Safety Data Sheet
Hempel's Curing Agent 97050

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Regulation (EU) No. 2020/878 - Austria / Germany

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

1.1 Product identifier

Product name : Hempel's Curing Agent 97050

Product identity : 9705000000, 00138849

Product type : Curing agent

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

Field of application : used only as part of two- or multi component products.

Ready-for-use mixture : (see base component)

Identified uses : Industrial applications, Professional applications, Used by spraying.

1.3 Details of the supplier of the safety data sheet

Company details :

Hempel (Germany) GmbH
Haderslebener Straße 9
25421 Pinneberg
Tel. (0 41 01) 70 70
Fax. (0 41 01) 70 71 31
hempel@hempel.com

1.4 Emergency telephone number

(0 41 01) 70 70 (08.00 - 17.00)
Austria: Vergiftungsinformationszentrale
+43 1 406 43 43 (24 hrs)
Switzerland: Swiss Toxicological Information Centre
+41 44 251 51 51 (in Switzerland dial 145) (24 hrs)

Date of issue : 6 March 2025

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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. 3, H226	FLAMMABLE LIQUIDS
Acute Tox. 4, H332	ACUTE TOXICITY (inhalation)
Skin Sens. 1, H317	SKIN SENSITIZATION
STOT SE 3, H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation)
Aquatic Chronic 3, H412	AQUATIC HAZARD (LONG-TERM)

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

2.2 Label elements

Hazard pictograms :

Signal word : Warning

Hazard statements :

H226 - Flammable liquid and vapor.
H317 - May cause an allergic skin reaction.
H332 - Harmful if inhaled.
H335 - May cause respiratory irritation.
H412 - 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.

Hazardous ingredients : hexamethylene-1,6-diisocyanate homopolymer
hexamethylene-di-isocyanate

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

Special packaging requirements

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

Tactile warning of danger : Not applicable.

2.3 Other hazards

SECTION 2: Hazards identification

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 Mixtures

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]		Type
hexamethylene-1,6-diisocyanate homopolymer	REACH #: 01-2119485796-17 EC: 500-060-2 CAS: 28182-81-2	≥75 - ≤90	Acute Tox. 4, H332 Skin Sens. 1, H317 STOT SE 3, H335	ATE [Inhalation (dusts and mists)] = 1.5 mg/l	[1]
Solvent naphtha (petroleum), light arom.	REACH #: 01-2119455851-35 EC: 918-668-5 CAS: 128601-23-0	≥5 - <10	Flam. Liq. 3, H226 STOT SE 3, H335 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 EUH066	-	[1]
n-butyl acetate	REACH #: 01-2119485493-29 EC: 204-658-1 CAS: 123-86-4 Index: 607-025-00-1	≥5 - <10	Flam. Liq. 3, H226 STOT SE 3, H336 EUH066	-	[1] [2]
hexamethylene-di-isocyanate	REACH #: 01-2119457571-37 EC: 212-485-8 CAS: 822-06-0 Index: 615-011-00-1	<0.1	Acute Tox. 4, H302 Acute Tox. 1, H330 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335 See Section 16 for the full text of the H statements declared above.	ATE [Oral] = 746 mg/kg ATE [Inhalation (vapours)] = 0.124 mg/l Resp. Sens. 1, H334: C ≥ 0.5% Skin Sens. 1, H317: C ≥ 0.5%	[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 and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit, see 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 breathing is irregular, drowsiness, loss of consciousness or cramps: Call 112 and give immediate treatment (first aid).

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. In all cases of doubt, or when symptoms persist, seek medical attention.

Inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. Give nothing by mouth. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately.

Skin contact : Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners. Remove contaminated clothing and shoes.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do not induce vomiting unless directed to do so by medical personnel. Lower the head so that vomit will not re-enter the mouth and throat.

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.

SECTION 4: First aid measures

Skin contact :	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
Ingestion :	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician :	If gasses have been inhaled, from the decomposition of the product, symptoms may be delayed. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments :	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Extinguishing media :	Recommended: alcohol resistant foam, CO_2, powders, water spray. Not to be used: waterjet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture :	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 combustion products :	Decomposition products may include the following materials: carbon oxides nitrogen oxides

5.3 Advice for firefighters

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. Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard. Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid all direct contact with the spilled material. Exclude sources of ignition and be aware of explosion hazard. Ventilate the area. Avoid breathing vapor or mist. Refer to protective measures listed in sections 7 and 8. No action shall be taken involving any personal risk or without suitable training. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

6.2 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.

