



**Date of issue**                      3 July 2025  
**Version** 4.02

## Section 1. Product and company identification

**Product name**                      : Sigmadur 500 US Hardener Clear  
**Product code**                      : 00333297  
**Other means of identification**   : Not available.  
**Product type**                      : Liquid.

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

<b>Identified uses</b> Coating. Paints. Painting-related materials.	
Uses advised against	Reason
Not applicable.	

### Supplier's details:

**Supplier**                                : PPG Industrial do Brasil – Tintas e Vernizes Ltda  
    Via Anhanguera KM 106, Bairro Sao Judas Tadeu  
    Sumare / SP, Brasil  
    55 19 2103-6000 (Recepção e Portaria)

**Email address:**                      : fds@ppg.com

**Emergency telephone number** : 0800 707 1767 / 0800 707 7022 – Empresa Ambipar response (24hs)  
    0800 014 8110 / (011)2661-8571 – CEATOX - Centro de Assistência Toxicológica  
    (atendimento 24hs)

## Section 2. Hazards identification

**Classification of the substance or mixture**        : FLAMMABLE LIQUIDS - Category 3  
    ACUTE TOXICITY (oral) - Category 5  
    ACUTE TOXICITY (dermal) - Category 5  
    ACUTE TOXICITY (inhalation) - Category 4  
    SKIN IRRITATION - Category 3  
    EYE IRRITATION - Category 2A  
    RESPIRATORY SENSITIZATION - Category 1  
    SKIN SENSITIZATION - Category 1  
    SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
    SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
    AQUATIC HAZARD (LONG-TERM) - Category 3

## Section 2. Hazards identification

### Target organs

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

Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 1%

Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 1.8%

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 30.7%

### GHS label elements

#### Hazard pictograms



#### Signal word

- Danger

#### Hazard statements

- Flammable liquid and vapor.
- May be harmful if swallowed or in contact with skin.
- Causes mild skin irritation.
- May cause an allergic skin reaction.
- Causes serious eye irritation.
- Harmful if inhaled.
- May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- May cause respiratory irritation.
- May cause drowsiness or dizziness.
- Harmful to aquatic life with long lasting effects.

### Precautionary statements

#### Prevention

- Wear protective gloves. Wear eye or face protection. Wear respiratory protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid release to the environment. Avoid breathing vapor.

#### Response

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

#### Storage

- 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.

### Other hazards which do not result in classification

- Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture

: Mixture

Other means of identification

: Not available.

Ingredient name	%	CAS number/other identifiers	Classification
Hexamethylene diisocyanate, oligomers (isocyanurate type)	≥60 - ≤85	28182-81-2	ACUTE TOXICITY (oral) - Category 5 ACUTE TOXICITY (dermal) - Category 5 ACUTE TOXICITY (inhalation) - Category 4 SKIN SENSITIZATION - Category 1A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
butanone	≥30 - ≤42	78-93-3	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 5 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 2
n-butyl acetate	≥1 - ≤4	123-86-4	FLAMMABLE LIQUIDS - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 AQUATIC HAZARD (ACUTE) - Category 3
Solvent naphtha (petroleum), light aromatic	≤2	64742-95-6	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 5 SKIN IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1 AQUATIC HAZARD (ACUTE) - Category 2 AQUATIC HAZARD (LONG-TERM) - Category 2
1,2,4-trimethylbenzene	≤1.4	95-63-6	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 5 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)

## Section 3. Composition/information on ingredients

hexamethylene-di-isocyanate	≤0.3	822-06-0	(Respiratory tract irritation) - Category 3 AQUATIC HAZARD (LONG-TERM) - Category 2  ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 1 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1A SKIN SENSITIZATION - Category 1A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
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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.

SUB codes represent substances without registered CAS Numbers.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- Inhalation** : 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.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

### 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.
- Specific treatments** : The exposed person may need to be kept under medical surveillance for 48 hours. 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.

### Potential acute health effects

- Eye contact** : Causes serious eye irritation.

## Section 4. First aid measures

- Inhalation** : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Skin contact** : May be harmful in contact with skin. Causes mild skin irritation. Defatting to the skin. May cause an allergic skin reaction.
- Ingestion** : May be harmful if swallowed. Can cause central nervous system (CNS) depression.

