

# SAFETY DATA SHEET



The information in this Safety Data Sheet is required pursuant to Hazardous Product Regulations 2015.

Date of issue/Date of revision 2 September 2023

Version 9.01

## Section 1. Identification

Product name : SIGMACOVER 456 HS HARDENER

Product code : 00189961

Other means of identification : Not available.

Product type : Liquid.

### Relevant identified uses of the substance or mixture and uses advised against

Product use : Professional applications, Used by spraying.

Use of the substance/ mixture : Coating.

Uses advised against : Not applicable.

Supplier : PPG Architectural Coatings Canada, Inc.  
1550, rue Ampère, bureau 500  
Boucherville (Québec) J4B 7L4  
Canada  
+1 450-655-3121

PPG Industries, Inc.  
One PPG Place  
Pittsburgh, PA 15272

Emergency telephone number : (412) 434-4515 (U.S.)  
(514) 645-1320 (Canada)  
SETIQ Interior de la República: 800-00-214-00 (México)  
SETIQ Ciudad de México: (55) 5559-1588 (México)

Technical Phone Number : 888-977-4762

## Section 2. Hazard identification

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3  
ACUTE TOXICITY (inhalation) - Category 4  
SKIN CORROSION - Category 1  
SERIOUS EYE DAMAGE - Category 1  
SKIN SENSITIZATION - Category 1A  
CARCINOGENICITY - Category 2  
TOXIC TO REPRODUCTION - Category 2  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
Health Hazards Not Otherwise Classified - Category 1

### GHS label elements

## Section 2. Hazard identification

**Hazard pictograms**

:

**Signal word**

: Danger

**Hazard statements**

: Flammable liquid and vapor.  
Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.  
Harmful if inhaled.  
May cause respiratory irritation.  
Suspected of causing cancer.  
Suspected of damaging fertility or the unborn child.  
May cause damage to organs through prolonged or repeated exposure. (hearing organs)  
Causes digestive tract burns.  
Prolonged or repeated contact may dry skin and cause irritation.

**Precautionary statements****Prevention**

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

**Response**

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

**Storage**

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

**Disposal**

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

**Supplemental label elements**

: Do not taste or swallow. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.  
Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity:  
33.8% (oral), 33.8% (dermal), 70.6% (inhalation)

### Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Product name	: SIGMACOVER 456 HS HARDENER
Other means of identification	: Not available.

#### CAS number/other identifiers

Ingredient name	Synonyms	% (w/w)	CAS number
xylene	Benzene, dimethyl-; Xylol; xylene, mixed isomers, pure; xylene, crude; Benzene, dimethyl-; Xylene (mixed); Xylenes; Dimethylbenzene; XYLENES (Isomer Mixture); xylene (mixture), including m-xylene, o-xylene, p-xylene; XYLENE, mixture of isomers	10 - 30*	1330-20-7
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Fatty acids, C18-unsatd., dimers, polymers with tall-oil fatty acids and triethylenetetramine; Fatty acids, C18-unsaturated, dimers, polymers with tall oil fatty acids and triethylenetetramine; (C36) Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer; Dimer fatty acids, tall oil fatty acids, triethylenetetramine polymer; Fatty acids, C18-unsaturated, dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine; Triethylenetetramine, dimer fatty acids, tall oil fatty acids polymer; Dimer acid, triethylenetetramine, tall oil fatty acids polymer; C18-Fatty acid dimer, tall oil fatty acid, triethylenetetramine polymer; C18-Fatty acid dimer, tall oil fatty acid, triethylenetetramine polyamide	7 - 13*	68082-29-1
4-nonylphenol, branched	Phenol, 4-nonyl-, branched; Branched 4-nonylphenol (mixed isomers); Nonylphenol, 4-branched; N-NONYLPHENOL; Nonylphenol; C9-Branched alkyl phenol; Branched p-nonylphenol; 4-Nonylphenol (branched); Monoalkyl(C3-9)phenol; C9 branched alkyl phenol; Branched 4-nonylphenol	5 - 10*	84852-15-3
Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylethyl)-ω-(2-aminomethylethoxy)-	Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-; Poly[oxy(methyl-1,2-ethanediyl)], alpha-(2-aminomethylethyl)- omega -(2-aminomethylethoxy)-; .alpha.,.omega.-Diaminopolypropylene glycol; Jeffamine 400; Jeffamine D 600; polyoxypropylenediamine; Diaminopolypropylene glycol; Poly(oxy (methyl-1,2-ethanediyl)), alpha-	5 - 10*	9046-10-0 (n = 2-6)

