

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Trade Name	Tankfix
Supplier	Wagner Spezialschmierstoffe GmbH & Co. KG Speckbrodi 8, D – 86759 Wechingen Tel. +49 (0)9085-96009-0 E-mail: wagner@wagner-german-oil.com www.wagner-german-oil.com
Commissioning Dept.	Product Safety Tel. +49 9085-96009-10
Emergency telephone no. supplier Information Centre Specialising in Symptoms of Poisoning	Tel. +49 (0)9085 96009-0 (8:30 - 16:30) (Deutschland) +43 1 406 43 43 (Österreich)

1.1 Application of the substance / the preparation

Primers, one-pack performance coating

2. HAZARDS IDENTIFICATION

2.1 Classification according to Regulation (EC) No 1272/2008

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 3	H226: Flammable liquid and vapour.
Acute toxicity, Category 4	H332: Harmful if inhaled.
Skin irritation, Category 2	H315: Causes skin irritation.
Eye irritation, Category 2	H319: Causes serious eye irritation.
Respiratory sensitisation, Category 1	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Carcinogenicity, Category 2	H351: Suspected of causing cancer.
Specific target organ toxicity - single exposure, Category 3, Respiratory system	H335: May cause respiratory irritation.
Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through pro-longed or repeated exposure.
Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.
Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word

Danger

Hazard statements

H226 Flammable liquid and vapour.
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.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects

Precautionary statements

Prevention

P201 Obtain special instructions before use.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P271 Use only outdoors or in a well-ventilated area.

Sicherheitsdatenblatt gemäß Verordnung (EG) 2015/830

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Seite 2 von 17

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.

P331 Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if pre-sent and easy to do. Continue rinsing.

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

Hazardous components which must be listed on the label

Isocyanic acid, polymethylenepolyphenylene ester, polymer with 1,2-ethanediamine, methyloxirane and 1,2-propanediol

Additional Labelling

EUH204 Contains isocyanates. May produce an allergic reaction.

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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

Chemical nature

Mixture contains: Isocyanates

Components

Chemical name	CAS-No. EC-No. INDEX-No. Registration no.	Classification	Concentration (% w/w)
Isocyanic acid, polymethylenepol-yphenylene ester, polymer with 1,2-ethanediamine, methyloxirane and 1,2-propanediol	67815-87-6	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335 STOT RE 2; H373	>= 30 - < 50
Reaction mass of ethylbenzene and xylene	Not Assigned 905-588-0 01-2119486136-34	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 Asp. Tox. 1; H304	>= 20 - < 30
Diphenylmethanediisocyanate, isomeres and homologues	9016-87-9	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1B; H334 Skin Sens. 1B; H317 Carc. 2; H351 STOT SE 3; H335 STOT RE 2; H373	>= 10 - < 20

Chemical name	CAS-No. EC-No. INDEX-No. Registration no.	Classification	Concentration (% w/w)
Hydrocarbons, C9, Aromatics	64742-95-6 918-668-5 01-2119455851-35	Flam. Liq. 3; H226 STOT SE 3; H336 STOT SE 3; H335 Asp. Tox. 1; H304	>= 10 - < 20

		Aquatic Chronic 2; H411	
4,4'-methyldiphenyl 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 Skin Sens. 1; H317 Carc. 2; H351 STOT SE 3; H335 STOT RE 2; H373	>= 1 - < 5
o-(p-isocyanatobenzyl)phenyl isocyanate	5873-54-1 227-534-9 615-005-00-9 01-2119480143-45	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 Carc. 2; H351 STOT SE 3; H335 STOT RE 2; H373	>= 1 - < 5

For explanation of abbreviations see section 16.

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. Move out of dangerous area. Take off contaminated clothing and shoes immediately. Do not leave the victim unattended. Symptoms of poisoning may appear several hours later. Show this safety data sheet to the doctor in attendance.

PROTECTION OF FIRST-AIDERS

First Aid responders should pay attention to self-protection and use the recommended protective clothing.

