Ready Biodegradability - $CO_2$ Evolution Test | 56 % - 28 days | - | - |
| antimony compounds | OECD 301B Ready Biodegradability - $CO_2$ Evolution Test | 56 % - 28 days | - | - |

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|---|---|---|---|
| Multifunctional Acrylate | - | - | Not readily |
| Monomer | - | - | Not readily |
| Monomer | - | - | Not readily |
| Multifunctional Acrylate | - | - | Inherent |
| Epoxy | - | - | Readily |
| Epoxy | - | - | Not readily |
| Additive | - | - | Readily |
| antimony compounds | - | - | Inherent |
| antimony compounds | - | - | Inherent |

**Bioaccumulative potential**

| Product/ingredient name | $LogP_{ow}$ | BCF | Potential |
|---|---|---|---|
| Multifunctional Acrylate | 2.64 to 3.78 | 31 | low |
| Monomer | 0.6 | - | low |
| Multifunctional Acrylate | 1.6 to 3 | - | low |
| Epoxy | 1.34 | - | low |
| Epoxy | 2.64 to 3.78 | 31 | low |
| Additive | -0.48 | - | low |
| antimony compounds | ≥2.61 | - | low |
| antimony compounds | ≥2.61 | - | low |

**Mobility in soil**

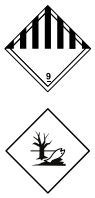
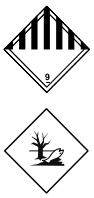
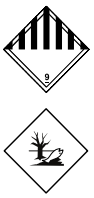
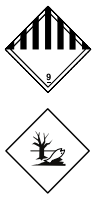
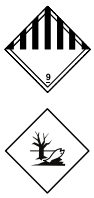
**Soil/water partition coefficient ($K_{OC}$)** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

| | DOT Classification | TDG Classification | Mexico Classification | ADR/RID | IMDG | IATA |
|---|---|---|---|---|---|---|
| **UN number** | Not regulated. | UN3082 | UN3082 | UN3082 | UN3082 | UN3082 |
| **UN proper shipping name** | - | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) , | SUBSTANCIA LIQUIDA POTENCIALMENTE PELIGROSA PARA EL MEDIO AMBIENTE, N. E.P. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) , | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) , | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) , | Environmentally hazardous substance, liquid, n.o.s. (reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) , |
| **Transport hazard class(es)** | - | 9  | 9  | 9  | 9  | 9  |
| **Packing group** | - | III | III | III | III | III |
| **Environmental hazards** | No. | Yes. | Yes. | Yes. | Yes. | Yes. |

**Additional information**

**TDG Classification** : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark).
Non-bulk packages of this product are not regulated as dangerous goods when transported by road or rail.
**Explosive Limit and Limited Quantity Index** 5
**Special provisions** 16, 99

**Mexico Classification** : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
**Special provisions** 274, 331, 335

**ADR/RID** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
**Hazard identification number** 90
**Limited quantity** 5 L
**Special provisions** 274, 335, 601, 375

**IMDG** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
**Emergency schedules** F-A, S-F
**Special provisions** 274, 335, 969

**IATA** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.
**Quantity limitation** Passenger and Cargo Aircraft: 450 L. Packaging instructions: 964. Cargo Aircraft Only: 450 L. Packaging instructions: 964. Limited Quantities - Passenger Aircraft: 30 kg. Packaging instructions: Y964.
**Special provisions** A97, A158, A197

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL and the IBC Code** : Not available.

## Section 15. Regulatory information

**U.S. Federal regulations** : **United States inventory (TSCA 8b)**: All components are listed or exempted.

**Clean Water Act (CWA) 307**: 2-Propenenitrile; antimony compounds; antimony compounds; toluene

**Clean Water Act (CWA) 311**: 2-Propenenitrile; Epichlorohydrin; toluene

| | Product/ingredient name | CAS # | % |
|---|---|---|---|
| **Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)** | Acrylonitrile<br>Epichlorohydrin<br>antimony compounds<br>antimony compounds<br>Toluene | 107-13-1<br>106-89-8<br>-<br>-<br>108-88-3 | 0 - 0.007704<br>0 - 0.007704<br>0.9675<br>0.9675<br>0.001075 |

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

**Form R - Reporting requirements**

**Supplier notification**

**State regulations**

**Massachusetts** : None of the components are listed.

**New York** : None of the components are listed.

**New Jersey** : None of the components are listed.

**Pennsylvania** : None of the components are listed.

**California Prop. 65**

⚠ **WARNING**: This product can expose you to chemicals including Monomer, Epichlorohydrin, which are known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Acrylonitrile, which is known to the State of California to cause cancer, and Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

| Ingredient name | No significant risk level | Maximum acceptable dosage level |
|---|---|---|
| Toluene | - | Yes. |
| Monomer | Yes. | - |
| Epichlorohydrin | Yes. | - |
| Acrylonitrile | Yes. | - |

**International regulations**

**Chemical Weapon Convention List Schedules I, II & III Chemicals**

| Ingredient name | List name | Status |
|---|---|---|
| Not listed. | | |

**Montreal Protocol (Annexes A, B, C, E)**

Not listed.

**Stockholm Convention on Persistent Organic Pollutants**

| Ingredient name | List name | Status |
|---|---|---|
| Not listed. | | |

**Rotterdam Convention on Prior Informed Consent (PIC)**

Not listed.

**UNECE Aarhus Protocol on POPs and Heavy Metals**

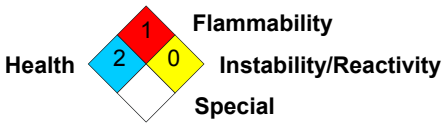
| Ingredient name | List name | Status |
|---|---|---|
| Not listed. | | |

**International lists**

**Canada inventory** : Not determined.

## Section 16. Other information

**National Fire Protection Association (U.S.A.)**

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**Key to abbreviations** : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

**Procedure used to derive the classification**

| Classification | Justification |
|---|---|
| SKIN IRRITATION - Category 2 | Calculation method |
| EYE IRRITATION - Category 2A | Calculation method |
| SKIN SENSITIZATION - Category 1 | Calculation method |

**References** : Not available.

**Indicates information that has changed from previously issued version.**

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