

# SAFETY DATA SHEET

United States



DeSolite® 3471-2-136

## Section 1. Identification

**GHS product identifier** : DeSolite® 3471-2-136  
**Other means of identification** : Not available.  
**Product type** : Liquid.  
**Material uses** : UV-curable coatings, inks and matrix materials.  
**Supplier** : Covestro Desotech Inc.  
1122 St Charles Street  
Elgin IL 60120  
Tel: +1 (847) 697-0400  
**e-mail address of person responsible for this SDS** : resins.SDS@covestro.com  
**Emergency telephone number** : +1-800-424-9300

## 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 SENSITIZATION - Category 1  
TOXIC TO REPRODUCTION - Category 1B

### GHS label elements

**Hazard pictograms** :



**Signal word** : Danger

**Hazard statements** : H317 - May cause an allergic skin reaction.  
H360 - May damage fertility or the unborn child.

### Precautionary statements

**Prevention** : P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.  
P280 - Wear protective gloves, protective clothing and eye or face protection.  
P261 - Avoid breathing vapor.  
P272 - Contaminated work clothing must not be allowed out of the workplace.

**Response** : P308 + P313 - IF exposed or concerned: Get medical advice or attention.  
P363 - Wash contaminated clothing before reuse.  
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.  
P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.

**Storage** : P405 - Store locked up.

**Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

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



## Section 3. Composition/information on ingredients

Substance/mixture : Mixture  
Other means of identification : Not available.

CAS number : Not applicable.

| Ingredient name   | %       | CAS number |
|---|---------|------------|
| Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate | 25 - 50 | 55818-57-0 |
| 2-Propenoic acid, (1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, rel-           | 10 - 25 | 5888-33-5  |
| 2-Propenoic acid, 2-phenoxyethyl ester  | 5 - 10  | 48145-04-6 |
| 2-Propenoic acid, 1,1'-(1,6-hexanediyl) ester   | 5 - 10  | 13048-33-4 |
| Methanone, (diphenylphosphinyl)(2,4,6-trimethylphenyl)-                                   | 1 - 5   | 75980-60-8 |
| Phenol, 4-methoxy-  | 0.1-1   | 150-76-5   |
| 2-Propenoic acid, 2-hydroxyethyl ester  | 0.1-1   | 818-61-1   |

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 if irritation occurs.
- 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 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. 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** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms



|                     |  |
|---------------------|--|
| <b>Eye contact</b>  | : No specific data.  |
| <b>Inhalation</b>   | : Adverse symptoms may include the following:<br>reduced fetal weight<br>increase in fetal deaths<br>skeletal malformations                          |
| <b>Skin contact</b> | : Adverse symptoms may include the following:<br>irritation<br>redness<br>reduced fetal weight<br>increase in fetal deaths<br>skeletal malformations |
| <b>Ingestion</b>    | : Adverse symptoms may include the following:<br>reduced fetal weight<br>increase in fetal deaths<br>skeletal malformations                          |

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

|                                   |   |
|-----------------------------------|---|
| <b>Notes to physician</b>         | : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.   |
| <b>Specific treatments</b>        | : No specific treatment.  |
| <b>Protection of first-aiders</b> | : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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**

|                                       |   |
|---------------------------------------|---|
| <b>Suitable extinguishing media</b>   | : Use an extinguishing agent suitable for the surrounding fire. |
| <b>Unsuitable extinguishing media</b> | : None known.   |

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

|   |   |
|---|---|
| <b>Hazardous thermal decomposition products</b> | : Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide<br>phosphorus oxides<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). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. 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). Store in original container, protected from direct sunlight. Store locked up. 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. See Section 10 for incompatible materials before handling or use. Keep away from heat and direct sunlight. Inhibitor only effective in the presence of oxygen.



## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

| Ingredient name   | Exposure limits  |
|---|--|
| Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate | None.  |
| 2-Propenoic acid, (1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, rel-           | None.  |
| 2-Propenoic acid, 2-phenoxyethyl ester  | None.  |
| 2-Propenoic acid, 1,1'-(1,6-hexanediy)l ester   | <b>AIHA WEEL (United States, 7/2018). Skin sensitizer.</b><br>TWA: 1 mg/m <sup>3</sup> 8 hours.  |
| Methanone, (diphenylphosphinyl)(2,4,6-trimethylphenyl)-                                   | None.  |
| Phenol, 4-methoxy-  | <b>ACGIH TLV (United States, 3/2020).</b><br>TWA: 5 mg/m <sup>3</sup> 8 hours.<br><b>OSHA PEL 1989 (United States, 3/1989).</b><br>TWA: 5 mg/m <sup>3</sup> 8 hours.<br><b>NIOSH REL (United States, 10/2016).</b><br>TWA: 5 mg/m <sup>3</sup> 10 hours. |
| 2-Propenoic acid, 2-hydroxyethyl ester  | None.  |

#### Appropriate engineering controls

: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

#### 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: safety glasses with side-shields.

#### 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** : Do not use PVC gloves. PVC absorbs acrylics. Do not use natural rubber gloves. Replace damaged gloves.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid. [Clear.]
- Color** : Colorless to light yellow.
- Odor** : typical
- 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 (Water = 1)
- Density (g/cm<sup>3</sup>)** : 1 g/cm<sup>3</sup> (23°C)
- Bulk density** : Not available.
- Solubility** : Insoluble in the following materials: cold water and hot water.
- 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): 4500 to 5500 mPa·s (4500 to 5500 cP)  
Kinematic (room temperature): >45 cm<sup>2</sup>/s (>4500 cSt)  
Kinematic (40°C (104°F)): >0.205 cm<sup>2</sup>/s (>20.5 cSt)
- Remarks** : Soluble in the following materials: organic solvents

## 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.  
Stable under storage conditions (see section 7).
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Keep away from heat and direct sunlight. Keep away from flames or sparks. May polymerize on exposure to light. During heating, spontaneous polymerisation can occur.



- Incompatible materials** : Free radical initiators, peroxides, strongly alkaline and strongly acidic materials or reactive metals. Contact with these could result in uncontrolled exothermic polymerization.
- Hazardous decomposition products** : No specific data.
- Remarks** : Keep away from heat and direct sunlight. Keep away from flames or sparks. Keep away from: Free radical initiators, peroxides, strongly alkaline and strongly acidic materials or reactive metals. Contact with these could result in uncontrolled exothermic polymerization.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

| Product/ingredient name   | Result               | Species            | Dose                             | Exposure |
|---|----------------------|--------------------|----------------------------------|----------|
| Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate | LD50 Dermal          | Rat - Male, Female | >2000 mg/kg                      | -        |
|   | LD50 Oral            | Rat                | >2000 mg/kg                      | -        |
| 2-Propenoic acid, (1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, rel-           | LD50 Dermal          | Rabbit             | >3000 mg/kg LD0 = 3000 mg/kg     | -        |
|   | LD50 Oral            | Rat - Male         | 4350 mg/kg                       | -        |
| 2-Propenoic acid, 2-phenoxyethyl ester  | LD50 Oral            | Rat - Female       | 5000 mg/kg                       | -        |
|   | LC0 Inhalation Vapor | Rat - Male, Female | 0.41 mg/l Air                    | 7 hours  |
| 2-Propenoic acid, 1,1'-(1,6-hexanediy)l ester   | LD50 Dermal          | Rabbit             | 3650 mg/kg                       | -        |
|   | LD50 Oral            | Rat - Male, Female | >5000 mg/kg                      | -        |
| Methanone, (diphenylphosphinyl) (2,4,6-trimethylphenyl)-                                  | LD50 Dermal          | Rat - Male, Female | >2000 mg/kg ( LD0 = 2000 mg/kg ) | -        |
|   | LD50 Oral            | Rat - Male, Female | >5000 mg/kg ( LD0 = 5000 mg/kg ) | -        |
| Phenol, 4-methoxy-  | LD50 Dermal          | Rat                | >2000 mg/kg                      | -        |
|   | LD50 Oral            | Rat                | 1600 mg/kg                       | -        |
| 2-Propenoic acid, 2-hydroxyethyl ester  | LD50 Dermal          | Rat - Male, Female | >1000 mg/kg                      | -        |
|   | LD50 Oral            | Rat - Male         | 540 mg/kg                        | -        |