6.3 Methods and materials for containment and cleaning up

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections

SECTION 6: Accidental release measures

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

7.1 Precautions for safe handling

Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air. 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 be used only in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. No sparking tools should be used. Contains isocyanates. Exposure to isocyanate may result in acute irritation and/or sensitisation when breathing.
Care should be taken when re-opening partly-used containers.

Avoid inhalation of vapour, dust and spray mist. Avoid contact with skin and eyes. Eating, drinking and smoking should be prohibited in area where this material is handled, stored and processed. Appropriate personal protective equipment: see Section 8. Always keep in containers made from the same material as the original one.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a cool, well-ventilated area away from incompatible materials and ignition sources. Keep out of the reach of children. Keep away from: Oxidizing agents, strong alkalis, strong acids as well as of amines, alcohols and water. No smoking. Prevent unauthorized access. Containers that are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

See separate Product Data Sheet for recommendations or industrial sector specific solutions.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
n-butyl acetate	**TRGS 900 OEL (Germany, 6/2024)** TWA 8 hours: 300 mg/m³. TWA 8 hours: 62 ppm. PEAK 15 minutes: 600 mg/m³. PEAK 15 minutes: 124 ppm. **DFG MAC-values list (Germany, 7/2023)** Develop C. TWA 8 hours: 100 ppm. PEAK 15 minutes: 200 ppm 4 times per shift [Interval: 1 hour]. TWA 8 hours: 480 mg/m³. PEAK 15 minutes: 960 mg/m³ 4 times per shift [Interval: 1 hour]. **EU OEL (Europe, 1/2022)** STEL 15 minutes: 150 ppm. STEL 15 minutes: 723 mg/m³. TWA 8 hours: 241 mg/m³. TWA 8 hours: 50 ppm.
hexamethylene-di-isocyanate	**TRGS 900 OEL (Germany, 6/2024)** Inhalation sensitizer. TWA 8 hours: 0.035 mg/m³. CEIL: 0.07 mg/m³. TWA 8 hours: 0.005 ppm. CEIL: 0.01 ppm. PEAK 15 minutes: 0.035 mg/m³. PEAK 15 minutes: 0.005 ppm. **DFG MAC-values list (Germany, 7/2023)** Develop D. Inhalation sensitizer , Skin sensitizer. TWA 8 hours: 0.005 ppm. CEIL: 0.01 ml/m³. TWA 8 hours: 0.035 mg/m³. CEIL: 0.07 mg/m³. PEAK 15 minutes: 0.035 mg/m³ 4 times per shift [Interval: 1 hour]. PEAK 15 minutes: 0.005 ppm 4 times per shift [Interval: 1 hour]. **EU OEL (Europe, 2/2010)** (ACGIH) TWA 8 hours: 0.03 mg/m³. (ACGIH) TWA 8 hours: 0.01 ppm.

SECTION 8: Exposure controls/personal protection

n-butyl acetate	**Regulation on Limit Values - MAC (Austria, 4/2021) [Butylacetat alle Isomeren außer tert-Butylacet]** CEIL: 480 mg/m³. CEIL: 100 ppm. TWA 8 hours: 241 mg/m³. TWA 8 hours: 50 ppm. **EU OEL (Europe, 1/2022)** STEL 15 minutes: 150 ppm. STEL 15 minutes: 723 mg/m³. TWA 8 hours: 241 mg/m³. TWA 8 hours: 50 ppm.
hexamethylene-di-isocyanate	**Regulation on Limit Values - MAC (Austria, 4/2021)** Inhalation sensitizer , Skin sensitizer. TWA 8 hours: 0.005 ppm. TWA 8 hours: 0.035 mg/m³. CEIL: 0.005 ppm. CEIL: 0.035 mg/m³. **EU OEL (Europe, 2/2010)** (ACGIH) TWA 8 hours: 0.03 mg/m³. (ACGIH) TWA 8 hours: 0.01 ppm.

