BOND + SEAL BEIGE - 300 ML

Version	Revision Date:	SDS Number:	Date of last issue: 15.11.2022
15.0	06.06.2023	10672655-00009	Date of first issue: 11.06.2010

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

1.1 Product identifier

Trade name	:	BOND + SEAL BEIGE - 300 ML
Product code	:	08901006
Unique Formula Identifier (UFI)	:	WN6C-H0GF-C00S-6QWG

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

Use of the Substance/Mixture	:	Adhesives, Sealant Professional use product
Recommended restrictions on use	:	May only be used by trained personnel.

1.3 Details of the supplier of the safety data sheet

Company	:	Adolf Wuerth GmbH & Co. KG Reinhold-Würth-Str. 12-17 74653 Künzelsau
Telephone	:	+49 794015 0
Telefax	:	+49 794015 10 00
E-mail address of person responsible for the SDS	:	isi@wuerth.com

1.4 Emergency telephone number

+49 (0)6132 – 84463

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Respiratory sensitisation, Category 1	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through prolonged or repeated exposure.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements : H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements :

Prevention:

P260 Do not breathe vapours.
P284 Wear respiratory protection.

Response:

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)
4,4'-Diphenylmethane diisocyanate
m-Tolylidene diisocyanate

Additional Labelling

EUH211 Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

"As from 24 August 2023 adequate training is required before industrial or professional use."

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).
Vapours may form explosive mixture with air.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Methylene-bis-4,1-(N-phenylene-N'-butylurea)	77703-56-1 416-600-4 01-0000016345-72	Aquatic Chronic 4; H413	>= 2,5 - < 10
Titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]	13463-67-7 236-675-5 022-006-00-2 01-2119489379-17	Carc. 2; H351	>= 1 - < 10
Xylene	1330-20-7 215-535-7 601-022-00-9 01-2119488216-32	Flam. Liq. 3; H226 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 STOT RE 2; H373 (Auditory system) Asp. Tox. 1; H304 Aquatic Chronic 3; H412 --- Acute toxicity estimate Acute inhalation toxicity (vapour): 11 mg/l Acute dermal toxicity: 1.100 mg/kg	>= 1 - < 2,5
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	64742-82-1 01-2119458049-33	Flam. Liq. 3; H226 STOT SE 3; H336 STOT RE 1; H372 (Central nervous system) Asp. Tox. 1; H304 Aquatic Chronic 2; H411 EUH066	>= 1 - < 2,5
4,4'-Diphenylmethane diisocyanate	101-68-8 202-966-0 615-005-00-9 01-2119457014-47	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1; H334	>= 0,1 - < 1

		Skin Sens. 1; H317 Carc. 2; H351 STOT SE 3; H335 STOT RE 2; H373 (Respiratory Tract) --- specific concentration limit Eye Irrit. 2; H319 >= 5 % STOT SE 3; H335 >= 5 % Skin Irrit. 2; H315 >= 5 % Resp. Sens. 1; H334 >= 0,1 %	
m-Tolylidene diisocyanate	26471-62-5 247-722-4 615-006-00-4 01-2119454791-34	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 --- specific concentration limit Resp. Sens. 1; H334 >= 0,1 % --- Acute toxicity estimate Acute inhalation toxicity (vapour): 0,24 mg/l	>= 0,0025 - < 0,025

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment

when the potential for exposure exists (see section 8).

If inhaled	:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
In case of skin contact	:	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
In case of eye contact	:	Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.
If swallowed	:	If swallowed, DO NOT induce vomiting. Get medical attention. Rinse mouth thoroughly with water.

4.2 Most important symptoms and effects, both acute and delayed

Risks	:	May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause damage to organs through prolonged or repeated exposure. Respiratory symptoms, including pulmonary edema, may be delayed. Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical Water spray in large fire situations
Unsuitable extinguishing media	:	High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Do not use a solid water stream as it may scatter and spread fire.