## Section 3. Composition/information on ingredients

	(2-aminomethylethyl)-omega-(2-aminomethylethoxy)-; poly(oxypropylene)diamine; Poly(oxy(methyl-1,2-ethanediyl)), .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-; JEFFAMINE D-2000		
2-methylpropan-1-ol	iso-butanol; 1-Propanol, 2-methyl-; Isobutyl alcohol; Isobutanol; 2-Methyl-1-propanol; Isopropylcarbinol; IBA; i-Butyl alcohol; catalyst consisting predominantly of dinonylnaphthalenedisulphonic acid in the form of a solution in isobutanol; isobutanol; iso-butanol; Isobutyl alcohol (I, T)	5 - 10*	78-83-1
2,4,6-tris(dimethylaminomethyl)phenol	Phenol, 2,4,6-tris[(dimethylamino)methyl]-; Phenol, 2,4,6-tris(dimethylaminomethyl)-; 2,4,6-tris((dimethylamino)methyl)phenol; Phenol, 2,4,6-tris{(dimethylamino)methyl}-; 2,4,6-Tris[(dimethylamino)methyl]phenol; 2,4,6-Tri(dimethylaminomethyl)phenol; 2,4,6-Tris(N,N-dimethylaminomethyl)phenol; 2,4,6-Tridimethylaminomethylphenol; TRIS (2,4,6-DIMETHYLAMINOMONOMETHYL) PHENOL; TRIS (2,4,6-DIMETHYLAMINOMETHYL) PHENOL; TRIS[(DIMETHYLAMINO) METHYL]PHENOL, 2,4,6-	1 - 5*	90-72-2
ethylbenzene	Benzene, ethyl-; Phenylethane; Ethylbenzol; photosensitive emulsion consisting of cyclized polyisoprene containing: — 55 % or more but not more than 75 % by weight of xylene (CAS RN 1330-20-7) and — 12 % or more but not more than 18 % by weight of ethylbenzene (CAS RN 100-41-4); EB; Mono-(or di-) methyl (ethyl,bromoallyl, bromopropylloxycarbonyl or chloropropylloxycarbonyl) benzene	1 - 5*	100-41-4
3,6-diazaoctanethylenediamin	triethylenetetramine; trientine; 1,2-Ethanediamine, N1,N2-bis (2-aminoethyl)-; 1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-; N,N'-Bis(2-aminoethyl)-1,2-ethanediamine; 3,6-diazaoctamethylenediamine; N,N'-bis (2-aminoethyl)ethane-1,2-diamine; N1, N2-bis(2-Aminoethyl)-1,2-ethanediamine; 1,4,7,10-Tetraazadecane; 3,6-Diazaoctane-1,8-diamine; N,N'-Bis (2-aminoethyl)ethylenediamine	0.5 - 1.5*	112-24-3

## Section 3. Composition/information on ingredients

\*Ranges if listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

SUB codes represent substances without registered CAS Numbers.

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

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

### Description of necessary first aid measures

- |                     |  |
|---------------------|--|
| <b>Eye contact</b>  | : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.                            |
| <b>Inhalation</b>   | : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. |
| <b>Skin contact</b> | : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.   |
| <b>Ingestion</b>    | : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.  |

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

#### Potential acute health effects

- |                     |  |
|---------------------|--|
| <b>Eye contact</b>  | : Causes serious eye damage.   |
| <b>Inhalation</b>   | : Harmful if inhaled. May cause respiratory irritation.                            |
| <b>Skin contact</b> | : Causes severe burns. Defatting to the skin. May cause an allergic skin reaction. |
| <b>Ingestion</b>    | : Corrosive to the digestive tract. Causes burns.                                  |

#### Over-exposure signs/symptoms

- |                     |   |
|---------------------|---|
| <b>Eye contact</b>  | : Adverse symptoms may include the following:<br>pain<br>watering<br>redness  |
| <b>Inhalation</b>   | : Adverse symptoms may include the following:<br>respiratory tract irritation<br>coughing<br>reduced fetal weight<br>increase in fetal deaths<br>skeletal malformations                                     |
| <b>Skin contact</b> | : Adverse symptoms may include the following:<br>pain or irritation<br>redness<br>dryness<br>cracking<br>blistering may occur<br>reduced fetal weight<br>increase in fetal deaths<br>skeletal malformations |

## Section 4. First-aid measures

- Ingestion** : Adverse symptoms may include the following:  
stomach pains  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

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

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : 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

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

- Specific hazards arising from the chemical** : Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon oxides  
nitrogen oxides

- 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

## Section 6. Accidental release measures

**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). Water polluting material. May be harmful to the environment if released in large quantities.

