# SAFETY DATA SHEET

**Date of issue/Date of revision** : 21 October 2023 **Version** : 1.02

## SECTION 1: Identification of the substance/mixture and of the company/ undertaking

### 1.1 Product identifier

**Product name** : SIGMADUR 550H HARDENER

**Product code** : 319653.01

**Product description** :

**Product type** : Liquid.

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

### 1.2 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** : Product is not intended, labelled or packaged for consumer use.

### 1.3 Details of the supplier of the safety data sheet

PPG Coatings Belgium BV/SRL
Tweemontstraat 104
B-2100 Deurne
Belgium
Telephone +32-33606311
Fax +32-33606435

**e-mail address of person responsible for this SDS** : Product.Stewardship.EMEA@ppg.com

### 1.4 Emergency telephone number

**Supplier**

+31 20 4075210

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition** : Mixture

**Classification according to UK CLP/GHS**

Flam. Liq. 3, H226
Acute Tox. 4, H332
Skin Sens. 1, H317
STOT SE 3, H335
Aquatic Chronic 3, H412

The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

### 2.2 Label elements

**Hazard pictograms** :

**Signal word** : Warning

## SECTION 2: Hazards identification

**Hazard statements** : Flammable liquid and vapour.
May cause an allergic skin reaction.
Harmful if inhaled.
May cause respiratory irritation.
Harmful to aquatic life with long lasting effects.

**Precautionary statements**

**Prevention** : Wear protective gloves. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid release to the environment. Avoid breathing vapour.

**Response** : IF INHALED: Call a POISON CENTER or doctor if you feel unwell.

**Storage** : Not applicable.

**Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
P280, P210, P273, P261, P304 + P312, P501

**Supplemental label elements** : Contains isocyanates. May produce an allergic reaction.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : As from August 24 2023 adequate training is required before industrial or professional use.

**Special packaging requirements**

**Containers to be fitted with child-resistant fastenings** : Not applicable.

**Tactile warning of danger** : Not applicable.

### 2.3 Other hazards

**Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII** : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

**Other hazards which do not result in classification** : Prolonged or repeated contact may dry skin and cause irritation.

## SECTION 3: Composition/information on ingredients

**3.2 Mixtures** : Mixture

| Product/ingredient name | Identifiers | % | Classification | Type |
|---|---|---|---|---|
| Hexamethylene diisocyanate, oligomers (isocyanurate type) | REACH #: 01-2119485796-17<br>EC: 500-060-2<br>CAS: 28182-81-2 | ≥90 | Acute Tox. 4, H332<br>Skin Sens. 1, H317<br>STOT SE 3, H335 | [1] [2] |
| n-butyl acetate | REACH #: 01-2119485493-29<br>EC: 204-658-1<br>CAS: 123-86-4<br>Index: 607-025-00-1 | ≥1.0 - ≤5.0 | Flam. Liq. 3, H226<br>STOT SE 3, H336<br>EUH066 | [1] [2] |
| Hydrocarbons, C9, aromatics > 0.1% cumene | REACH #: 01-2119455851-35<br>EC: 918-668-5<br>CAS: 64742-95-6 | ≥1.0 - ≤5.0 | Flam. Liq. 3, H226<br>Carc. 1B, H350<br>STOT SE 3, H335<br>STOT SE 3, H336<br>Asp. Tox. 1, H304<br>Aquatic Chronic 2, H411<br>EUH066 | [1] |

## SECTION 3: Composition/information on ingredients

| | | | | |
|---|---|---|---|---|
| hexamethylene-di-isocyanate | REACH #: 01-2119457571-37<br>EC: 212-485-8<br>CAS: 822-06-0<br>Index: 615-011-00-1 | ≤0.30 | Acute Tox. 4, H302<br>Acute Tox. 1, H330<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>Resp. Sens. 1, H334<br>Skin Sens. 1, H317<br>STOT SE 3, H335<br>**See Section 16 for the full text of the H statements declared above.** | [1] [2] |

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, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit

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

**SUB codes represent substances without registered CAS Numbers.**

## SECTION 4: First aid measures

### 4.1 Description of 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 recognised skin cleanser. Do NOT use solvents or thinners.