Flash back possible over considerable distance.
Vapours may form explosive mixtures with air.
Exposure to combustion products may be a hazard to health.
If the temperature rises there is danger of the vessels bursting due to the high vapor pressure.

Hazardous combustion products : Carbon oxides
Metal oxides
Nitrogen oxides (NOx)
Chlorine compounds

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Remove all sources of ignition.
Use personal protective equipment.
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

6.2 Environmental precautions

Environmental precautions : Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g. by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Non-sparking tools should be used.
Soak up with inert absorbent material.
Suppress (knock down) gases/vapours/mists with a water spray jet.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
Clean up remaining materials from spill with suitable absorbent.

After approximately one hour, transfer to waste container and do not seal, due to evolution of carbon dioxide.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures	:	See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
Local/Total ventilation	:	If sufficient ventilation is unavailable, use with local exhaust ventilation.
Advice on safe handling	:	Do not get on skin or clothing. Do not breathe vapours. Do not swallow. Avoid contact with eyes. Wash skin thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment Keep container tightly closed. Keep away from water. Protect from moisture. Already sensitised individuals, and those susceptible to asthma, allergies, chronic or recurrent respiratory disease, should consult their physician regarding working with respiratory irritants or sensitisers. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Do not eat, drink or smoke when using this product. Take care to prevent spills, waste and minimize release to the environment.
Hygiene measures	:	If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before re-use.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage	:	Keep in properly labelled containers. Store locked up. Protect

areas and containers : from moisture. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.

Advice on common storage : Do not store with the following product types:
Strong oxidizing agents
Self-reactive substances and mixtures
Organic peroxides
Explosives
Gases

Storage class (TRGS 510) : 10

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Polyvinyl chloride	9002-86-2	AGW (Inhalable fraction)	10 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 2;(II)			
		AGW (Alveolate fraction)	1,25 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 2;(II)			
Titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]	13463-67-7	AGW (Inhalable fraction)	10 mg/m3 (Titanium dioxide)	DE TRGS 900
	Peak-limit: excursion factor (category): 2;(II)			
		AGW (Alveolate fraction)	1,25 mg/m3 (Titanium dioxide)	DE TRGS 900
	Peak-limit: excursion factor (category): 2;(II)			
		BM (Alveolar dust fraction)	0,5 mg/m3	DE TRGS 527
Xylene	1330-20-7	TWA	50 ppm 221 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		STEL	100 ppm 442 mg/m3	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		AGW	50 ppm	DE TRGS

			220 mg/m3	900
	Peak-limit: excursion factor (category): 2;(II)			
	Further information: Skin absorption			
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	64742-82-1	AGW	300 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 2;(II)			
	Further information: Group exposure limit for hydrocarbon solvent mixtures			
		AGW	50 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 2;(II)			
	Further information: Group exposure limit for hydrocarbon solvent mixtures			
4,4'-Diphenylmethane diisocyanate	101-68-8	AGW (Vapour and aerosols)	0,05 mg/m3	TRGS 430
	Peak-limit: excursion factor (category): 1;=2=(I)			
	Further information: In well-founded cases also a momentary value can be established, that never can be exceeded. This substance will be indicated by = = in combination with an exceeding value., airway sensitizing substance			
		AGW (Vapour and aerosols, inhalable fraction)	0,05 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 1;=2=(I)			
	Further information: In well-found cases also a momentary value can be established, that never can be exceeded. This substance will be indicated by = = in combination with an exceeding value., Skin absorption, When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child, Substance sensitizing through the skin and respiratory system			
m-Tolylidene diisocyanate	26471-62-5	AGW	0,005 ppm 0,035 mg/m3	TRGS 430
	Peak-limit: excursion factor (category): 1;=4=(I)			
	Further information: In well-founded cases also a momentary value can be established, that never can be exceeded. This substance will be indicated by = = in combination with an exceeding value., airway sensitizing substance			
		AGW (Vapour and aerosols)	0,005 ppm 0,035 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 1;=4=(I)			
	Further information: In well-found cases also a momentary value can be established, that never can be exceeded. This substance will be indicated by = = in combination with an exceeding value., Substance sensitizing through the respiratory system			

Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
Xylene	1330-20-7	methylhippuric acid (all isomers): 2.000 mg/l (Urine)	Immediately after exposure or after working hours	TRGS 903

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich	Workers	Inhalation	Long-term systemic effects	5,29 mg/m3
	Workers	Skin contact	Long-term systemic effects	41,67 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	1,3 mg/m3
	Consumers	Skin contact	Long-term systemic effects	20,83 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	0,75 mg/kg bw/day
Xylene	Workers	Inhalation	Long-term systemic effects	221 mg/m3
	Workers	Inhalation	Acute systemic effects	442 mg/m3
	Workers	Inhalation	Long-term local effects	221 mg/m3
	Workers	Inhalation	Acute local effects	442 mg/m3
	Workers	Skin contact	Long-term systemic effects	212 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	65,3 mg/m3
	Consumers	Inhalation	Acute systemic effects	260 mg/m3
	Consumers	Inhalation	Long-term local effects	65,3 mg/m3
	Consumers	Inhalation	Acute local effects	260 mg/m3
	Consumers	Skin contact	Long-term systemic effects	125 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	12,5 mg/kg bw/day
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	Workers	Inhalation	Long-term systemic effects	330 mg/m3
	Workers	Skin contact	Long-term systemic effects	44 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	71 mg/m3
	Consumers	Skin contact	Long-term systemic effects	26 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	26 mg/kg bw/day
4,4'-Diphenylmethane diisocyanate	Workers	Inhalation	Long-term local effects	0,05 mg/m3
	Workers	Inhalation	Acute local effects	0,1 mg/m3
	Consumers	Inhalation	Long-term local ef-	0,025 mg/m3

			fects	
	Consumers	Inhalation	Acute local effects	0,05 mg/m3
Methylene-bis-4,1-(N-phenylene-N'-butylurea)	Workers	Inhalation	Long-term systemic effects	49,37 mg/m3
	Workers	Skin contact	Long-term systemic effects	140 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	7,4 mg/m3
	Consumers	Skin contact	Long-term systemic effects	50 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	5 mg/kg bw/day
m-Tolylidene diisocyanate	Workers	Inhalation	Long-term systemic effects	0,035 mg/m3
	Workers	Inhalation	Acute systemic effects	0,14 mg/m3
	Workers	Inhalation	Long-term local effects	0,035 mg/m3
	Workers	Inhalation	Acute local effects	0,14 mg/m3

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Xylene	Fresh water	0,327 mg/l
	Intermittent use/release	0,327 mg/l
	Marine water	0,327 mg/l
	Sewage treatment plant	6,58 mg/l
	Fresh water sediment	12,46 mg/kg dry weight (d.w.)
	Marine sediment	12,46 mg/kg dry weight (d.w.)
	Soil	2,31 mg/kg dry weight (d.w.)
4,4'-Diphenylmethane diisocyanate	Fresh water	1 mg/l
	Marine water	0,1 mg/l
	Intermittent use/release	10 mg/l
	Sewage treatment plant	1 mg/l
	Soil	1 mg/kg
Methylene-bis-4,1-(N-phenylene-N'-butylurea)	Fresh water	0,1 mg/l
	Freshwater - intermittent	1 mg/l
	Marine water	0,01 mg/l
	Sewage treatment plant	10 mg/l
	Fresh water sediment	76,36 mg/kg dry weight (d.w.)
	Marine sediment	7,636 mg/kg dry weight (d.w.)
	Soil	15,15 mg/kg dry weight (d.w.)
m-Tolylidene diisocyanate	Fresh water	0,0125 mg/l
	Marine water	0,00125 mg/l

	Intermittent use/release	0,125 mg/l
	Sewage treatment plant	1 mg/l
	Soil	1 mg/kg

8.2 Exposure controls

Engineering measures

Processing may form hazardous compounds (see section 10).
Ensure adequate ventilation, especially in confined areas.
Minimize workplace exposure concentrations.