Biological exposure indices

Product/ingredient name	Exposure limit values
hexamethylene-di-isocyanate	**DFG BEI-values list (Germany, 7/2023)** BEI: 15 µg/g creatinine, hexamethylenediamine (after hydrolysis) [in urine]. Sampling time: end of exposure or end of shift. **TRGS 903 - BEI Values (Germany, 2/2024)** BEI: 15 mg/g creatinine, hexamethylendiamine (after hydrolysis) [in urine]. Sampling time: end of exposure or end of shift.
hexamethylene-1,6-diisocyanate homopolymer	**VGU BEI (Austria, 9/2020) [isocyanate]** BEI Fitness: 10 µg/g Kreatinin, 4,4'-diaminodiphenylmethane [in urine]. Sampling time: one year.
hexamethylene-di-isocyanate	**VGU BEI (Austria, 9/2020) [isocyanate]** BEI Fitness: 10 µg/g Kreatinin, 4,4'-diaminodiphenylmethane [in urine]. Sampling time: one year.

Recommended monitoring procedures

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 (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.

Derived effect levels

Product/ingredient name	Type - Population - Exposure	Value	Effects
Solvent naphtha (petroleum), light arom.	DNEL - Workers - Long term - Dermal	12.5 mg/kg bw/day	Effects: Systemic
	DNEL - Workers - Long term - Inhalation	1.9 mg/m³	Effects: Systemic
n-butyl acetate	DNEL - Workers - Long term - Inhalation	300 mg/m³	Effects: Systemic
	DNEL - Workers - Long term - Dermal	11 mg/kg bw/day	Effects: Systemic
hexamethylene-di-isocyanate	DNEL - Workers - Long term - Inhalation	0.035 mg/m³	Effects: Systemic

Predicted effect concentrations

Product/ingredient name	Compartment Detail	Value
hexamethylene-1,6-diisocyanate homopolymer	Fresh water	0.127 mg/l
	Marine water	0.0127 mg/l
	Fresh water sediment	266700 mg/kg dwt
	Marine water sediment	26670 mg/kg dwt
	Soil	53182 mg/kg dwt
	Sewage Treatment Plant	88 mg/l
n-butyl acetate	Fresh water	0.18 mg/l
	Marine	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
hexamethylene-di-isocyanate	Fresh water	77.4 µg/l
	Marine	7.74 µg/l
	Fresh water sediment	13.34 mg/kg
	Marine water sediment	1.33 mg/kg

SECTION 8: Exposure controls/personal protection

	Soil Sewage Treatment Plant	2.6 mg/kg 8.42 mg/l

8.2 Exposure controls

Appropriate engineering controls

Arrange sufficient ventilation by local exhaust ventilation and good general ventilation to keep the airborne concentrations of vapors or dust lowest possible and below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Individual protection measures

General : Gloves must be worn for all work that may result in soiling. Apron/coveralls/protective clothing must be worn when soiling is so great that regular work clothes do not adequately protect skin against contact with the product. Safety eyewear should be used when there is a likelihood of exposure.
Where personal protection equipment is required this shall be chosen in accordance with German BGR regulations of the "Berufsgenossenschaften".

Hygiene measures : Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Hand protection : Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. The quality of the chemical-resistant protective gloves must be chosen as a function of the specific workplace concentrations and quantity of hazardous substances.

Since the actual work situation is unknown. Supplier of gloves should be contacted in order to find the appropriate type. Below listed glove(s) should be regarded as generic advice:

Recommended: Silver Shield / Barrier / 4H gloves, polyvinyl alcohol (PVA), Viton®, nitrile rubber (>0.3 mm)
May be used: neoprene rubber (>0.1 mm), butyl rubber (>0.5 mm), nitrile rubber (>0.1 mm)
Short term exposure: natural rubber (latex) (>0.4 mm), polyvinyl chloride (PVC), butyl rubber (>0.3 mm)

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved handling this product.
Wear suitable protective clothing. Always wear protective clothing when spraying.

Respiratory protection : When the product is applied by spraying and for continuous or prolonged work always wear an air-fed respirator e.g. hood with supply of fresh or compressed air or a full face, powered air purifying filter. 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 working areas have insufficient ventilation: When the product is applied by means that will not generate an aerosol such as, brush or roller wear half or totally covering mask equipped with gas filter of type A, when grinding use particle filter of type P. (EN140) Be sure to use an approved/certified respirator or equivalent. Dry sanding, flame cutting and/or welding of the dry paint film will give rise to dust and/or hazardous fumes. Wet sanding/flatting should be used wherever possible. If exposure cannot be avoided by the provision of local exhaust ventilation, suitable respiratory protective equipment should be 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

9.1 Information on basic physical and chemical properties

Physical state : Liquid.