### Methods and materials for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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. Use spark-proof tools and explosion-proof equipment. 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 breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Special precautions** : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

**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.


## Section 7. Handling and storage

**Conditions for safe storage, including any incompatibilities** : Storage temperature: 0 to 35°C (32 to 95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. 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.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
 xylene	<p><b>CA Alberta Provincial (Canada, 6/2018). [Dimethylbenzene (o,m &amp; p isomers)]</b>            15 min OEL: 651 mg/m<sup>3</sup> 15 minutes.            15 min OEL: 150 ppm 15 minutes.            8 hrs OEL: 434 mg/m<sup>3</sup> 8 hours.            8 hrs OEL: 100 ppm 8 hours.</p> <p><b>CA British Columbia Provincial (Canada, 6/2022). [Xylene (o, m &amp; p isomers)]</b>            STEL: 150 ppm 15 minutes.            TWA: 100 ppm 8 hours.</p> <p><b>CA Quebec Provincial (Canada, 6/2022). [Xylene (o-,m-,p- isomers)]</b>            STEV: 651 mg/m<sup>3</sup> 15 minutes.            STEV: 150 ppm 15 minutes.            TWAEV: 434 mg/m<sup>3</sup> 8 hours.            TWAEV: 100 ppm 8 hours.</p> <p><b>CA Ontario Provincial (Canada, 6/2019). [Xylene (o-, m-, p-isomers)]</b>            STEL: 150 ppm 15 minutes.            TWA: 100 ppm 8 hours.</p> <p><b>CA Saskatchewan Provincial (Canada, 7/2013). [Xylene (o, m-, p-isomers)]</b>            STEL: 150 ppm 15 minutes.            TWA: 100 ppm 8 hours.</p>
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	None.
4-nonylphenol, branched	None.
Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylethyl)-ω-(2-aminomethylethoxy)-	None.
2-methylpropan-1-ol	<p><b>CA Alberta Provincial (Canada, 6/2018). Skin sensitizer.</b>            8 hrs OEL: 152 mg/m<sup>3</sup> 8 hours.            8 hrs OEL: 50 ppm 8 hours.</p> <p><b>CA British Columbia Provincial (Canada, 6/2022).</b>            TWA: 50 ppm 8 hours.</p> <p><b>CA Ontario Provincial (Canada, 6/2019).</b>            TWA: 50 ppm 8 hours.</p>

## Section 8. Exposure controls/personal protection

2,4,6-tris(dimethylaminomethyl)phenol  
ethylbenzene

**CA Quebec Provincial (Canada, 6/2022).**

TWAEV: 152 mg/m<sup>3</sup> 8 hours.

TWAEV: 50 ppm 8 hours.

**CA Saskatchewan Provincial (Canada, 7/2013).**

STEL: 60 ppm 15 minutes.

TWA: 50 ppm 8 hours.

None.

**CA Alberta Provincial (Canada, 6/2018).**

15 min OEL: 543 mg/m<sup>3</sup> 15 minutes.

15 min OEL: 125 ppm 15 minutes.

8 hrs OEL: 434 mg/m<sup>3</sup> 8 hours.

8 hrs OEL: 100 ppm 8 hours.

**CA British Columbia Provincial (Canada, 6/2022).**

TWA: 20 ppm 8 hours.

**CA Ontario Provincial (Canada, 6/2019).**

TWA: 20 ppm 8 hours.

**CA Quebec Provincial (Canada, 6/2022).**

TWAEV: 20 ppm 8 hours.

**CA Saskatchewan Provincial (Canada, 7/2013).**

STEL: 125 ppm 15 minutes.

TWA: 100 ppm 8 hours.

**CA Ontario Provincial (Canada, 6/2019).**

**Absorbed through skin.**

TWA: 3 mg/m<sup>3</sup> 8 hours.

TWA: 0.5 ppm 8 hours.

3,6-diazaoctanethylenediamin

**Consult local authorities for acceptable exposure limits.**

**Recommended monitoring procedures** : Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**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** : Chemical splash goggles and face shield.