Personal protective equipment

Eye/face protection : Wear the following personal protective equipment:
Safety glasses
Equipment should conform to DIN EN 166

Hand protection

Material : Viton®
Break through time : > 30 min
Glove thickness : 0,4 mm
Directive : Equipment should conform to DIN EN 374

Remarks : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.
Wear the following personal protective equipment:
If assessment demonstrates that there is a risk of explosive atmospheres or flash fires, use flame retardant antistatic protective clothing.
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
Equipment should conform to DIN EN 14387

Filter type : Combined particulates and organic vapour type (A-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : paste

Colour	:	beige
Odour	:	characteristic
Odour Threshold	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flammability (solid, gas)	:	Not applicable
Flammability (liquids)	:	Ignitable (see flash point)
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	76 °C
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
pH	:	substance/mixture is non-soluble (in water)
Viscosity		
Viscosity, kinematic	:	> 20,5 mm2/s (40 °C)
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	Not applicable
Vapour pressure	:	No data available
Density	:	ca. 1,26 g/cm³ (20 °C)
Relative vapour density	:	No data available
Particle characteristics		
Particle size	:	Not applicable

9.2 Other information

Explosives	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

Evaporation rate : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

Stable if used as directed. Follow precautionary advice and avoid incompatible materials and conditions.
Polymerises at high temperatures with evolution of carbon dioxide.

10.3 Possibility of hazardous reactions

Hazardous reactions : Combustible liquid.
Vapours may form explosive mixture with air.
Isocyanates react with many materials and the rate of reaction increases with temperature as well as increased contact; these reactions can become violent. Contact is increased by stirring or if the other material mixes with the isocyanate.
Exothermic reaction with acids, amines and alcohols
Reacts with water to form carbon dioxide and heat
Isocyanates are not soluble in water and sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea.
Hazardous decomposition products will be formed upon contact with water or humid air.

10.4 Conditions to avoid

Conditions to avoid : Exposure to moisture
Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Oxidizing agents
Acids
Bases
Water
Alcohols
Amines
Ammonia
Aluminium
Zinc
Brass
Tin
Copper
Galvanised metals
Humid air

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

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

Information on likely routes of exposure : Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

Not classified based on available information.

Product:

Acute inhalation toxicity : Acute toxicity estimate: > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 2.000 mg/kg
Method: Calculation method

Components:

Methylene-bis-4,1-(N-phenylene-N'-butylurea):

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 6,82 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Xylene:

Acute oral toxicity : LD50 (Rat): 3.523 mg/kg
Method: Directive 67/548/EEC, Annex V, B.1.

Acute inhalation toxicity : Acute toxicity estimate: 11 mg/l
Exposure time: 4 h

Test atmosphere: vapour
Method: Expert judgement
Remarks: Based on national or regional regulation.

Acute dermal toxicity : Acute toxicity estimate: 1.100 mg/kg
Method: Expert judgement
Remarks: Based on national or regional regulation.

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%):

Acute oral toxicity : LD50 (Rat): > 15.000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 13,1 mg/l
Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rat): > 3.400 mg/kg

4,4'-Diphenylmethane diisocyanate:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 2,24 mg/l
Exposure time: 1 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg
Remarks: Based on data from similar materials

m-Tolylidene diisocyanate:

Acute oral toxicity : LD50 (Rat, female): 4.130 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0,48 mg/l
Exposure time: 1 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): > 9.400 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Components:

Methylene-bis-4,1-(N-phenylene-N'-butylurea):

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

Titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:

Species : Rabbit
Result : No skin irritation

Xylene:

Species : Rabbit
Result : Skin irritation

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%):

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

Assessment : Repeated exposure may cause skin dryness or cracking.