**Ingestion** : If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do NOT induce vomiting.

**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.

### 4.2 Most important symptoms and effects, both acute and delayed

**Potential acute health effects**

**Eye contact** : No known significant effects or critical hazards.

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

**Skin contact** : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.

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

**Over-exposure signs/symptoms**

**Eye contact** : No specific data.

**Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing

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

**Ingestion** : No specific data.

## SECTION 4: First aid measures

### 4.3 Indication of any immediate medical attention and special treatment needed

**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.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media** : Use dry chemical, $CO_2$, water spray (fog) or foam.

**Unsuitable extinguishing media** : Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

**Hazards from the substance or mixture** : Flammable liquid and vapour. 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 combustion products** : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
Cyanate and isocyanate.
hydrogen cyanide

### 5.3 Advice for firefighters

**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

### 6.1 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 spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialised 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".

**6.2 Environmental precautions** : Avoid dispersal of spilt 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.

### 6.3 Methods and material for containment and cleaning up

## SECTION 6: Accidental release measures

**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 the 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 spilt 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.

**6.4 Reference to other sections** : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 7.1 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. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour 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.

### 7.2 Conditions for safe storage, including any incompatibilities

## SECTION 7: Handling and storage

Store between the following temperatures: 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 oxidising 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Precautions should be taken to minimise exposure to atmospheric humidity or water.
$CO_2$ will be formed, which, in closed containers, could result in pressurisation.

### 7.3 Specific end use(s)

See Section 1.2 for Identified uses.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

**Occupational exposure limits**

| Product/ingredient name | Exposure limit values |
|---|---|
| Hexamethylene diisocyanate, oligomers (isocyanurate type) | **EH40/2005 WELs (United Kingdom (UK), 1/2020). [isocyanates, all, except methyl isocyanate as –NCO] Inhalation sensitiser.**<br>STEL: 0.07 mg/m³, (as -NCO) 15 minutes.<br>TWA: 0.02 mg/m³, (as -NCO) 8 hours. |
| n-butyl acetate | **EH40/2005 WELs (United Kingdom (UK), 1/2020).**<br>STEL: 966 mg/m³ 15 minutes.<br>STEL: 200 ppm 15 minutes.<br>TWA: 724 mg/m³ 8 hours.<br>TWA: 150 ppm 8 hours. |
| hexamethylene-di-isocyanate | **EH40/2005 WELs (United Kingdom (UK), 1/2020). [isocyanates, all, except methyl isocyanate as –NCO] Inhalation sensitiser.**<br>STEL: 0.07 mg/m³, (as -NCO) 15 minutes.<br>TWA: 0.02 mg/m³, (as -NCO) 8 hours. |

| Product/ingredient name | Exposure indices |
|---|---|
| | |

**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.

**DNELs/DMELs**

| Product/ingredient name | Type | Exposure | Value | Population | Effects |
|---|---|---|---|---|---|
| Hexamethylene diisocyanate, oligomers (isocyanurate type) | DNEL | Long term Inhalation | 0.5 mg/m³ | Workers | Local |
| | DNEL | Short term Inhalation | 1 mg/m³ | Workers | Local |
| n-butyl acetate | DNEL | Long term Inhalation | 300 mg/m³ | Workers | Systemic |
| | DNEL | Long term Inhalation | 300 mg/m³ | Workers | Local |
| | DNEL | Short term Inhalation | 600 mg/m³ | Workers | Local |
| | DNEL | Short term Inhalation | 600 mg/m³ | Workers | Systemic |
| | DNEL | Long term Dermal | 11 mg/m³ | Workers | Systemic |
| | DNEL | Short term Oral | 2 mg/kg bw/day | General population | Systemic |
| | DNEL | Long term Oral | 2 mg/kg bw/day | General population | Systemic |
| | DNEL | Short term Dermal | 6 mg/kg bw/day | General population | Systemic |
| | DNEL | Short term Dermal | 11 mg/kg bw/day | Workers | Systemic |
| | DNEL | Long term Inhalation | 35.7 mg/m³ | General population | Local |
| | DNEL | Short term Inhalation | 300 mg/m³ | General population | Local |
| | DNEL | Short term Inhalation | 300 mg/m³ | General population | Systemic |
| | DNEL | Long term Inhalation | 300 mg/m³ | Workers | Local |