**Skin protection**

## Section 8. Exposure controls/personal protection


- 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.
- Gloves** : butyl rubber
- 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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- 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** : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : Amine-like.
- Odor threshold** : Not available.
- pH** : Not applicable.
- Melting point** : Not available.
- Boiling point** : >37.78°C (>100°F)
- Flash point** : Closed cup: 31°C (87.8°F)
- Auto-ignition temperature** : 335°C (635°F)
- Decomposition temperature** : Not available.
- Flammability** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Evaporation rate** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 0.95
- Density ( lbs / gal )** : 7.93

### Solubility(ies)

Media	Result
 cold water	Not soluble

- Partition coefficient: n-octanol/water** : Not applicable.

## Section 9. Physical and chemical properties

Viscosity	: Kinematic (40°C (104°F)): >21 mm <sup>2</sup> /s (>21 cSt)
Volatility	: 41% (v/v), 38.038% (w/w)
% Solid. (w/w)	: 61.962

## 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** : When exposed to high temperatures may produce hazardous decomposition products.  
Refer to protective measures listed in sections 7 and 8.


**Incompatible materials** : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

**Hazardous decomposition products** : Depending on conditions, decomposition products may include the following materials: carbon oxides nitrogen oxides

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
 ylene Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine 4-nonylphenol, branched Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylethyl)-ω-(2-aminomethylethoxy)- 2-methylpropan-1-ol 2,4,6-tris(dimethylaminomethyl)phenol ethylbenzene	LD50 Dermal LD50 Oral LD50 Dermal LD50 Oral LD50 Dermal LD50 Oral LD50 Dermal LD50 Oral LC50 Inhalation Vapor LD50 Dermal LD50 Oral LD50 Dermal LD50 Dermal LD50 Oral LC50 Inhalation Vapor	Rabbit Rat Rat Rat Rabbit Rat Rat Rat Rat Rabbit Rat Rat Rat	1.7 g/kg 4.3 g/kg >2000 mg/kg >2000 mg/kg 2.14 g/kg 1300 mg/kg 2980 mg/kg 2885 mg/kg 24.6 mg/l 2460 mg/kg 2830 mg/kg 1.28 g/kg 1280 mg/kg 1200 mg/kg 17.8 mg/l	- - - - - - - 4 hours - - - - - 4 hours

## Section 11. Toxicological information

3,6-diazaoctanethylenediamin	LD50 Dermal	Rabbit	17.8 g/kg	-
	LD50 Oral	Rat	3.5 g/kg	-
	LD50 Dermal	Rabbit	1465 mg/kg	-
	LD50 Oral	Rat	1716 mg/kg	-

**Conclusion/Summary** : There are no data available on the mixture itself.

**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure	Observation
Xylene	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	Eyes - Severe irritant	Rabbit	-	-	-
4-nonylphenol, branched	Skin - Irritant	Human	-	-	-
2,4,6-tris(dimethylaminomethyl)phenol	Skin - Erythema/Eschar	Rabbit	4	-	-
	Skin - Visible necrosis	Rabbit	-	4 hours	7 days

**Conclusion/Summary**

**Skin** : There are no data available on the mixture itself.

**Eyes** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

**Sensitization**

Product/ingredient name	Route of exposure	Species	Result
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	skin	Mouse	Sensitizing
3,6-diazaoctanethylenediamin	skin	Guinea pig	Sensitizing

**Skin** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

**Mutagenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Carcinogenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Classification**

Product/ingredient name	OSHA	IARC	NTP
Xylene	-	3	-
ethylbenzene	-	2B	-

**Carcinogen Classification code:**

IARC: 1, 2A, 2B, 3, 4

NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen

OSHA: +

Not listed/not regulated: -

**Reproductive toxicity**

## Section 11. Toxicological information

**Conclusion/Summary** : There are no data available on the mixture itself.

### Teratogenicity


**Conclusion/Summary** : There are no data available on the mixture itself.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
xylene	Category 3	-	Respiratory tract irritation
2-methylpropan-1-ol	Category 3	-	Respiratory tract irritation
	Category 3		Narcotic effects

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
ethylbenzene	Category 2	-	hearing organs

**Target organs** :  Contains material which causes damage to the following organs: brain, skin.  
Contains material which may cause damage to the following organs: blood, kidneys, lungs, the nervous system, the reproductive system, liver, upper respiratory tract, central nervous system (CNS), ears, eye, lens or cornea.