4,4'-Diphenylmethane diisocyanate:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Skin irritation
Remarks : Based on data from similar materials

m-Tolylidene diisocyanate:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Components:

Methylene-bis-4,1-(N-phenylene-N'-butylurea):

Species : Rabbit
Method : OECD Test Guideline 405
Result : No eye irritation

Titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:

Species : Rabbit
Result : No eye irritation

Xylene:

Species : Rabbit
Result : Irritation to eyes, reversing within 21 days

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%):

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	No eye irritation

4,4'-Diphenylmethane diisocyanate:

Result	:	Irritation to eyes, reversing within 7 days
Remarks	:	Based on national or regional regulation.

m-Tolylidene diisocyanate:

Species	:	Rabbit
Result	:	Irritation to eyes, reversing within 21 days

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Components:

Methylene-bis-4,1-(N-phenylene-N'-butylurea):

Test Type	:	Maximisation Test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	negative

Titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:

Test Type	:	Local lymph node assay (LLNA)
Exposure routes	:	Skin contact
Species	:	Mouse
Result	:	negative

Xylene:

Test Type	:	Local lymph node assay (LLNA)
Exposure routes	:	Skin contact
Species	:	Mouse
Result	:	negative

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%):

Test Type	:	Maximisation Test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	negative

4,4'-Diphenylmethane diisocyanate:

Test Type	:	Buehler Test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Result	:	positive
Assessment	:	Probability or evidence of skin sensitisation in humans
Exposure routes	:	Inhalation
Species	:	Rat
Result	:	positive
Remarks	:	Based on data from similar materials
Assessment	:	Probability of respiratory sensitisation in humans based on animal testing

m-Tolylidene diisocyanate:

Test Type	:	Local lymph node assay (LLNA)
Exposure routes	:	Skin contact
Species	:	Mouse
Result	:	positive
Assessment	:	Probability or evidence of skin sensitisation in humans
Exposure routes	:	inhalation (vapour)
Species	:	Guinea pig
Result	:	positive
Assessment	:	Probability of respiratory sensitisation in humans based on animal testing

Germ cell mutagenicity

Not classified based on available information.

Components:

Methylene-bis-4,1-(N-phenylene-N'-butylurea):

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: negative
Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Rat

Application Route: Skin contact
Method: OECD Test Guideline 474
Result: negative

Titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse
Result: negative

Xylene:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Test Type: Chromosome aberration test in vitro
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Result: negative

Test Type: In vitro sister chromatid exchange assay in mammalian cells
Result: negative

Genotoxicity in vivo : Test Type: Rodent dominant lethal test (germ cell) (in vivo)
Species: Mouse
Application Route: Skin contact
Result: negative

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%):

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Result: negative

Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

4,4'-Diphenylmethane diisocyanate:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Rat Application Route: inhalation (dust/mist/fume) Method: OECD Test Guideline 474 Result: negative

m-Tolylidene diisocyanate:

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: positive
Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Rat Application Route: inhalation (vapour) Result: negative

Carcinogenicity

Not classified based on available information.

Components:

Titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:

Species	:	Rat
Application Route	:	inhalation (dust/mist/fume)
Exposure time	:	2 Years
Method	:	OECD Test Guideline 453
Result	:	positive
Remarks	:	The mechanism or mode of action may not be relevant in humans.
Carcinogenicity - Assessment	:	Limited evidence of carcinogenicity in inhalation studies with animals.

Xylene:

Species	:	Rat
Application Route	:	Ingestion
Exposure time	:	103 weeks
Result	:	negative

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%):

Species	:	Rat
Application Route	:	inhalation (vapour)
Exposure time	:	105 weeks
Result	:	negative
Remarks	:	Based on data from similar materials

4,4'-Diphenylmethane diisocyanate:

Species	:	Rat
Application Route	:	inhalation (dust/mist/fume)
Exposure time	:	2 Years
Result	:	positive
Remarks	:	Based on data from similar materials
Carcinogenicity - Assessment	:	Limited evidence of carcinogenicity in animal studies

m-Tolylidene diisocyanate:

Carcinogenicity - Assessment	:	Limited evidence of carcinogenicity in animal studies

Reproductive toxicity

Not classified based on available information.