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. This material is harmful to aquatic life with long lasting effects. 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  
Cyanate and isocyanate.  
hydrogen cyanide

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

## Section 6. Accidental release measures

### 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.
- Special provisions** : 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). Place in a suitable container. The contaminated area should be cleaned immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises (by volume): water (45 parts), ethanol or isopropyl alcohol (50 parts) and concentrated (d: 0,880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) and water (95 parts). Add the same decontaminant to the remnants and let stand for several days until no further reaction in an unsealed container. Once this stage is reached, close container and dispose of according to local regulations (see section 13). Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

## Section 7. Handling and storage

- Precautions for safe handling** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease 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. 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.
- 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** : Do not store above the following temperature: 50°C (122°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. See Section 10 for incompatible materials before handling or use. Precautions should be taken to minimize exposure to atmospheric humidity or water. CO<sub>2</sub> will be formed, which, in closed containers, could result in pressurization.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Butanone	<b>Ministry of Labor and Employment (Brazil, 11/2001)</b> TWA 8 hours: 155 ppm. TWA 8 hours: 460 mg/m <sup>3</sup> .
n-butyl acetate	<b>ACGIH TLV (United States, 1/2024) [Butyl acetates]</b> STEL 15 minutes: 150 ppm. TWA 8 hours: 50 ppm.
1,2,4-trimethylbenzene	<b>ACGIH TLV (United States, 1/2024)</b> TWA 8 hours: 10 ppm.
hexamethylene-di-isocyanate	<b>ACGIH TLV (United States, 1/2024)</b> TWA 8 hours: 0.005 ppm. TWA 8 hours: 0.03 mg/m <sup>3</sup> .

**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 protection** : Chemical splash goggles.

**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** : Use an air-fed respirator unless a site-specific assessment determines that an air-fed respirator is not necessary, in which case the results of the risk assessment should be utilized to determine whether respiratory protection is necessary and what type of protection is appropriate. 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.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : Characteristic.
- pH** : Not applicable.
- Melting point** : Not available.
- Boiling point** : >37.78°C (>100°F)
- Flash point** : Closed cup: 26.67°C (80°F)
- Evaporation rate** : 6.25 (butyl acetate = 1)
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : 8.5 kPa (63.7 mm Hg)
- Vapor density** : Not available.
- Relative density** : 1.01

### Solubility(ies)

Media	Result
cold water	Not soluble

**Water Solubility at room temperature** : 8.3 g/l


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



## Section 9. Physical and chemical properties

**Auto-ignition temperature** : Not available.

**Decomposition temperature** : Not available.

**Viscosity** : ynamic (room temperature): Not available.  
Kinematic (room temperature): Not available.  
Kinematic (40°C (104°F)): >21 mm²/s (>21 cSt)

### Particle characteristics

**Median particle size** : Not applicable.

## 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** : In a fire, hazardous decomposition products may be produced.


**Incompatible materials** : Keep away from: oxidizing agents, strong alkalis, strong acids, amines, alcohols, water. Uncontrolled exothermic reactions occur with amines and alcohols.

**Hazardous decomposition products** : Depending on conditions, decomposition products may include the following materials: Cyanate and isocyanate. carbon oxides nitrogen oxides hydrogen cyanide


## Section 11. Toxicological information

### Information on toxicological effects

This section contains information about toxicological effects and routes of exposure for the substances or mixtures that have these data or information available. There might be substances listed in section 3 of this SDS that will not have the information available.


- armful if inhaled.
- May be harmful if swallowed or in contact with skin.
- Causes serious eye irritation.
- Causes mild skin irritation.
- May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- May cause an allergic skin reaction.
- May cause respiratory irritation.
- May cause drowsiness or dizziness.

### Acute toxicity

Product/ingredient name	Result	Dose
 examethylene diisocyanate, oligomers (isocyanurate type)	Rat - Female - Oral - LD50	>2500 mg/kg
butanone	Rabbit - Dermal - LD50	>2000 mg/kg
	Rabbit - Dermal - LD50	6480 mg/kg
	Rat - Oral - LD50	2737 mg/kg
n-butyl acetate	Rabbit - Dermal - LD50	>17600 mg/kg
	Rat - Oral - LD50	10.768 g/kg
	Rat - Inhalation - LC50 Vapor	2000 ppm [4 hours]
	Rat - Inhalation - LC50 Vapor	>21.1 mg/l [4 hours]
Solvent naphtha (petroleum), light aromatic	Rat - Oral - LD50	8400 mg/kg


## Section 11. Toxicological information


1,2,4-trimethylbenzene	Rabbit - Dermal - LD50	3.48 g/kg
	Rat - Oral - LD50	5 g/kg
	Rat - Inhalation - LC50 Vapor	18000 mg/m³ [4 hours]
hexamethylene-di-isocyanate	Rat - Oral - LD50	0.71 g/kg
	Rabbit - Dermal - LD50	0.57 g/kg
	Rat - Inhalation - LC50 Vapor	151 mg/m³ [4 hours]
	Rat - Inhalation - LC50 Dusts and mists	124 mg/m³ [4 hours]


