

# SAFETY DATA SHEET

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

### 1.1 Product identifier

**Product name** : PU HARDENER FIRE RETARDANT -

**Product code** : TH0333/00

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

**Material uses** : Paint or paint related material.

: Industrial use only.

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

SHERWIN-WILLIAMS Italy S.r.l.

Via del Fiffò, 12 - 40065 Pianoro (BO)

Italia - C.P. 18

Cod. Fisc. e Reg. Impr. Bo 08866930152

**e-mail address of person** : regulatory.SWI@sherwin.com

**responsible for this SDS**

### 1.4 Emergency telephone number

#### National advisory body/Poison Center

**Telephone number** : 111 (general public) /0344 892 111 (Medical professional (NHS) only)

#### Supplier

**Telephone number** : +39 051 770511

**Hours of operation** : Emergency contact available 24 hours a day

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition** : Mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Flam. Liq. 2, H225

Eye Irrit. 2, H319

Resp. Sens. 1, H334

Skin Sens. 1, H317

STOT SE 3, H336

The product is classified as hazardous according to Regulation (EC) 1272/2008 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** : Danger

**SECTION 2: Hazards identification**

**Hazard statements** : Highly flammable liquid and vapor.  
 May cause an allergic skin reaction.  
 Causes serious eye irritation.  
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 May cause drowsiness or dizziness.

**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 breathing vapor.

**Response** : IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor.

**Storage** : Not applicable.

**Disposal** : Not applicable.

**Hazardous ingredients** : n-Butyl Acetate  
 Ethyl Acetate  
 Toluene Diisocyanate Polymer  
 Hexamethylene Diisocyanate Polymer  
 Toluene Diisocyanate

**Supplemental label elements** : Contains isocyanates. May produce an allergic reaction. FOR INDUSTRIAL USE ONLY

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.

**Special packaging requirements**

Not applicable.

**2.3 Other hazards**

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** : None known.

**SECTION 3: Composition/information on ingredients**

**3.2 Mixture**

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
n-Butyl Acetate	REACH #: 01-2119485493-29 EC: 204-658-1 CAS: 123-86-4 Index: 607-025-00-1	≥25 - ≤50	Flam. Liq. 3, H226 STOT SE 3, H336 EUH066	[1] [2]
Ethyl Acetate	REACH #: 01-2119475103-46 EC: 205-500-4 CAS: 141-78-6 Index: 607-022-00-5	≥25 - ≤50	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336 EUH066	[1] [2]
Toluene Diisocyanate Polymer	CAS: 9017-01-0	≥10 - ≤25	Eye Irrit. 2, H319 Skin Sens. 1, H317	[1]
Hexamethylene Diisocyanate Polymer	REACH #: 01-2119485796-17 EC: 500-060-2	≤4.8	Acute Tox. 4, H332 Skin Sens. 1, H317 STOT SE 3, H335	[1] [2]

**SECTION 3: Composition/information on ingredients**

Toluene Diisocyanate	CAS: 28182-81-2 REACH #: 01-2119454791-34 EC: 247-722-4 CAS: 26471-62-5 Index: 615-006-00-4	≤0.22	Acute Tox. 1, H330 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 Aquatic Chronic 3, H412  <b>See Section 16 for the full text of the H statements declared above.</b>	[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 or vPvBs 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
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy

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

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

- General** : In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical advice.
- 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.
- 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**

There are no data available on the mixture itself. Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]. See Sections 2 and 3 for details.

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.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. 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.

## SECTION 4: First aid measures

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. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability. Repeated or prolonged contact with irritants may cause dermatitis.

Contains Toluene Diisocyanate Polymer, Hexamethylene diisocyanate, oligomers, m-tolyldiene diisocyanate. May produce an allergic reaction.

### 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.

See toxicological information (Section 11)

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media** : Recommended: alcohol-resistant foam, carbon dioxide, powders

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

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

**Hazards from the substance or mixture** : Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.

**Hazardous combustion products** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen, hydrogen cyanide, monomeric isocyanates.

### 5.3 Advice for firefighters

**Special protective actions for fire-fighters** : Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses.

**Special protective equipment for fire-fighters** : Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : Exclude sources of ignition and ventilate the area. Avoid breathing vapor or mist. Refer to protective measures listed in sections 7 and 8.

Keep unnecessary and unprotected personnel from entering.

**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".

### 6.2 Environmental precautions

: 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 6: Accidental release measures

- 6.3 Methods and materials for containment and cleaning up** : 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).
- 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).