INHALATION

Move to fresh air. Keep patient warm and at rest. If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.

SKIN CONTACT

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician if irritation develops or persists.

EYE CONTACT

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. If easy to do, remove contact lens, if worn. Consult a physician.

AFTER SWALLOWING

Rinse mouth with water. Do NOT induce vomiting. Call a physician immediately. Aspiration hazard if swallowed - can enter lungs and cause damage.

4.2 Most important symptoms and effects, both acute and delayed

May be fatal if swallowed and enters airways. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Keep under medical supervision for at least 48 hours.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media

Carbon dioxide (CO₂), dry powder, alcohol-resistant foam, water spray in large fire situations, water spray jet.

Extinguishing Media to Avoid

High volume water jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting

Build-up of dangerous/toxic fumes possible in cases of fire/high temperature. If the temperature rises there is danger of the vessels bursting due to the high vapor pressure. Cool closed containers exposed to fire with water spray.

Hazardous combustion products

Hazardous decomposition products due to incomplete combustion:

Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke). Isocyanates.

5.3 Advice for firefighters

Special Protective Equipment

In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. Complete suit protecting against chemicals

Additional Information

Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear personal protective equipment. Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Remove all sources of ignition. Do not smoke. Avoid contact with skin, eyes and clothing. Sweep up to prevent slipping hazard. In the case of vapour formation use a respirator with an approved filter.

6.2 Environmental precautions

Do not flush into surface water or sanitary sewer system. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). After approximately one hour, transfer to waste container and do not seal, due to evolution of carbon dioxide. Waste must NOT be included in a tight way.

6.4 Reference to other sections

For personal protection see section 8. For disposal considerations see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Precautions for safe handling

Provide adequate information, instruction and training for operators. All processes must be supervised by specialists or authorised personnel. Keep container closed when not in use. Provide sufficient air exchange and/or exhaust in work rooms. Avoid exceeding the given occupational exposure limits (see section 8). Do not breathe vapours or spray mist. During spraying, wear suitable respiratory equipment. For personal protection see section 8.

Precautions in case of fire and explosion

Vapours may form explosive mixtures with air. Keep away from open flames, hot surfaces and sources of ignition. Do not smoke. Take measures to prevent the build-up of electrostatic charge. Use explosion-proof equipment.

Hygiene measures

Persons already sensitised to diisocyanates may develop allergic reactions when using this product. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Store in original container. Keep container tightly closed. Keep away from heat and sources of ignition. Keep away from direct sunlight. Protect from moisture.

Further information on storage conditions

Keep locked up or in an area accessible only to qualified or authorised persons.

Advice on common storage

Keep away from food and drink.

7.3 Specific end use(s)

No data available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (form of exposure)	Control parameters	Basis
Diphenylmethanediiisocyanate, isomeres and homologues	9016-87-9	TWA	0.02 mg/m ³ (NCO)	GB EH40