**Conclusion/Summary** :  Harmful if inhaled.  
May be harmful if swallowed or in contact with skin.

### Irritation/Corrosion

**Conclusion/Summary**


**Skin** :  Causes mild skin irritation.


**Eyes** :  Causes serious eye irritation.

**Respiratory** :  Based on available data, the classification criteria are not met.

### Sensitization

**Conclusion/Summary**


**Skin** :  May cause an allergic skin reaction.

**Respiratory** :  May cause allergy or asthma symptoms or breathing difficulties if inhaled.

### Mutagenicity

**Conclusion/Summary** :  Based on available data, the classification criteria are not met.


### Carcinogenicity

**Conclusion/Summary** :  Based on available data, the classification criteria are not met.

### Reproductive toxicity

**Conclusion/Summary** :  Based on available data, the classification criteria are not met.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
 Hexamethylene diisocyanate, oligomers (isocyanurate type)	Category 3	-	Respiratory tract irritation
butanone	Category 3	-	Narcotic effects
n-butyl acetate	Category 3	-	Narcotic effects
Solvent naphtha (petroleum), light aromatic	Category 3	-	Narcotic effects
1,2,4-trimethylbenzene	Category 3	-	Respiratory tract irritation
hexamethylene-di-isocyanate	Category 3	-	Respiratory tract irritation

**Conclusion/Summary** :  May cause respiratory irritation.  
May cause drowsiness or dizziness.

### Specific target organ toxicity (repeated exposure)

Not available.

## Section 11. Toxicological information

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

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

### Aspiration hazard

Name	Result
butanone	ASPIRATION HAZARD - Category 2
Solvent naphtha (petroleum), light aromatic	ASPIRATION HAZARD - Category 1

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

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

**Potential acute health effects**

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

**Inhalation** : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Skin contact** : May be harmful in contact with skin. Causes mild skin irritation. Defatting to the skin. May cause an allergic skin reaction.

**Ingestion** : May be harmful if swallowed. Can cause central nervous system (CNS) depression.

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

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

**Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
wheezing and breathing difficulties  
asthma  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness

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

**Ingestion** : No specific data.

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

## Section 11. Toxicological information

**Conclusion/Summary** : There are no data available on the mixture itself. Skin contact to isocyanate monomer may lead to allergic lung reaction. Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Repeated exposure may lead to permanent respiratory disability. 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** : 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** : No known significant effects or critical hazards.

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

**Reproductive toxicity** : No known significant effects or critical hazards.

### 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)
Sigmadur 500 US Hardener Clear	2750.1	3931.6	N/A	1759.7	2.4
Hexamethylene diisocyanate, oligomers (isocyanurate type)	2500	2500	N/A	N/A	1.5
butanone	2737	6480	N/A	N/A	N/A
n-butyl acetate	10768	N/A	N/A	N/A	N/A
Solvent naphtha (petroleum), light aromatic	8400	3480	N/A	N/A	N/A
1,2,4-trimethylbenzene	5000	N/A	N/A	18	1.5
hexamethylene-di-isocyanate	710	570	N/A	0.151	0.124

## Section 11. Toxicological information

Other information : Not available.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Dose / Exposure
Hexamethylene diisocyanate, oligomers (isocyanurate type)	Acute - LC50 Acute - EC50 Acute - EC50	Fish - <i>Danio rerio</i> (zebra fish)  Daphnia - <i>daphnia magna</i> Algae - <i>scenedesmus subspicatus</i>	>100 mg/l [96 hours]  >100 mg/l [48 hours] >1000 mg/l [72 hours]
n-butyl acetate	Acute - LC50	Fish	18 mg/l [96 hours]
Solvent naphtha (petroleum), light aromatic	Acute - LC50	Fish	8.2 mg/l [96 hours]

Conclusion/Summary : Not available.

### Persistence/degradability

Product/ingredient name	Test	Result	Dose / Inoculum
n-butyl acetate	TEPA and OECD 301D	83% [28 days] - Readily	

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Hexamethylene diisocyanate, oligomers (isocyanurate type)	-	-	Not readily
n-butyl acetate	-	-	Readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Hexamethylene diisocyanate, oligomers (isocyanurate type)	5.54	3.2	Low
butanone	0.3	-	Low
n-butyl acetate	2.3	-	Low
1,2,4-trimethylbenzene	3.63	120.23	Low
hexamethylene-di-isocyanate	0.02	-	Low

### Mobility in soil

Soil/Water partition coefficient : Not available.

## Section 12. Ecological information

### 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. 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.

## Section 14. Transport information

	Brazil (ANTT)	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class(es)	3	3	3
Packing group	III	III	III
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.

### Additional information

**Brazil** : None identified.  
**Risk number** : 30  
**IMDG** : None identified.  
**IATA** : None identified.

**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.

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Product name	Sigmadur 500 US Hardener Clear				

## Section 15. Regulatory information

**References** : ABNT NBR 14725: 2023 (April 2025)

## Section 16. Other information

### History

**Date of previous issue** : 12/20/2023

**Version** : 4.02

**Prepared by** : EHS

**Key to abbreviations** :

- ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
- ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- 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)
- RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
- UN = United Nations

 Indicates information that has changed from previously issued version.

### Disclaimer

*The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.*