**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.**

**Examination of lung function should be carried out on a regular basis on persons spraying this mixture.**

- 7.1 Precautions for safe handling** : Prevent the creation of flammable or explosive concentrations of vapors in air and avoid vapor concentrations higher than the occupational exposure limits. In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Operators should wear antistatic footwear and clothing and floors should be of the conducting type. Care should be taken when re-opening partly-used containers. 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. Keep away from heat, sparks and flame. No sparking tools should be used. Avoid contact with skin and eyes. Avoid the inhalation of dust, particulates, spray or mist arising from the application of this mixture. Avoid inhalation of dust from sanding. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Put on appropriate personal protective equipment (see Section 8). Never use pressure to empty. Container is not a pressure vessel. Always keep in containers made from the same material as the original one. Comply with the health and safety at work laws. Do not allow to enter drains or watercourses.
- Information on fire and explosion protection**  
Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air.

When operators, whether spraying or not, have to work inside the spray booth, ventilation is unlikely to be sufficient to control particulates and solvent vapors in all cases. In such circumstances, they should wear a compressed-air-fed respirator during the spraying process and until the particulate and solvent vapor concentrations have fallen below the exposure limits.

## SECTION 7: Handling and storage

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

: Store in accordance with local regulations.

#### Notes on joint storage

Keep away from: oxidizing agents, strong alkalis, strong acids.

#### Additional information on storage conditions

Observe label precautions. Store in a dry, cool and well-ventilated area. Keep away from heat and direct sunlight.

Keep container tightly closed.

Keep away from sources of ignition. No smoking. Prevent unauthorized access.

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Contaminated absorbent material may pose the same hazard as the spilled product.

### 7.3 Specific end use(s)

**Recommendations** : Not available.

**Industrial sector specific solutions** : Not available.

Good housekeeping standards, regular safe removal of waste materials and regular maintenance of spray booth filters will minimise the risks of spontaneous combustion and other fire hazards.

**Before use of this material please refer to the Exposure Scenario(s) if attached for the specific end use, control measures and additional PPE considerations.**

## SECTION 8: Exposure controls/personal protection

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).

### 8.1 Control parameters

#### Occupational exposure limits

Product/ingredient name	Exposure limit values
n-Butyl Acetate	<b>EH40/2005 WELs (United Kingdom (UK), 8/2018).</b> STEL: 966 mg/m <sup>3</sup> 15 minutes. STEL: 200 ppm 15 minutes. TWA: 724 mg/m <sup>3</sup> 8 hours. TWA: 150 ppm 8 hours.
Ethyl Acetate	<b>EH40/2005 WELs (United Kingdom (UK), 8/2018).</b> STEL: 400 ppm 15 minutes. TWA: 200 ppm 8 hours. STEL: 1468 mg/m <sup>3</sup> 15 minutes. TWA: 734 mg/m <sup>3</sup> 8 hours.
Hexamethylene Diisocyanate Polymer	<b>EH40/2005 WELs (United Kingdom (UK), 8/2018). Inhalation sensitizer.</b> STEL: 0.07 mg/m <sup>3</sup> , (as NCO) 15 minutes. TWA: 0.02 mg/m <sup>3</sup> , (as NCO) 8 hours.
Toluene Diisocyanate	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011). Inhalation sensitizer.</b> STEL: 0.07 mg/m <sup>3</sup> , (as NCO) 15 minutes. TWA: 0.02 mg/m <sup>3</sup> , (as NCO) 8 hours.

#### Recommended monitoring procedures

: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482

**SECTION 8: Exposure controls/personal protection**

(Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

- : Regular monitoring of all work areas should be carried out at all times, including areas that may not be equally ventilated.

**DNELs/DMELs**

Product/ingredient name	Type	Exposure	Value	Population	Effects
n-Butyl Acetate	DNEL	Short term Inhalation	960 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Short term Inhalation	960 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Inhalation	480 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Inhalation	480 mg/m <sup>3</sup>	Workers	Local
	DNEL	Short term Inhalation	859.7 mg/m <sup>3</sup>	General population [Consumers]	Systemic
	DNEL	Short term Inhalation	859.7 mg/m <sup>3</sup>	General population [Consumers]	Local
	DNEL	Long term Inhalation	102.34 mg/m <sup>3</sup>	General population [Consumers]	Systemic
	DNEL	Long term Inhalation	102.34 mg/m <sup>3</sup>	General population [Consumers]	Local
Ethyl Acetate	DNEL	Long term Inhalation	730 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Dermal	63 mg/kg	Workers	Systemic
	DNEL	Short term Inhalation	1468 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Inhalation	734 mg/m <sup>3</sup>	Workers	Local
	DNEL	Short term Inhalation	1468 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Inhalation	367 mg/m <sup>3</sup>	General population [Consumers]	Systemic
	DNEL	Short term Inhalation	734 mg/m <sup>3</sup>	General population [Consumers]	Systemic
	DNEL	Long term Inhalation	367 mg/m <sup>3</sup>	General population [Consumers]	Local
	DNEL	Short term Inhalation	734 mg/m <sup>3</sup>	General population [Consumers]	Local
	DNEL	Long term Dermal	37 mg/kg bw/day	General population [Consumers]	Systemic
	DNEL	Long term Oral	4.5 mg/kg bw/day	General population [Consumers]	Systemic
	Hexamethylene Diisocyanate Polymer	DNEL	Long term Inhalation	0.5 mg/m <sup>3</sup>	Workers
DNEL		Short term Inhalation	1 mg/m <sup>3</sup>	Workers	Local