Color : Transparent

Odor : Solvent-like

pH : Testing not relevant or not possible due to nature of the product.

Melting point/freezing point : Testing not relevant or not possible due to nature of the product.

Boiling point/boiling range : Testing not relevant or not possible due to nature of the product.

Flash point : Closed cup: 47°C (116.6°F)

Evaporation rate : Testing not relevant or not possible due to nature of the product.

SECTION 9: Physical and chemical properties

Flammability : Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and oxidizing materials.

Vapor pressure :

	Vapor Pressure at 20˚C			Vapor pressure at 50˚C		
Ingredient name	**mm Hg**	**kPa**	**Method**	**mm Hg**	**kPa**	**Method**
n-butyl acetate	11.25096	1.5	DIN EN 13016-2			

Vapor density : Not available.

Specific gravity : 1.13 g/cm³

Partition coefficient (LogKow) : Testing not relevant or not possible due to nature of the product.

Auto-ignition temperature :

Ingredient name	°C	°F	Method
Solvent naphtha (petroleum), light arom.	280 - 470	536 - 878	

Decomposition temperature : Testing not relevant or not possible due to nature of the product.

Viscosity : Aspiration hazard (H304) Not classified. Testing not relevant due to nature of the product.

Explosive properties : Slightly explosive in the presence of the following materials or conditions: open flames, sparks and static discharge.

Oxidizing properties : Testing not relevant or not possible due to nature of the product.

9.2 Other information

Solvent(s) % by weight : Weighted average: 10 %

Water % by weight : Weighted average: 0 %

VOC content : 114 g/l

TOC Content : Weighted average: 87 g/l

Solvent Gas : Weighted average: 0.024 m³/l

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

Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

10.5 Incompatible materials

Highly reactive or incompatible with the following materials: oxidizing materials.

10.6 Hazardous decomposition products

When exposed to high temperatures (i.e. in case of fire) harmful decomposition products may be formed:

Decomposition products may include the following materials: carbon oxides nitrogen oxides

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Exposure to component solvent vapor concentrations 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. Solvents may cause some of the above effects by absorption through the skin. Symptoms and signs include headaches, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. If splashed in the eyes, the liquid may cause irritation and reversible damage. Accidental swallowing may cause stomach pain. Chemical lung inflammation may occur if the product is taken into the lungs via vomiting.
Isocyanate containing products have characteristics that include producing acute irritation and/or sensitisation when breathing, subsequent asthmatic problems and lung contractions. Sensitised people can, as a result from this, show asthmatic symptoms with exposure to atmospheric concentrations far below the TLV. Repeated exposures will lead to permanent damage to the respiratory system.

Acute toxicity

Product/ingredient name	Result	Dose / Exposure	Effects
hexamethylene-1,6-diisocyanate homopolymer	Rat - Oral - LD50	>2500 mg/kg	
	Rat - Dermal - LD50	>2000 mg/kg	
	Rat - Inhalation - LC50 Dusts and mists	18500 mg/m³ [1 hours]	
	Rat - Inhalation - LC50 Dusts and mists	1.5 mg/l [4 hours]	
Solvent naphtha (petroleum), light arom.	Rat - Oral - LD50	3492 mg/kg	
	Rabbit - Dermal - LD50	3160 mg/kg	
	Rat - Inhalation - LC50 Vapor	6193 mg/m³ [4 hours]	
n-butyl acetate	Rat - Oral - LD50	10768 mg/kg	
	Rabbit - Dermal - LD50	>14112 mg/kg	
	Rat - Inhalation - LC50 Vapor	>21 mg/l [4 hours]	
hexamethylene-di-isocyanate	Rat - Oral - LD50	746 mg/kg	
	Rabbit - Dermal - LD50	>7000 mg/kg	
	Rat - Inhalation - LC50 Dusts and mists	124 mg/m³ [4 hours]	
	Rat - Inhalation - LC50 Vapor	0.124 mg/l [4 hours]	

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
Hempel's Curing Agent 97050					1.9
hexamethylene-1,6-diisocyanate homopolymer					1.5
Solvent naphtha (petroleum), light arom.	3492	3160			
n-butyl acetate	10768				
hexamethylene-di-isocyanate	746			0.124	