#### Irritation/Corrosion

| Product/ingredient name   | Result                             | Species | Score | Exposure       | Observation    |
|---|------------------------------------|---------|-------|----------------|----------------|
| Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate | Skin - Erythema/Eschar             | Rabbit  | 0     | -              | -              |
|   | Eyes - Cornea opacity              | Rabbit  | 0     | -              | -              |
| 2-Propenoic acid, (1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, rel-           | Skin - Erythema/Eschar             | Rabbit  | 0     | 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  | 0.61  | 0.1 ml         | 24 to 72 hours |
|   | Eyes - Iris lesion                 | Rabbit  | 0     | 0.1 ml         | 24 to 72 hours |
|   | Eyes - Edema of the conjunctivae   | Rabbit  | 0.22  | 0.1 ml         | 24 to 72 hours |
| 2-Propenoic acid, 2-phenoxyethyl ester  | Eyes - Redness of the conjunctivae | Rabbit  | 1     | hours          | 24 hours       |



|  |  |  |              |                                     |                |
|--|--|--|--------------|-------------------------------------|----------------|
| 2-Propenoic acid, 1,1'-(1,6-hexanediyl) ester                    | Skin - Primary dermal irritation index (PDII)<br>Skin - Irritant | Rabbit                                 | 0.25         | 24 hours                            | -              |
|  |  | Rabbit                                 | -            | 4 hours 0.5 ml                      | 24 to 72 hours |
|  | Eyes - Mild irritant<br>Respiratory - Irritant                   | Rabbit<br>Mammal - species unspecified | -<br>-       | -<br>-                              | -<br>-         |
| Methanone, (diphenylphosphinyl) (2,4,6-trimethylphenyl)-         | Eyes - Non-irritating  | Rabbit                                 | 0            | -                                   | -              |
|  | Skin - Non-irritating<br>Skin - Mild irritant                    | Rabbit<br>Rabbit                       | 0<br>-       | -<br>288 hours 6 Grams Intermittent | -<br>-         |
| Phenol, 4-methoxy-<br><br>2-Propenoic acid, 2-hydroxyethyl ester | Skin - Erythema/Eschar<br>Skin - Edema                           | Rabbit<br>Rabbit                       | 1.78<br>1.44 | -<br>-                              | -<br>-         |
|  | Skin - Visible necrosis  | Rabbit                                 | -            | ≤1 hours                            | 14 days        |
|  | Eyes - Irritant  | Rabbit                                 | -            | -                                   | -              |
|  |  |  |              |                                     |                |

**Sensitization**

| Product/ingredient name   | Route of exposure | Species    | Result      |
|---|-------------------|------------|-------------|
| Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl) oxirane, 2-propenoate 2-Propenoic acid, (1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, rel- 2-Propenoic acid, 2-phenoxyethyl ester 2-Propenoic acid, 1,1'-(1,6-hexanediyl) ester Methanone, (diphenylphosphinyl) (2,4,6-trimethylphenyl)- 2-Propenoic acid, 2-hydroxyethyl ester | skin              | Mouse      | Sensitizing |
|   | skin              | Mouse      | Sensitizing |
|   | skin              | Guinea pig | Sensitizing |
|   | skin              | Guinea pig | Sensitizing |
|   | skin              | Mouse      | Sensitizing |
|   | skin              | Mouse      | Sensitizing |