## SECTION 8: Exposure controls/personal protection

| | | | | | |
|---|---|---|---|---|---|
| | DNEL | Short term Inhalation | 600 mg/m³ | Workers | Local |
| | DNEL | Short term Inhalation | 600 mg/m³ | Workers | Systemic |
| | DNEL | Long term Dermal | 3.4 mg/kg bw/day | General population | Systemic |
| | DNEL | Long term Dermal | 7 mg/kg bw/day | Workers | Systemic |
| | DNEL | Long term Inhalation | 12 mg/m³ | General population | Systemic |
| | DNEL | Long term Inhalation | 48 mg/m³ | Workers | Systemic |
| Hydrocarbons, C9, aromatics > 0.1% cumene | DNEL | Long term Inhalation | 150 mg/m³ | Workers | Systemic |
| | DNEL | Long term Dermal | 25 mg/kg bw/day | Workers | Systemic |
| | DNEL | Long term Inhalation | 32 mg/m³ | General population | Systemic |
| | DNEL | Long term Dermal | 11 mg/kg bw/day | General population | Systemic |
| | DNEL | Long term Oral | 11 mg/kg bw/day | General population | Systemic |
| hexamethylene-di-isocyanate | DNEL | Long term Inhalation | 0.035 mg/m³ | Workers | Local |
| | DNEL | Short term Inhalation | 0.07 mg/m³ | Workers | Local |

**PNECs**

| Product/ingredient name | Compartment Detail | Value | Method Detail |
|---|---|---|---|
| Hexamethylene diisocyanate, oligomers (isocyanurate type) | Fresh water | 0.127 mg/l | Assessment Factors |
| | Marine water | 0.0127 mg/l | Assessment Factors |
| | Sewage Treatment Plant | 88 mg/l | Assessment Factors |
| | Fresh water sediment | 266701 mg/kg dwt | Equilibrium Partitioning |
| | Marine water sediment | 26670 mg/kg dwt | Equilibrium Partitioning |
| | Soil | 53182 mg/kg | Equilibrium Partitioning |
| n-butyl acetate | Fresh water | 0.18 mg/l | - |
| | Marine water | 0.018 mg/l | - |
| | Fresh water sediment | 0.981 mg/kg | - |
| | Marine water sediment | 0.0981 mg/kg | - |
| | Sewage Treatment Plant | 35.6 mg/l | - |
| | Soil | 0.0903 mg/kg | - |
| hexamethylene-di-isocyanate | Fresh water | 0.0774 mg/l | Assessment Factors |
| | Marine water | 0.00774 mg/l | Assessment Factors |
| | Sewage Treatment Plant | 8.42 mg/l | Assessment Factors |
| | Fresh water sediment | 0.01334 mg/kg dwt | Equilibrium Partitioning |
| | Marine water sediment | 0.001334 mg/kg dwt | Equilibrium Partitioning |
| | Soil | 0.0026 mg/kg dwt | Equilibrium Partitioning |

### 8.2 Exposure controls

**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, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**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 glasses with side shields.

**Skin 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. When prolonged or

## SECTION 8: Exposure controls/personal protection

frequently repeated contact may occur, a glove with a protection class of 6 (breakthrough time greater than 480 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 2 or higher (breakthrough time greater than 30 minutes according to EN 374) is recommended. The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

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. 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. Wear a respirator conforming to EN140. Filter type: organic vapour (Type A) and particulate filter P3