**PNECs**

**SECTION 8: Exposure controls/personal protection**

Product/ingredient name	Compartment Detail	Value	Method Detail
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	-
	Soil	0.0903 mg/kg	-
	Sewage Treatment Plant	35.6 mg/l	-
	Ethyl Acetate	Sewage Treatment Plant	650 mg/l
Fresh water		0.24 mg/l	-
Fresh water sediment		1.15 mg/kg wwt	-
Soil		0.148 mg/kg wwt	-
Marine water		0.024 mg/l	-
Hexamethylene Diisocyanate Polymer	Marine water sediment	0.115 mg/kg wwt	-
	Fresh water	0.127 mg/l	-
	Fresh water sediment	266700 mg/kg	-
	Marine water	0.0127 mg/l	-
	Marine water sediment	26670 mg/kg	-
	Sewage Treatment Plant	38.3 mg/l	-
	Soil	53182 mg/kg dwt	-

**8.2 Exposure controls**

Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be exposed to any process in which this product is used.

Examination of lung function should be carried out on a regular basis on persons spraying this mixture.

- Appropriate engineering controls** :
- Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. Air-fed protective respiratory equipment must be worn by the spray operator, even when good ventilation is provided. In other operations, if local exhaust ventilation and good general extraction are not sufficient to maintain concentrations of particulates and solvent vapors below the OEL, suitable respiratory protection must be worn. (See Occupational exposure controls.)
  - Users are advised to consider national Occupational Exposure Limits or other equivalent values.

**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** :
- Use safety eyewear designed to protect against splash of liquids.

**Skin protection**

**Hand protection**

**Gloves**

- Wear suitable gloves tested to EN374.
- Gloves for short term exposure/splash protection (less than 10 min): Nitrile >0.35 mm  
Gloves for splash protection need to be changed immediately when in contact with chemicals.  
For long term exposure or spills (breakthrough time >480 min): Use PE laminate gloves as under gloves.  
Due to many conditions (e.g. temperature, abrasion) the practical usage of a chemical protective glove in practice may be much shorter than the permeation time determined through testing.

## SECTION 8: Exposure controls/personal protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals. The breakthrough time must be greater than the end use time of the product. The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed. Gloves should be replaced regularly and if there is any sign of damage to the glove material. Always ensure that gloves are free from defects and that they are stored and used correctly. The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance. Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred. 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.

- Body protection** : Personnel should wear antistatic clothing made of natural fibers or of high-temperature-resistant synthetic fibers.
- : 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. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.
- 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 a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. 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.
- Environmental exposure controls** : Do not allow to enter drains or watercourses.

**Before use of this material please refer to the Exposure Scenario(s) if attached for the specific end use, control measures and additional PPE considerations. The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation. The provisions of the national health and safety at work regulations apply to the use of this product at work.**

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : Characteristic.
- Odor threshold** : Not available.
- pH** : Not relevant/applicable due to nature of the product.
- Melting point/freezing point** : Not relevant/applicable due to nature of the product.
- Initial boiling point and boiling range** : 70°C
- Flash point** : Closed cup: -5°C [Pensky-Martens Closed Cup]
- Evaporation rate** : 3.91 (butyl acetate = 1)
- Flammability (solid, gas)** : Not relevant/applicable due to nature of the product.

## SECTION 9: Physical and chemical properties

<b>Upper/lower flammability or explosive limits</b>	: LEL: 1.38% (n-Butyl Acetate) UEL: 10.7% (Ethyl Acetate)
<b>Vapor pressure</b>	: 11.5 kPa [at 20°C]
<b>Vapor density</b>	: 3.04 [Air = 1]
<b>Relative density</b>	: 0.96
<b>Solubility(ies)</b>	: Not relevant/applicable due to nature of the product.
<b>Partition coefficient: n-octanol/ water</b>	: Not relevant/applicable due to nature of the product.
<b>Auto-ignition temperature</b>	: Not relevant/applicable due to nature of the product.
<b>Decomposition temperature</b>	: Not relevant/applicable due to nature of the product.
<b>Viscosity</b>	: Kinematic (40°C): >0.205 cm <sup>2</sup> /s
<b>Explosive properties</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Oxidizing properties</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.