Components:

Methylene-bis-4,1-(N-phenylene-N'-butylurea):

Effects on fertility	:	Test Type: One-generation reproduction toxicity study Species: Rat Application Route: Ingestion Method: OECD Test Guideline 415 Result: negative
Effects on foetal development	:	Test Type: Embryo-foetal development Species: Rabbit Application Route: Ingestion Method: OECD Test Guideline 414 Result: negative

Xylene:

Effects on fertility	:	Test Type: One-generation reproduction toxicity study Species: Rat Application Route: inhalation (vapour) Result: negative
Effects on foetal development	:	Test Type: Embryo-foetal development Species: Rat Application Route: inhalation (vapour) Result: negative

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%):

Effects on fertility	:	Test Type: One-generation reproduction toxicity study Species: Rat Application Route: inhalation (vapour) Result: negative Remarks: Based on data from similar materials

Effects on foetal development	:	Test Type: Embryo-foetal development Species: Rat Application Route: inhalation (vapour) Result: negative

4,4'-Diphenylmethane diisocyanate:

Effects on foetal development	:	Test Type: Embryo-foetal development Species: Rat Application Route: inhalation (dust/mist/fume) Result: negative Remarks: Based on data from similar materials

m-Tolylidene diisocyanate:

Effects on fertility	:	Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: inhalation (vapour) Result: negative
Effects on foetal development	:	Test Type: Fertility/early embryonic development Species: Rat Application Route: inhalation (vapour) Result: negative

STOT - single exposure

Not classified based on available information.

Components:

Xylene:

Assessment	:	May cause respiratory irritation.

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%):

Assessment	:	May cause drowsiness or dizziness.

4,4'-Diphenylmethane diisocyanate:

Assessment	:	May cause respiratory irritation.

m-Tolylidene diisocyanate:

Assessment	:	May cause respiratory irritation.

STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Components:

Xylene:

Exposure routes	:	inhalation (vapour)
Target Organs	:	Auditory system

Assessment : Shown to produce significant health effects in animals at concentrations of >0.2 to 1 mg/l/6h/d.

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%):

Exposure routes : Inhalation
Target Organs : Central nervous system
Assessment : Causes damage to organs through prolonged or repeated exposure.

4,4'-Diphenylmethane diisocyanate:

Exposure routes : inhalation (dust/mist/fume)
Target Organs : Respiratory Tract
Assessment : Shown to produce significant health effects in animals at concentrations of >0.02 to 0.2 mg/l/6h/d.

Repeated dose toxicity

Components:

Methylene-bis-4,1-(N-phenylene-N'-butylurea):

Species : Rat
NOAEL : >= 1.000 mg/kg
Application Route : Ingestion
Exposure time : 28 Days
Method : OECD Test Guideline 407

Titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:

Species : Rat
NOAEL : 24.000 mg/kg
Application Route : Ingestion
Exposure time : 28 Days

Species : Rat
NOAEL : 10 mg/m3
Application Route : inhalation (dust/mist/fume)
Exposure time : 2 yr

Xylene:

Species : Rat
LOAEL : > 0,2 - 1 mg/l
Application Route : inhalation (vapour)
Exposure time : 13 Weeks
Remarks : Based on data from similar materials

Species : Rat
LOAEL : 150 mg/kg
Application Route : Ingestion
Exposure time : 90 Days

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%):

Species	:	Rat
NOAEL	:	1.056 mg/kg
Application Route	:	Ingestion
Exposure time	:	90 Days

Species	:	Rat
NOAEL	:	3,950 mg/l
LOAEL	:	7,400 mg/l
Application Route	:	Inhalation
Exposure time	:	90 Days

4,4'-Diphenylmethane diisocyanate:

Species	:	Rat
NOAEL	:	0,2 mg/m3
LOAEL	:	1 mg/m3
Application Route	:	inhalation (dust/mist/fume)
Exposure time	:	2 yr
Remarks	:	Based on data from similar materials

m-Tolylidene diisocyanate:

Species	:	Rat, female
LOAEL	:	0,000362 mg/l
Application Route	:	inhalation (vapour)
Exposure time	:	113 Weeks

Aspiration toxicity

Not classified based on available information.