**Mutagenicity**

| Product/ingredient name   | Test   | Experiment  | Result   |
|---|--|---|----------|
| 2-Propenoic acid, (1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, rel- | OECD 471 Bacterial Reverse Mutation Test                       | Experiment: In vitro<br>Subject: Bacteria   | Negative |
|   | OECD 476 <i>In vitro</i> Mammalian Cell Gene Mutation Test     | Experiment: In vitro<br>Subject: Mammalian-Animal<br>Cell: Somatic                | Negative |
|   | OECD 473 <i>In vitro</i> Mammalian Chromosomal Aberration Test | Experiment: In vitro<br>Subject: Mammalian-Human<br>Cell: Somatic                 | Negative |
| 2-Propenoic acid, 2-phenoxyethyl ester  | -  | Experiment: In vitro<br>Subject: Bacteria   | Negative |
|   | -  | Experiment: In vitro<br>Subject: Mammalian-Animal                                 | Negative |
|   | -  | Experiment: In vitro<br>Subject: Mammalian-Human                                  | Negative |
| 2-Propenoic acid, 1,1'-(1,6-hexanediyl) ester                                   | OECD 471 Bacterial Reverse Mutation Test                       | Experiment: In vitro<br>Subject: Bacteria<br>Metabolic activation: Without & With | Negative |





|  |  |  |          |
|--|--|--|----------|
|  | OECD 476 <i>In vitro</i> Mammalian Cell Gene Mutation Test | Experiment: In vitro<br>Subject: Mammalian-Animal<br>Cell: Somatic<br>Metabolic activation: Without & with | Negative |
|  | OECD 476 <i>In vitro</i> Mammalian Cell Gene Mutation Test | Experiment: In vivo<br>Subject: Mammalian-Animal   | Negative |
|  | chromosome aberration and DNA damage and/or repair         | Experiment: In vivo<br>Subject: Mammalian-Animal   | Negative |

**Carcinogenicity**

Not available.

**Reproductive toxicity**

| Product/ingredient name   | Maternal toxicity | Fertility | Development toxin | Species            | Dose                                      | Exposure |
|---|-------------------|-----------|-------------------|--------------------|---|----------|
| 2-Propenoic acid, (1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, rel- | -                 | Negative  | Negative          | Rat - Male, Female | Oral: 100 mg/kg / day (NOAEL)             | -        |
| 2-Propenoic acid, 2-phenoxyethyl ester  | -                 | -         | -                 | Rat - Male, Female | Oral: 300 mg/kg Once daily, Parental Oral | -        |
| 2-Propenoic acid, 1,1'-(1,6-hexanediy) ester                                    | -                 | -         | Negative          | Rat                | Oral                                      | -        |

**Teratogenicity**

| Product/ingredient name                      | Result          | Species | Dose  | Exposure |
|--|-----------------|---------|---|----------|
| 2-Propenoic acid, 1,1'-(1,6-hexanediy) ester | Negative - Oral | Rat     | 750 mg/kg / day (NOAEL - Single dose Test ) | -        |

**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 : No known significant effects or critical hazards.
- Inhalation : No known significant effects or critical hazards.
- Skin contact : 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 : No specific data.
- Inhalation : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations



- Skin contact** : Adverse symptoms may include the following:  
 irritation  
 redness  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations

**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 |
|--|------------------------|-----------------------|--|----------|
| Phenol, 4,4'-<br>(1-methylethylidene)bis-,<br>polymer with 2-(chloromethyl)<br>oxirane, 2-propenoate<br><br>2-Propenoic acid, (1R,2R,4R)<br>-1,7,7-trimethylbicyclo[2.2.1]<br>hept-2-yl ester, rel-<br>2-Propenoic acid,<br>2-phenoxyethyl ester<br>2-Propenoic acid, 1,1'-<br>(1,6-hexanediyl) ester<br>Methanone,<br>(diphenylphosphinyl)<br>(2,4,6-trimethylphenyl)-<br>2-Propenoic acid,<br>2-hydroxyethyl ester | Sub-chronic NOAEL Oral | Rat - Male,<br>Female | <100 mg/kg day                                   | -        |
|  | Sub-chronic LOAEL Oral | Rat - Male            | ≤100 mg/kg day                                   | -        |
|  | Chronic NOAEL Oral     | Rat - Male,<br>Female | 100 mg/kg day                                    | -        |
|  | Sub-chronic NOAEL Oral | Rat - Male,<br>Female | 300 mg/kg Once<br>daily                          | -        |
|  | Sub-acute NOAEL Oral   | Rat - Male,<br>Female | 250 mg/kg /day                                   | -        |
|  | Sub-acute NOAEL Oral   | Rat - Male,<br>Female | 50 mg/kg day                                     | -        |
|  | Sub-chronic NOAEL Oral | Rat - Male,<br>Female | 196 to 305 mg/kg /<br>day                        | 100 days |
| Chronic NOAEC Inhalation<br>Vapor  | Rat - Male,<br>Female  | 0.0024 mg/l           | 18 months; 6<br>hours per day 5<br>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.
- Reproductive toxicity** : May damage fertility or the unborn child.