**Restrictions on use** : Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.

**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.

## SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### 9.1 Information on basic physical and chemical properties

**Appearance**

**Physical state** : Liquid.

**Colour** : Colourless.

**Odour** : Amine-like.

**Odour threshold** : Not available.

**Melting point/freezing point** : May start to solidify at the following temperature: -51.3 to -28.4°C (-60.3 to -19.1°F) This is based on data for the following ingredient: Hexamethylene diisocyanate, oligomers (isocyanurate type). Weighted average: -43.53°C (-46.4°F)

**Initial boiling point and boiling range** : >37.78°C (>100°F)

**Flammability (solid, gas)** : liquid

**Upper/lower flammability or explosive limits** : Greatest known range: Lower: 1.4% Upper: 7.6% (n-butyl acetate)

**Flash point** : Closed cup: 55.7°C (132.3°F)

**Auto-ignition temperature** : 370°C (698°F)

**Decomposition temperature** :

**pH** : Not applicable.
Not applicable. insoluble in water.

**Viscosity** : Kinematic (room temperature): >400 $mm^2/s$
Kinematic (40°C): >21 $mm^2/s$

## SECTION 9: Physical and chemical properties

**Solubility(ies)** :

| Media | Result |
|---|---|
| cold water | Not soluble |

**Miscible with water** : No.

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

**Vapour pressure** :

| Ingredient name | Vapour Pressure at 20°C | | | Vapour pressure at 50°C | | |
|---|---|---|---|---|---|---|
| | mm Hg | kPa | Method | mm Hg | kPa | Method |
| n-butyl acetate | 11.25 | 1.5 | DIN EN 13016-2 | | | |

**Relative density** : 1.13

**Vapour density** : Highest known value: 4.1 (Air = 1) (1,2,4-trimethylbenzene). Weighted average: 4.02 (Air = 1)

**Explosive properties** : The product itself is not explosive, but the formation of an explosible mixture of vapour or dust with air is possible.

**Oxidising properties** : Product does not present an oxidizing hazard.

**Particle characteristics**

**Median particle size** : Not applicable.

## SECTION 10: Stability and reactivity

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

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

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

**10.4 Conditions to avoid** : In a fire, hazardous decomposition products may be produced.
Refer to protective measures listed in sections 7 and 8.

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

**10.6 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

### 11.1 Information on toxicological effects

**Acute toxicity**

| Product/ingredient name | Result | Species | Dose | Exposure |
|---|---|---|---|---|
| Hexamethylene diisocyanate, oligomers (isocyanurate type) | LD50 Dermal | Rabbit | >2000 mg/kg | - |
| | LD50 Oral | Rat - Female | >2500 mg/kg | - |
| n-butyl acetate | LC50 Inhalation Vapour | Rat | >21.1 mg/l | 4 hours |
| | LC50 Inhalation Vapour | Rat | 2000 ppm | 4 hours |
| | LD50 Dermal | Rabbit | >17600 mg/kg | - |
| | LD50 Oral | Rat | 10.768 g/kg | - |
| Hydrocarbons, C9, | LD50 Dermal | Rabbit | >3160 mg/kg | - |

## SECTION 11: Toxicological information

| | | | | |
|---|---|---|---|---|
| aromatics > 0.1% cumene | LD50 Oral | Rat - Female | 3492 mg/kg | - |
| hexamethylene-di-isocyanate | LC50 Inhalation Dusts and mists | Rat | 124 mg/m³ | 4 hours |
| | LC50 Inhalation Vapour | Rat | 151 mg/m³ | 4 hours |
| | LD50 Dermal | Rabbit | 0.57 g/kg | - |
| | LD50 Oral | Rat | 0.71 g/kg | - |

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

**Acute toxicity estimates**

| Product/ingredient name | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapours) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|---|---|---|---|---|---|
| SIGMADUR 550H HARDENER | N/A | N/A | N/A | 101.3 | 1.7 |
| Hexamethylene diisocyanate, oligomers (isocyanurate type) | N/A | N/A | N/A | N/A | 1.5 |
| n-butyl acetate | 10768 | N/A | N/A | N/A | N/A |
| Hydrocarbons, C9, aromatics > 0.1% cumene | 3492 | N/A | N/A | N/A | N/A |
| hexamethylene-di-isocyanate | 710 | N/A | N/A | 0.151 | N/A |