Irritation/Corrosion

Product/ingredient name	Result	Species	Exposure
hexamethylene-1,6-diisocyanate homopolymer	Rabbit - Skin - Mild irritant		
	Rabbit - Eyes - Mild irritant		
	Rabbit - Respiratory - Mild irritant		
Solvent naphtha (petroleum), light arom.	Rabbit - Eyes - Mild irritant	Duration of treatment/ exposure: 24 hours	Amount/concentration applied: 100 microliters
	Rabbit - Respiratory - Mild irritant		
	Rabbit - Skin - Moderate irritant		
n-butyl acetate	Rabbit - Skin - Moderate irritant	Duration of treatment/ exposure: 24 hours	Amount/concentration applied: 500 mg
	Rabbit - Eyes - Mild irritant		
	Rabbit - Respiratory - Mild irritant		
hexamethylene-di-isocyanate	Rabbit - Skin - Severe irritant		
	Rabbit - Eyes - Severe irritant		
	Rabbit - Respiratory - Severe irritant		

Sensitizer

Product/ingredient name	Species - Route of exposure	Result
hexamethylene-1,6-diisocyanate homopolymer	Guinea pig - skin	Result: Sensitizing
hexamethylene-di-isocyanate	Guinea pig - skin	Result: Sensitizing

Mutagenic effects

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No known data avaliable in our database.

Carcinogenicity

No known data avaliable in our database.

Reproductive toxicity

No known data avaliable in our database.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
hexamethylene-1,6-diisocyanate homopolymer Solvent naphtha (petroleum), light arom. n-butyl acetate	Category 3 Category 3 Category 3 Category 3		Respiratory tract irritation Respiratory tract irritation Narcotic effects Narcotic effects

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
No known data avaliable in our database.			

Aspiration hazard

Product/ingredient name	Result
Solvent naphtha (petroleum), light arom.	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential chronic health effects

No known significant effects or critical hazards.

11.2 Information on other hazards

Endocrine disrupting properties : The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

Other information : No additional known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Do not allow to enter drains or watercourses. Harmful to aquatic life with long lasting effects.

Product/ingredient name	Result	Species	Exposure
Solvent naphtha (petroleum), light arom.	Acute - LC50	Fish - *Oncorhynchus mykiss (rainbow trout)*	9.22 mg/l [96 hours]
	Acute - EC50	Algae - *Pseudokirchneriella subcapitata (green algae)*	2.6 mg/l [96 hours]
	Acute - EC50	Daphnia	3.2 mg/l [48 hours]
n-butyl acetate	Acute - EC50	Daphnia	44 mg/l [48 hours]
	Acute - EC50	Algae	648 mg/l [72 hours]

12.2 Persistence and degradability

Product/ingredient name	Test	Result
hexamethylene-1,6-diisocyanate homopolymer		1% [28 days] - Not readily
Solvent naphtha (petroleum), light arom.		>70% [28 days] - Readily
		>60% [28 days] - Readily
	OECD Ready Biodegradability - Manometric Respirometry Test	78% [28 days] - Readily
n-butyl acetate		90% [28 days] - Readily
	OECD Ready Biodegradability - Closed Bottle Test	80% [5 days] - Readily
hexamethylene-di-isocyanate		42% [28 days] - Not readily

SECTION 12: Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
hexamethylene-1,6-diisocyanate homopolymer			Not readily
Solvent naphtha (petroleum), light arom.			Readily
n-butyl acetate			Readily
hexamethylene-di-isocyanate			Not readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
hexamethylene-1,6-diisocyanate homopolymer	5.54	367.7	Low
Solvent naphtha (petroleum), light arom.	-	10 - 2500	High
n-butyl acetate	2.3	3.1	Low
hexamethylene-di-isocyanate	0.02	57.63	Low

12.4 Mobility in soil

Soil/Water partition coefficient

Product/ingredient name	logKoc	Koc
n-butyl acetate	1.52	33.2139
hexamethylene-di-isocyanate	1.38	23.8009

Results of PMT and vPvM assessment

Product/ingredient name	PMT	P	M	T	vPvM	vP	vM
hexamethylene-1,6-diisocyanate homopolymer	No	No	No	No	No	No	No
Solvent naphtha (petroleum), light arom.	No	No	No	No	No	No	No
n-butyl acetate	No	No	Yes	No	No	No	Yes
hexamethylene-di-isocyanate	No	No	Yes	No	No	No	Yes

Mobility : The product does not meet the criteria to be considered as a PMT or vPvM.