**Numerical measures of toxicity**

**Acute toxicity estimates**



| Product/ingredient name   | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapors) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|---|--------------|----------------|--------------------------|----------------------------|-------------------------------------|
| DeSolite® 3471-2-136  | 6039.4       | 7275           | N/A                      | N/A                        | N/A                                 |
| Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate | 2500         | 2500           | N/A                      | N/A                        | N/A                                 |
| 2-Propenoic acid, (1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, rel-           | 4350         | N/A            | N/A                      | N/A                        | N/A                                 |
| 2-Propenoic acid, 2-phenoxyethyl ester  | 5000         | N/A            | N/A                      | N/A                        | N/A                                 |
| 2-Propenoic acid, 1,1'-(1,6-hexanediyl) ester   | N/A          | 3650           | N/A                      | N/A                        | N/A                                 |
| Phenol, 4-methoxy-  | 1600         | 2500           | N/A                      | N/A                        | N/A                                 |
| 2-Propenoic acid, 2-hydroxyethyl ester  | 540          | 1100           | N/A                      | N/A                        | N/A                                 |

## Section 12. Ecological information

### Toxicity

| Product/ingredient name   | Result                                 | Species                          | Exposure       |          |
|---|--|----------------------------------|----------------|----------|
| Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate | Chronic NOEC ≥0.51 mg/l Fresh water    | Daphnia                          | 21 days        |          |
|   | Acute EC50 1.98 mg/l Fresh water       | Algae                            | 72 hours       |          |
|   | Acute LC50 0.704 mg/l Fresh water      | Fish                             | 96 hours       |          |
|   | Acute NOEC 0.405 mg/l Fresh water      | Algae                            | 72 hours       |          |
|   | Chronic NOEC 0.092 mg/l Fresh water    | Daphnia                          | 21 days        |          |
|   | Acute EC50 4.44 mg/l                   | Algae                            | 72 hours       |          |
|   | 2-Propenoic acid, 2-phenoxyethyl ester | Acute EC50 1.33 mg/l             | Algae          | 96 hours |
|   |  | Acute EC50 1.21 mg/l             | Daphnia        | 48 hours |
|   |  | Acute EC50 177 mg/l              | Micro-organism | 3 hours  |
|   |  | Acute LC50 10 mg/l               | Fish           | 96 hours |
| 2-Propenoic acid, 1,1'-(1,6-hexanediyl) ester   | Chronic EC <sub>10</sub> 0.1 mg/l      | Daphnia                          | 21 days        |          |
|   | Acute EC50 2.7 mg/l Fresh water        | Daphnia                          | 48 hours       |          |
|   | Acute LC50 2.33 mg/l Fresh water       | Algae                            | 72 hours       |          |
|   | Acute LC50 0.38 mg/l Fresh water       | Fish                             | 96 hours       |          |
| Methanone, (diphenylphosphinyl) (2,4,6-trimethylphenyl)-                                  | Chronic NOEC 0.14 mg/l Fresh water     | Daphnia                          | 21 days        |          |
|   | Chronic NOEC 0.072 mg/l Fresh water    | Fish                             | 39 days        |          |
|   | Acute EC50 1.56 mg/l Fresh water       | Algae                            | 72 hours       |          |
|   | Phenol, 4-methoxy-                     | Acute EC50 3.53 mg/l Fresh water | Daphnia        | 48 hours |
| Acute LC50 1.4 mg/l   |  | Fish                             | 96 hours       |          |
| 2-Propenoic acid, 2-hydroxyethyl ester  | Acute EC50 54.7 mg/l Fresh water       | Algae                            | 72 hours       |          |
|   | Acute EC50 3 mg/l Fresh water          | Daphnia                          | 48 hours       |          |
|   | Acute LC50 28.5 mg/l Fresh water       | Fish                             | 96 hours       |          |
|   | Chronic NOEC 2.96 mg/l Fresh water     | Algae                            | 72 hours       |          |
|   | Chronic NOEC 0.68 mg/l                 | Daphnia                          | 21 days        |          |
|   | Acute EC50 6 mg/l Fresh water          | Algae                            | 72 hours       |          |
|   | Acute EC50 5.2 mg/l Fresh water        | Daphnia                          | 48 hours       |          |
|   | Acute LC50 6.5 mg/l Fresh water        | Fish                             | 96 hours       |          |
| Chronic NOEC 0.48 mg/l Fresh water  | Daphnia                                | 21 days                          |                |          |