## SECTION 10: Stability and reactivity

<b>10.1 Reactivity</b>	: The product reacts slowly with water, resulting in the production of carbon dioxide.
<b>10.2 Chemical stability</b>	: Stable under recommended storage and handling conditions (see Section 7).
<b>10.3 Possibility of hazardous reactions</b>	: In closed containers, pressure buildup could result in distortion, expansion and, in extreme cases, bursting of the container.
<b>10.4 Conditions to avoid</b>	: In a fire, hazardous decomposition products may be produced.
<b>10.5 Incompatible materials</b>	: Keep away from: oxidizing agents, strong alkalis, strong acids, amines, alcohols, water. Uncontrolled exothermic reactions occur with amines and alcohols.
<b>10.6 Hazardous decomposition products</b>	: Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen, hydrogen cyanide, monomeric isocyanates.

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

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

There are no data available on the mixture itself. Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]. See Sections 2 and 3 for details.

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.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. 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.

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. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability.

**SECTION 11: Toxicological information**

Repeated or prolonged contact with irritants may cause dermatitis.

Contains Toluene Diisocyanate Polymer, Hexamethylene diisocyanate, oligomers, m-tolyldiene diisocyanate. May produce an allergic reaction.

**Acute toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
n-Butyl Acetate	LD50 Dermal	Rabbit	>17600 mg/kg	-
	LD50 Oral	Rat	10768 mg/kg	-
Ethyl Acetate	LD50 Oral	Rat	5620 mg/kg	-
Hexamethylene Diisocyanate Polymer	LC50 Inhalation Vapor	Rat	18500 mg/m <sup>3</sup>	1 hours
Toluene Diisocyanate	LD50 Oral	Rat	4130 mg/kg	-

**Acute toxicity estimates**

Route	ATE value
Inhalation (vapors)	24.47 mg/l

**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure	Observation
n-Butyl Acetate	Eyes - Moderate irritant	Rabbit	-	100 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
Hexamethylene Diisocyanate Polymer	Eyes - Moderate irritant	Rabbit	-	100 mg	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-
Toluene Diisocyanate	Skin - Severe irritant	Rabbit	-	500 milligrams	-
		Rabbit	-		-

**Conclusion/Summary** : Not available.

**Sensitization**

No data available

**Conclusion/Summary** : Not available.

**Mutagenicity**

No data available

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Teratogenicity**

No data available

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

Product/ingredient name	Category	Route of exposure	Target organs
n-Butyl Acetate	Category 3	-	Narcotic effects
Ethyl Acetate	Category 3	-	Narcotic effects
Hexamethylene Diisocyanate Polymer	Category 3	-	Respiratory tract irritation
Toluene Diisocyanate	Category 3	-	Respiratory tract irritation

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

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II

PU HARDENER FIRE RETARDANT -

TH0333/00

## SECTION 11: Toxicological information

Product/ingredient name	Category	Route of exposure	Target organs
No data available			

### Aspiration hazard

Product/ingredient name	Result
No data available	

**Other information** : Not available.

## SECTION 12: Ecological information

### 12.1 Toxicity

There are no data available on the mixture itself.  
Do not allow to enter drains or watercourses.

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]. See Sections 2 and 3 for details.

Product/ingredient name	Result	Species	Exposure
n-Butyl Acetate	Acute LC50 32 mg/l Marine water	Crustaceans - Artemia salina	48 hours
Ethyl Acetate	Acute LC50 18000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute EC50 2500000 µg/l Fresh water	Algae - Selenastrum sp.	96 hours
	Acute LC50 750000 µg/l Fresh water	Crustaceans - Gammarus pulex	48 hours
	Acute LC50 154000 µg/l Fresh water	Daphnia - Daphnia cucullata	48 hours
	Acute LC50 212500 µg/l Fresh water	Fish - Heteropneustes fossilis	96 hours
	Chronic NOEC 2400 µg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 75.6 mg/l Fresh water	Fish - Pimephales promelas - Embryo	32 days

### 12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
No data available				

**Conclusion/Summary** : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
n-Butyl Acetate	-	-	Readily
Ethyl Acetate	-	-	Readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Ethyl Acetate	-	30	low
Hexamethylene Diisocyanate Polymer	-	367.7	low

### 12.4 Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : 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.

## SECTION 12: Ecological information

- 12.6 Other adverse effects** : No known significant effects or critical hazards.  
 : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

- Methods of disposal** : 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.