**Irritation/Corrosion**

**Conclusion/Summary** : Not available.

**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.

**Sensitisation**

**Conclusion/Summary**

**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.

**Reproductive toxicity**

**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)**

| Product/ingredient name | Category | Route of exposure | Target organs |
|---|---|---|---|
| Hexamethylene diisocyanate, oligomers (isocyanurate type) | Category 3 | - | Respiratory tract irritation |
| n-butyl acetate | Category 3 | - | Narcotic effects |
| Hydrocarbons, C9, aromatics > 0.1% cumene | Category 3 | - | Respiratory tract irritation |
| | Category 3 | | Narcotic effects |
| hexamethylene-di-isocyanate | Category 3 | - | Respiratory tract irritation |

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

Not available.

**Aspiration hazard**

## SECTION 11: Toxicological information

| Product/ingredient name | Result |
|---|---|
| Hydrocarbons, C9, aromatics > 0.1% cumene | ASPIRATION HAZARD - Category 1 |

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

**Potential acute health effects**

**Eye contact** : No known significant effects or critical hazards.

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

**Skin contact** : Defatting to the skin. May cause skin dryness and irritation. May cause an allergic skin reaction.

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

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

**Eye contact** : No specific data.

**Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing

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

**Ingestion** : No specific data.

**Delayed and immediate effects as well as 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**

Not available.

**Conclusion/Summary** : Not available.

**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.

**Other information** : Not available.

# SECTION 12: Ecological information

## 12.1 Toxicity

| Product/ingredient name | Result | Species | Exposure |
|---|---|---|---|
| Hexamethylene diisocyanate, oligomers (isocyanurate type) | Acute EC50 >1000 mg/l | Algae - *scenedesmus subspicatus* | 72 hours |
| | Acute EC50 >100 mg/l | Daphnia - *daphnia magna* | 48 hours |
| | Acute LC50 >100 mg/l | Fish - *Danio rerio (zebra fish)* | 96 hours |
| n-butyl acetate | Acute LC50 18 mg/l | Fish | 96 hours |
| Hydrocarbons, C9, aromatics > 0.1% cumene | EC50 3.2 mg/l | Daphnia | 48 hours |
| | LC50 9.2 mg/l | Fish | 96 hours |

**Conclusion/Summary** : Not available.

## 12.2 Persistence and degradability

| Product/ingredient name | Test | Result | Dose | Inoculum |
|---|---|---|---|---|
| n-butyl acetate | TEPA and OECD 301D | 83 % - Readily - 28 days | - | - |
| Hydrocarbons, C9, aromatics > 0.1% cumene | - | 75 % - Readily - 28 days | - | - |

**Conclusion/Summary** : Not available.

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|---|---|---|---|
| Hexamethylene diisocyanate, oligomers (isocyanurate type) | - | - | Not readily |
| n-butyl acetate | - | - | Readily |
| Hydrocarbons, C9, aromatics > 0.1% cumene | - | - | Readily |

## 12.3 Bioaccumulative potential

| Product/ingredient name | $LogP_{ow}$ | BCF | Potential |
|---|---|---|---|
| Hexamethylene diisocyanate, oligomers (isocyanurate type) | 5.54 | 3.2 | Low |
| n-butyl acetate | 2.3 | - | Low |
| hexamethylene-di-isocyanate | 0.02 | - | Low |

## 12.4 Mobility in soil

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

**Mobility** : Not available.

## 12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

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

## SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 13.1 Waste treatment methods

**Product**

**Methods of disposal** : The generation of waste should be avoided or minimised 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.