12.5 Results of PBT and vPvB assessment

Regulation (EC) No. 1907/2006 [REACH]

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
hexamethylene-1,6-diisocyanate homopolymer	No	No	No	No	No	No	No
Solvent naphtha (petroleum), light arom.	No	No	No	No	No	No	No
n-butyl acetate	No	No	No	No	No	No	No
hexamethylene-di-isocyanate	No	No	No	No	No	No	No

Regulation (EC) No. 1272/2008 [CLP]

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
hexamethylene-1,6-diisocyanate homopolymer	No	No	No	No	No	No	No
Solvent naphtha (petroleum), light arom.	No	No	No	No	No	No	No
n-butyl acetate	No	No	No	No	No	No	No
hexamethylene-di-isocyanate	No	No	No	No	No	No	No

Conclusion/Summary : The product does not meet the criteria to be considered as a PBT or vPvB.

12.6 Endocrine disrupting properties

The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Residues of the product is listed as hazardous waste. Dispose of according to all state and local applicable regulations. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Spillage, remains, discarded clothes and similar should be discarded in a fireproof container.

European waste catalogue no. (EWC) is given below.

European waste catalogue (EWC) : 08 01 11*

Packaging

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.

Empty containers or liners may retain some product residues.

SECTION 14: Transport information

Transport may take place according to national regulation or ADR for transport by road, RID for transport by train, IMDG for transport by sea, IATA for transport by air.

	14.1 UN / ID no.	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	14.5 Env*	Additional information
ADR/RID Class	UN1263	PAINT	3 	III	No.	**Tunnel code** (D/E)
IMDG Class	UN1263	PAINT	3 	III	No.	**Emergency schedules** F-E, S-E
IATA Class	UN1263	PAINT	3 	III	No.	-

PG* : Packing group
Env.* : Environmental hazards

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 Maritime transport in bulk according to IMO instruments

Not applicable.

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 - Substances of very high concern

Annex XIV

None of the components are listed.

Substances of very high concern

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

Seveso category This product is controlled under the Seveso III Directive.

Seveso category
P5c: Flammable liquids 2 and 3 not falling under P5a or P5b

National regulations

Austria

VbF class : A II
Very dangerous flammable liquid.

SECTION 15: Regulatory information

Limitation of the use of organic solvents :	Permitted.

Germany

Storage code :	3
Hazardous incident ordinance :	This product is controlled under the Germany Hazardous Incident Ordinance.
Hazard class for water :	2
Technical instruction on air quality control :	
AOX :	The product does not contain organically bound halogens which could lead to an AOX value in waste water.
References :	**Other Rules:** - BGR 190 (Rules for the use of respiratory protective equipment) - BGR 192 (Rules for the use of eye and face protection) - BGR 195 (Rules for the use of gloves)

Switzerland

VOC content :	10.1 % (w/w)

15.2 Chemical Safety Assessment

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SECTION 16: Other information

Abbreviations and acronyms :

ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
EUH statement = CLP-specific Hazard statement
RRN = REACH Registration Number
DNEL = Derived No Effect Level
PNEC = Predicted No Effect Concentration

Full text of abbreviated H statements :

H226	Flammable liquid and vapor.
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.
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 [CLP/GHS] :

Acute Tox. 1	ACUTE TOXICITY - Category 1
Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Chronic 2	AQUATIC HAZARD (LONG-TERM) - Category 2
Aquatic Chronic 3	AQUATIC HAZARD (LONG-TERM) - Category 3
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/ EYE IRRITATION - 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

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

Classification	Justification
FLAMMABLE LIQUIDS	On basis of test data
ACUTE TOXICITY (inhalation)	Calculation method
SKIN SENSITIZATION	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation)	Calculation method
AQUATIC HAZARD (LONG-TERM)	Calculation method

Notice to reader

Indicates information that has changed from previously issued version.

SECTION 16: Other information

The information contained in this safety data sheet is based on the present state of knowledge and EU and national legislation. It provides guidance on health, safety and environmental aspects for handling the product in a safe way and should not be construed as any guarantee of the technical preformance or suitability for particular applications.
It is always the duty of the user/employer to ascertain that the work is planned and carried out in accordance with the national regulations.