- Hazardous waste** : Yes.

- European waste catalogue (EWC)** : waste isocyanates 08 05 01\*

- Disposal considerations** : Do not allow to enter drains or watercourses. Residues in empty containers should be neutralized with a decontaminant (see section 6).  
 Dispose of according to all federal, state and local applicable regulations.  
 If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned.  
 For further information, contact your local waste authority.

#### Packaging

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

- Disposal considerations** : Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers. Empty containers must be scrapped or reconditioned. Dispose of containers contaminated by the product in accordance with local or national legal provisions.

- European waste catalogue (EWC)** : packaging containing residues of or contaminated by hazardous substances 15 01 10\*

- 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. 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

	ADR/RID	IMDG	IATA
<b>14.1 UN number</b>	UN1263	UN1263	UN1263
<b>14.2 UN proper shipping name</b>	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL
<b>14.3 Transport Hazard Class(es)/ Label(s)</b>	3 	3 	3 

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II

PU HARDENER FIRE RETARDANT -

TH0333/00

## SECTION 14: Transport information

14.4 Packing group	II	II	II
14.5 Environmental hazards	No.	No.	No.
Additional information	<u>Special provisions</u> 640 (C) <u>Tunnel code</u> D/E	<u>Emergency schedules</u> F-E, S-E	-

**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 applicable.

**Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.**

## SECTION 15: Regulatory information

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

**EU Regulation (EC) No. 1907/2006 (REACH)**

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

**Annex XIV**

None of the components are listed.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.

**Other EU regulations**

**VOC content (2010/75/EU)** : 76.6 w/w  
737 g/l

**Seveso Directive**

This product may add to the calculation for determining whether a site is within the scope of the Seveso Directive on major accident hazards.

**National regulations**

**15.2 Chemical Safety Assessment** : No Chemical Safety Assessment has been carried out.

**SECTION 16: Other information**

✔ Indicates information that has changed from previously issued version.

- Abbreviations and acronyms** : ATE = Acute Toxicity Estimate  
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
 DMEL = Derived Minimal Effect Level  
 DNEL = Derived No Effect Level  
 EUH statement = CLP-specific Hazard statement  
 PBT = Persistent, Bioaccumulative and Toxic  
 PNEC = Predicted No Effect Concentration  
 RRN = REACH Registration Number  
 vPvB = Very Persistent and Very Bioaccumulative  
 N/A = Not available
- Key literature references and sources for data** : Regulation (EC) No. 1272/2008 [CLP]  
 ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road  
 IATA = International Air Transport Association  
 IMDG = International Maritime Dangerous Goods  
 Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2015/830  
 Directive 2012/18/EU, and relative amendments & additions  
 Directive 2008/98/EC, and relative amendments & additions  
 Directive 2009/161/EU, and relative amendments & additions  
 CEPE Guidelines

**Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

Classification	Justification
Flam. Liq. 2, H225 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H336	On basis of test data Calculation method Calculation method Calculation method Calculation method

- Full text of abbreviated H statements** : H225 Highly flammable liquid and vapor.  
 H226 Flammable liquid and vapor.  
 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.  
 H351 Suspected of causing cancer.  
 H412 Harmful to aquatic life with long lasting effects.  
 EUH066 Repeated exposure may cause skin dryness or cracking.

- Full text of classifications [CLP/GHS]** : Acute Tox. 1 ACUTE TOXICITY - Category 1  
 Acute Tox. 4 ACUTE TOXICITY - Category 4  
 Aquatic Chronic 3 AQUATIC HAZARD (LONG-TERM) - Category 3  
 Carc. 2 CARCINOGENICITY - Category 2  
 Eye Irrit. 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  
 Flam. Liq. 2 FLAMMABLE LIQUIDS - Category 2  
 Flam. Liq. 3 FLAMMABLE LIQUIDS - Category 3  
 Resp. Sens. 1 RESPIRATORY SENSITIZATION - Category 1  
 Skin Irrit. 2 SKIN CORROSION/IRRITATION - Category 2  
 Skin Sens. 1 SKIN SENSITIZATION - Category 1  
 STOT SE 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 3

**Date of printing** : 20, Jul, 2020.

## SECTION 16: Other information

**Date of issue/ Date of revision** : 20, Jul, 2020

**Date of previous issue** : 08, Jun, 2020

: If there is no previous validation date please contact your supplier for more information.

**Version** : 9

### Notice to reader

*It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.*