**Persistence and degradability**

| Product/ingredient name   | Test  | Result                      | Dose    | Inoculum |
|---|---|-----------------------------|---------|----------|
| Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate | -   | 42 % - Inherent - 28 days   | -       | -        |
|   | OECD 301F Ready   | 51 % - 28 days              | -       | -        |
| 2-Propenoic acid, (1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, rel-           | Biodegradability - Manometric Respirometry Test                       |                             |         |          |
| 2-Propenoic acid, 2-phenoxyethyl ester  | OECD 301D Ready   | 22.3 % - Inherent - 28 days | -       | -        |
|   | Biodegradability - Closed Bottle Test                                 |                             |         |          |
| 2-Propenoic acid, 1,1'-(1,6-hexanediyl) ester   | OECD 310 Ready  | 60 to 70 % - 28 days        | -       | -        |
|   | Biodegradability - CO <sub>2</sub> in Sealed Vessels (Headspace Test) |                             |         |          |
| Phenol, 4-methoxy-  | OECD 311  | >90 % - 56 days             | -       | -        |
|   | OECD 301 C  | 86 % - Readily - 28 days    | -       | -        |
| 2-Propenoic acid, 2-hydroxyethyl ester  | OECD 301B Ready   | 80 % - Readily - 28 days    | 20 mg/l | -        |
|   | Biodegradability - CO <sub>2</sub> Evolution Test                     |                             |         |          |

| Product/ingredient name   | Aquatic half-life | Photolysis | Biodegradability |
|---|-------------------|------------|------------------|
| Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate | -                 | -          | Inherent         |
| 2-Propenoic acid, (1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, rel-           | -                 | -          | Inherent         |
| 2-Propenoic acid, 2-phenoxyethyl ester  | -                 | -          | Inherent         |
| 2-Propenoic acid, 1,1'-(1,6-hexanediyl) ester   | -                 | -          | Readily          |
| Methanone, (diphenylphosphinyl) (2,4,6-trimethylphenyl)-                                  | -                 | -          | Not readily      |
| Phenol, 4-methoxy-  | -                 | -          | Readily          |
| 2-Propenoic acid, 2-hydroxyethyl ester  | -                 | -          | Readily          |

**Bioaccumulative potential**

| Product/ingredient name   | LogP <sub>ow</sub> | BCF   | Potential |
|---|--------------------|-------|-----------|
| Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, 2-propenoate | 1.6 to 3.8         | -     | low       |
| 2-Propenoic acid, (1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl ester, rel-           | 4.52               | -     | high      |
| 2-Propenoic acid, 2-phenoxyethyl ester  | 2.58               | -     | low       |
| 2-Propenoic acid, 1,1'-(1,6-hexanediyl) ester   | 2.81               | 29.09 | low       |



|   |               |          |            |
|---|---------------|----------|------------|
| Methanone,<br>(diphenylphosphinyl)<br>(2,4,6-trimethylphenyl)-  | 3.1           | 53 to 72 | low        |
| Phenol, 4-methoxy-<br>2-Propenoic acid,<br>2-hydroxyethyl ester | 1.58<br>-0.17 | -<br>-   | low<br>low |