### Aspiration hazard

Name	Result
xylene	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1

## Information on the likely routes of exposure

### Potential acute health effects

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

**Inhalation** : Harmful if inhaled. May cause respiratory irritation.

**Skin contact** : Causes severe burns. Defatting to the skin. May cause an allergic skin reaction.

**Ingestion** : Corrosive to the digestive tract. Causes burns.

### Over-exposure signs/symptoms

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

**Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

## Section 11. Toxicological information

- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
dryness  
cracking  
blistering may occur  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
stomach pains  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

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

- Conclusion/Summary** : There are no data available on the mixture itself. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

### Short term exposure

- Potential immediate effects** : There are no data available on the mixture itself.
- Potential delayed effects** : There are no data available on the mixture itself.

### Long term exposure

- Potential immediate effects** : There are no data available on the mixture itself.
- Potential delayed effects** : There are no data available on the mixture itself.

### Potential chronic health effects

- General** : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : Suspected of damaging fertility or the unborn child.

### Numerical measures of toxicity

#### Acute toxicity estimates

## Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
SIGMACOVER 456 HS HARDENER	2381.9	2179.6	N/A	17.3	2.2
xylene	4300	1700	N/A	11	1.5
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	2500	2500	N/A	N/A	N/A
4-nonylphenol, branched	1300	2140	N/A	N/A	N/A
Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylethyl)-ω-(2-aminomethylethoxy)-2-methylpropan-1-ol	2885	2980	N/A	N/A	N/A
2,4,6-tris(dimethylaminomethyl)phenol	2830	2460	N/A	24.6	N/A
ethylbenzene	1200	1280	N/A	N/A	N/A
	3500	17800	N/A	17.8	1.5
3,6-diazaoctanethylenediamin	1716	1465	N/A	N/A	N/A

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## Toxicity

Product/ingredient name	Result	Species	Exposure
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	EC10 1.78 mg/l	Algae	72 hours
4-nonylphenol, branched	Acute EC50 0.044 mg/l Acute LC50 0.221 mg/l EC50 15 mg/l	Crustaceans - <i>Moina macrocopa</i> Fish Algae	48 hours 96 hours 72 hours
Poly[oxy(methyl-1,2-ethanediyl)], α-(2-aminomethylethyl)-ω-(2-aminomethylethoxy)-2-methylpropan-1-ol	Acute EC50 1100 mg/l Acute LC50 175 mg/l	Daphnia Fish	48 hours 96 hours
2,4,6-tris(dimethylaminomethyl)phenol	Acute EC50 1.8 mg/l Fresh water Chronic NOEC 1 mg/l Fresh water	Daphnia Daphnia - <i>Ceriodaphnia dubia</i>	48 hours -
ethylbenzene			

## Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
ethylbenzene	-	79 % - Readily - 10 days	-	-
Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability	
xylene	-	-	Readily	
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with tall-oil fatty acids and triethylenetetramine	-	-	Not readily	
Poly[oxy(methyl-1,2-ethanediyl)], α-	-	-	Not readily	

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(2-aminomethylethyl)- $\omega$ -(2-aminomethylethoxy)-ethylbenzene	-	-	Readily
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### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Xylene	3.12	7.4 to 18.5	Low
4-nonylphenol, branched	5.4	251.19	Low
2-methylpropan-1-ol	1	-	Low
2,4,6-tris	0.219	-	Low
(dimethylaminomethyl)phenol			
ethylbenzene	3.6	79.43	Low
3,6-diazaoctanethylenediamin	-1.66 to -1.4	-	Low

### Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

## 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. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

## Section 14. Transport information

	TDG	IMDG	IATA
UN number	UN3469	UN3469	UN3469
UN proper shipping name	PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE	PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE	PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE
Transport hazard class(es)	3 (8)	3 (8)	3 (8)
Packing group	III	III	III

Product code 00189961

Date of issue 2 September 2023 Version 9.01

Product name SIGMACOVER 456 HS HARDENER

## Section 14. Transport information

Environmental hazards	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Marine pollutant substances	(Polyamide, 4-nonylphenol, branched)	(4-nonylphenol, branched)	Not applicable.

### Additional information

- TDG** : The marine pollutant mark is not required when transported by road or rail.
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.

**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 applicable.

**Proof of classification statement** : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.40-2.42 (Class 8), 2.7 (Marine pollutant mark).

## Section 15. Regulatory information

### National Inventory List

Canada inventory ( DSL ) : At least one component is not listed.

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

**Health** : 3 \* **Flammability** : 3 **Physical hazards** : 0  
( \* ) - Chronic effects

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 MSDSs 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.

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

**Health** : 3 **Flammability** : 3 **Instability** : 0

**Date of issue/Date of revision** 2 September 2023

**Organization that prepared the SDS** : EHS

## Section 16. Other information

### 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

Indicates information that has changed from previously issued version.

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