**Hazardous waste** : Yes.

**Waste catalogue**

| Waste code | Waste designation |
|---|---|
| 08 01 11* | waste paint and varnish containing organic solvents or other hazardous substances |

**Packaging**

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

| Type of packaging | Waste catalogue |
|---|---|
| Container | 15 01 06 mixed packaging |

**Special precautions** : 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. Vapour 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

| | ADR/RID | ADN | IMDG | IATA |
|---|---|---|---|---|
| **14.1 UN number** | UN1263 | UN1263 | UN1263 | UN1263 |
| **14.2 UN proper shipping name** | PAINT RELATED MATERIAL | PAINT RELATED MATERIAL | PAINT RELATED MATERIAL | PAINT RELATED MATERIAL |
| **14.3 Transport hazard class(es)** | 3 | 3 | 3 | 3 |
| **14.4 Packing group** | III | III | III | III |
| **14.5 Environmental hazards** | No. | Yes. | No. | No. |
| **Marine pollutant substances** | Not applicable. | Not applicable. | Not applicable. | Not applicable. |

**Additional information**

**ADR/RID** : This class 3 viscous liquid is not subject to regulation in packagings up to 450 L according to 2.2.3.1.5.1.

**Tunnel code** : (D/E)

**ADN** : The product is only regulated as an environmentally hazardous substance when transported in tank vessels. This class 3 viscous liquid is not subject to regulation in packagings up to 450 L according to 2.2.3.1.5.1.

## SECTION 14: Transport information

**IMDG** : This class 3 viscous liquid is not subject to regulation in packagings up to 450 L according to 2.3.2.5.

**IATA** : None identified.

**14.6 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.

**14.7 Transport in bulk according to IMO instruments** : Not available.

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

**UK (GB)/REACH**

**Annex XIV - List of substances subject to authorisation**

**Annex XIV**

None of the components are listed.

**Substances of very high concern**

None of the components are listed.

**Ozone depleting substances**

Not listed.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : As from August 24 2023 adequate training is required before industrial or professional use.

**Seveso Directive**

This product is controlled under the Seveso Directive.

**Danger criteria**

| Category |
| --- |
| P5c |

## SECTION 16: Other information

Indicates information that has changed from previously issued version.

**Abbreviations and acronyms** : ATE = Acute Toxicity Estimate
GB CLP = UK CLP (EC No 1272/2008) on the Classification, Labelling and Packaging of Substances and Mixtures as amended by (EU Exit) Regulations 2019 No. 720 and amendments
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = GB CLP-specific Hazard statement
N/A = Not available
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
SGG = Segregation Group
vPvB = Very Persistent and Very Bioaccumulative

**Procedure used to derive the classification**

## SECTION 16: Other information

| Classification | Justification |
|---|---|
| Flam. Liq. 3, H226 | On basis of test data |
| Acute Tox. 4, H332 | Calculation method |
| Skin Sens. 1, H317 | Calculation method |
| STOT SE 3, H335 | Calculation method |
| Aquatic Chronic 3, H412 | Calculation method |

**Full text of abbreviated H statements**

| | |
|---|---|
| H226 | Flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H304 | May be fatal if swallowed and enters airways. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H330 | Fatal if inhaled. |
| H332 | Harmful if inhaled. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |
| H350 | May cause cancer. |
| H411 | Toxic to aquatic life with long lasting effects. |
| H412 | Harmful to aquatic life with long lasting effects. |
| EUH066 | Repeated exposure may cause skin dryness or cracking. |

**Full text of classifications**

| | |
|---|---|
| Acute Tox. 1 | ACUTE TOXICITY - Category 1 |
| Acute Tox. 4 | ACUTE TOXICITY - Category 4 |
| Aquatic Chronic 2 | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2 |
| Aquatic Chronic 3 | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3 |
| Asp. Tox. 1 | ASPIRATION HAZARD - Category 1 |
| Carc. 1B | CARCINOGENICITY - Category 1B |
| Eye Irrit. 2 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 |
| Flam. Liq. 3 | FLAMMABLE LIQUIDS - Category 3 |
| Resp. Sens. 1 | RESPIRATORY SENSITISATION - Category 1 |
| Skin Irrit. 2 | SKIN CORROSION/IRRITATION - Category 2 |
| Skin Sens. 1 | SKIN SENSITISATION - Category 1 |
| STOT SE 3 | SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3 |

**History**

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**Prepared by** : EHS

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**Disclaimer**

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