**Mobility in soil**

**Soil/water partition coefficient (K<sub>oc</sub>)** : 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 | IMDG  | IATA   |
|-----------------------------------|--------------------|--------------------|-----------------------|---|--|
| <b>UN number</b>                  | Not regulated.     | Not regulated.     | Not regulated.        | UN3082  | UN3082   |
| <b>UN proper shipping name</b>    | -                  | ☑                  | ☑                     | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Phenol, 4,4'-(1-methylethylidene) bis-, polymer with 2-(chloromethyl) oxirane, 2-propenoate, 2-Propenoic acid, (1R,2R,4R)-1,7,7-trimethylbicyclo [2.2.1]hept-2-yl ester, rel-) | Environmentally hazardous substance, liquid, n. o.s. (Phenol, 4,4'-(1-methylethylidene) bis-, polymer with 2-(chloromethyl) oxirane, 2-propenoate, 2-Propenoic acid, (1R,2R,4R)-1,7,7-trimethylbicyclo [2.2.1]hept-2-yl ester, rel-) |
| <b>Transport hazard class(es)</b> | -                  | ☑                  | ☑                     | 9<br><br>   | 9<br><br>  |
| <b>Packing group</b>              | -                  | ☑                  | ☑                     | III   | III  |



|                       |     |     |     |      |      |
|-----------------------|-----|-----|-----|------|------|
| Environmental hazards | No. | No. | No. | Yes. | Yes. |
|-----------------------|-----|-----|-----|------|------|

**Additional information**

IMDG :  
IATA :

**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 IMO instruments** : Not available.

## Section 15. Regulatory information

**U.S. Federal regulations** : **TSCA 4(a) final test rules:** Cyclotetrasiloxane, 2,2,4,4,6,6,8,8-octamethyl-  
**TSCA 8(a) CDR Exempt/Partial exemption:** See remarks  
**United States inventory (TSCA 8b):** See remarks  
**Clean Water Act (CWA) 311:** cyclohexane

|   | Product/ingredient name                                | CAS #                 | %                 |
|---|--|-----------------------|-------------------|
| <b>Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)</b> | acrylic acid<br>2-Propenoic acid, 2-phenoxyethyl ester | 79-10-7<br>48145-04-6 | 0.073593<br>9.499 |

**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

**SARA 313**

|  | Product name                           | CAS number | %      |
|--|--|------------|--------|
| <b>Form R - Reporting requirements</b> | 2-Propenoic acid, 2-phenoxyethyl ester | 48145-04-6 | 5 - 10 |
| <b>Supplier notification</b>           | 2-Propenoic acid, 2-phenoxyethyl ester | 48145-04-6 | 5 - 10 |

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

**State regulations**

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

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

**New Jersey** : The following components are listed: GLYCOL ETHERS

**Pennsylvania** : The following components are listed: 2-PROPENOIC ACID

**California Prop. 65**

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

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



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

**Montreal Protocol**

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.     |           |        |

**Remarks** : Relevant declarations related to this product are available on request.

## Section 16. Other information

**History**

**Code** : 015112WW22423  
**Date of printing** : 5/9/2022  
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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)  
 N/A = Not available  
 SGG = Segregation Group  
 UN = United Nations

**Procedure used to derive the classification**

| Classification                      | Justification      |
|-------------------------------------|--------------------|
| SKIN SENSITIZATION - Category 1     | Calculation method |
| TOXIC TO REPRODUCTION - Category 1B | Calculation method |

**References** : Not available.

Indicates information that has changed from previously issued version.

**Notice to reader**

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