Components:

Xylene:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%):

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Experience with human exposure

Components:

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%):

Inhalation : Symptoms: central nervous system effects

SECTION 12: Ecological information

12.1 Toxicity

Components:

Methylene-bis-4,1-(N-phenylene-N'-butylurea):

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): > 250 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EL50 (Desmodesmus subspicatus (green algae)): > 100 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 NOELR (Desmodesmus subspicatus (green algae)): 100 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201
Toxicity to microorganisms	:	NOEC (activated sludge): 100 mg/l Exposure time: 3 h Method: OECD Test Guideline 209

Titanium dioxide; [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Skeletonema costatum (marine diatom)): > 10.000 mg/l Exposure time: 72 h
Toxicity to microorganisms	:	EC50 : > 1.000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209

Xylene:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 13,5 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l Exposure time: 24 h Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	:	EC50 (Skeletonema costatum (marine diatom)): 10 mg/l Exposure time: 72 h
Toxicity to microorganisms	:	NOEC : > 100 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 Remarks: Based on data from similar materials
Toxicity to fish (Chronic toxicity)	:	NOEC: > 0,1 - < 1 mg/l Exposure time: 35 d Species: Danio rerio (zebra fish) Method: OECD Test Guideline 210 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	EL10: > 1 - 10 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211 Remarks: Based on data from similar materials

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%):

Toxicity to fish	:	LL50 (Oncorhynchus mykiss (rainbow trout)): > 10 - 30 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EL50 (Daphnia magna (Water flea)): > 10 - 22 mg/l Exposure time: 48 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EL50 (Pseudokirchneriella subcapitata (green algae)): 4,1 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 NOELR (Pseudokirchneriella subcapitata (green algae)): 0,76 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,097 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test substance: Water Accommodated Fraction Method: OECD Test Guideline 211 Remarks: Based on data from similar materials

4,4'-Diphenylmethane diisocyanate:

Toxicity to fish	:	LC50 (Oryzias latipes (Orange-red killifish)): > 3.000 mg/l Exposure time: 96 h Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 129,7 mg/l Exposure time: 24 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): > 1.640 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials NOEC (Desmodesmus subspicatus (green algae)): 1.640 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
Toxicity to microorganisms	:	EC50 : > 100 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 10 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211 Remarks: Based on data from similar materials

m-Tolylidene diisocyanate:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 133 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Mysidopsis bahia (opossum shrimp)): 18,3 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Chlorella vulgaris (Fresh water algae)): 4.300 mg/l Exposure time: 96 h Method: OECD Test Guideline 201
Toxicity to microorganisms	:	EC50 : > 100 mg/l

Exposure time: 3 h
Method: OECD Test Guideline 209

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 1,1 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

Ecotoxicology Assessment

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

12.2 Persistence and degradability

Components:

Methylene-bis-4,1-(N-phenylene-N'-butylurea):

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 11 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Xylene:

Biodegradability : Result: Readily biodegradable.
Biodegradation: > 70 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Remarks: Based on data from similar materials

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%):

Biodegradability : Result: Readily biodegradable.
Biodegradation: 75,9 %
Exposure time: 31 d
Method: OECD Test Guideline 301F
Remarks: Based on data from similar materials

4,4'-Diphenylmethane diisocyanate:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 302
Remarks: Based on data from similar materials

m-Tolylidene diisocyanate:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d

Stability in water : Degradation half life (DT50): 30 s

12.3 Bioaccumulative potential

Components:

Methylene-bis-4,1-(N-phenylene-N'-butylurea):

Partition coefficient: n-octanol/water : log Pow: 5,5
Method: OECD Test Guideline 107

Xylene:

Partition coefficient: n-octanol/water : log Pow: 3,16
Remarks: Calculation

Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%):

Partition coefficient: n-octanol/water : Pow: > 4

4,4'-Diphenylmethane diisocyanate:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 200

Partition coefficient: n-octanol/water : log Pow: 4,51

m-Tolylidene diisocyanate:

Partition coefficient: n-octanol/water : log Pow: 3,43

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	Dispose of in accordance with local regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities. Do not dispose of waste into sewer.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal. Empty containers retain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death. If not otherwise specified: Dispose of as unused product.
Waste Code	:	The following Waste Codes are only suggestions: used product 08 05 01, waste isocyanates unused product 08 05 01, waste isocyanates uncleaned packagings 15 01 10, packaging containing residues of or contaminated by hazardous substances Acc. Packaging Act properly emptied packaging: Properly emptied, non-contaminated packaging of non-hazardous products can be supplied to a system for the collection of sales packaging.

SECTION 14: Transport information

14.1 UN number or ID number

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.2 UN proper shipping name

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.3 Transport hazard class(es)

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.4 Packing group

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA (Cargo)	:	Not regulated as a dangerous good
IATA (Passenger)	:	Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 75, 3
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)		If you intend to use this product as tattoo ink, please contact your vendor. 4,4'-Diphenylmethane diisocyanate

(Number on list 74, 56)
1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich (Number on list 52)
m-Tolylidene diisocyanate (Number on list 74)

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

Water hazard class (Germany) : WGK 1 slightly hazardous to water
Classification according to AwSV, Annex 1 (5.2)

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
Volatile organic compounds (VOC) content: 3,42 %, 43,6 g/l
Remarks: VOC content excluding water

Other regulations:

TRGS 430 (German regulatory requirements)

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

Take note of Law on the protection of mothers at work, in education and in studies (Maternity Protection Act - MuSchG).

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Other information : Items where changes have been made to the previous version are highlighted in the body of this document by two vertical

lines.

Full text of H-Statements

H226	:	Flammable liquid and vapour.
H304	:	May be fatal if swallowed and enters airways.
H312	:	Harmful in contact with skin.
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.
H351	:	Suspected of causing cancer if inhaled.
H372	:	Causes damage to organs through prolonged or repeated exposure.
H373	:	May cause damage to organs through prolonged or repeated exposure.
H373	:	May cause damage to organs through prolonged or repeated exposure if inhaled.
H411	:	Toxic to aquatic life with long lasting effects.
H412	:	Harmful to aquatic life with long lasting effects.
H413	:	May cause long lasting harmful effects to aquatic life.
EUH066	:	Repeated exposure may cause skin dryness or cracking.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Asp. Tox.	:	Aspiration hazard
Carc.	:	Carcinogenicity
Eye Irrit.	:	Eye irritation
Flam. Liq.	:	Flammable liquids
Resp. Sens.	:	Respiratory sensitisation
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation
STOT RE	:	Specific target organ toxicity - repeated exposure
STOT SE	:	Specific target organ toxicity - single exposure
2000/39/EC	:	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
DE TRGS 527	:	Germany. TRGS 527 - Activities with nanomaterials
DE TRGS 900	:	Germany. TRGS 900 - Occupational exposure limit values.
TRGS 430	:	Germany. TRGS 430 - Isocyanates
TRGS 903	:	TRGS 903 - Biological limit values
2000/39/EC / TWA	:	Limit Value - eight hours
2000/39/EC / STEL	:	Short term exposure limit
DE TRGS 527 / BM	:	Assessment scale
DE TRGS 900 / AGW	:	Time Weighted Average
TRGS 430 / AGW	:	Occupational Exposure Limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Training advice	:	Observe requirements and guidance related to training before using this product at work.
Sources of key data used to compile the Safety Data Sheet	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/

Classification of the mixture:		**Classification procedure:**
Resp. Sens. 1	H334	Calculation method
STOT RE 2	H373	Calculation method

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS mate-

rial is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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