Further information	<p>Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even in tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance those who are likely to become hyper-responsive. Substances that can cause occupational asthma should be distinguished from substances which may trigger the symptoms of asthma in people with pre-existing airway hyper-responsiveness, but which do not include the disease themselves. The latter substances are not classified as asthmagens or respiratory sensitisers. Further information can be found in the HSE publication Asthmagen? Critical assessments of the evidence for agents implicated in occupational asthma., Wherever it is reasonably practicable, exposure to substances that can cause occupational asthma should be pre-vented. Where this is not possible, the primary aim is to apply adequate standards of control to prevent workers from becoming hyper-responsive. For substances that can cause occupational asthma, COSHH requires that expo-sure be reduced to as low as is reasonably practicable. Activities giving rise to short-term peak concentrations should receive particular attention when risk management is being considered. Health surveillance is appropriate for all employees exposed or liable to be exposed to a substance which may cause occupational asthma and there should be appropriate consultation with an occupational health professional over the degree of risk and level of surveillance., Capable of causing occupational asthma., The 'Sen' notation in the list of WELs has been assigned only to those substances which may cause occupational asthma in the categories shown in Table 1. It should be remembered that other substances not in these tables may cause occupational asthma. HSE's asthma web pages (www.hse.gov.uk/asthma) provide further information.</p>			
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	STEL	0.07 mg/m ³ (NCO)	GB EH40
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Further information	<p>Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even in tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance those who are likely to become hyper-responsive. Substances that can cause occupational asthma should be distinguished from substances which may trigger the symptoms of asthma in people with pre-existing airway hyper-responsiveness, but which do not include the disease themselves. The latter substances are not classified as asthmagens or respiratory sensitisers. Further information can be found in the HSE publication Asthmagen? Critical assessments of the evidence for agents implicated in occupational asthma., Wherever it is reasonably practicable, exposure to substances that can cause occupational asthma should be pre-vented. Where this is not possible, the primary aim is to apply adequate standards of control to prevent workers from becoming hyper-responsive. For substances that can cause occupational asthma, COSHH requires that expo-sure be reduced to as low as is reasonably practicable. Activities giving rise to short-term peak concentrations should receive particular attention when risk management is being considered. Health surveillance is appropriate for all employees exposed or liable to be exposed to a substance which may cause occupational asthma and there should be appropriate consultation with an occupational health professional over the degree of risk and level of surveillance., Capable of causing occupational asthma., The 'Sen' notation in the list of WELs has been assigned only to those substances which may cause occupational asthma in the categories shown in Table 1. It should be remembered that other substances not in these tables may cause occupational asthma. HSE's asthma web pages (www.hse.gov.uk/asthma) provide further information.</p>			
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Components	CAS-No.	Value type (form of exposure)	Control parameters	Basis
4,4'-methylenediphenyl diisocyanate	101-68-8	TWA	0.02 mg/m ³ (NCO)	GB EH40

Further information	<p>Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even in tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance those who are likely to become hyper-responsive. Substances that can cause occupational asthma should be distinguished from substances which may trigger the symptoms of asthma in people with pre-existing airway hyper-responsiveness, but which do not include the disease themselves. The latter substances are not classified as asthmagens or respiratory sensitisers. Further information can be found in the HSE publication Asthmagen? Critical assessments of the evidence for agents implicated in occupational</p>			
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Seite 6 von 17

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	STEL 0.07 mg/m ³ (NCO) GB EH40
Further information	Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even in tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is im-possible to identify in advance those who are likely to become hyper-responsive. Substances that can cause occupational asthma should be dis-tinguished from substances which may trigger the symptoms of asthma in people with pre-existing airway hyper-responsiveness, but which do not include the disease themselves. The latter substances are not classified as asthmagens or respiratory sensitisers. Further information can be found in the HSE publication Asthmagen? Critical assessments of the evidence for agents implicated in occupational asthma., Wherever it is reasonably practicable, exposure to substances that can cause occupational asthma should be pre-vented. Where this is not possible, the primary aim is to apply adequate standards of control to prevent workers from becoming hyper-responsive. For substances that can cause occupational asthma, COSHH requires that expo-sure be reduced to as low as is reasonably practicable. Activities giving rise to short-term peak concentrations should receive particular attention when risk management is being considered. Health surveillance is appropriate for all employees exposed or liable to be exposed to a substance which may cause occupational asthma and there should be appropriate consultation with an occupational health professional over the degree of risk and level of surveillance., Capable of causing occupational asthma., The 'Sen' notation in the list of WELs has been assigned only to those substances which may cause occupational asthma in the categories shown in Table 1. It should be remembered that other substances not in these tables may cause occupational asthma. HSE's asthma web pages (www.hse.gov.uk/asthma) provide further information.

Components	CAS-No.	Value type (form of exposure)	Control parameters	Basis
o-(p-isocyanatoben-zy)phenyl isocya-nate	5873-54-1	TWA	0.02 mg/m ³ (NCO)	GB EH40
Further information	Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even in tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance those who are likely to become hyper-responsive. Substances that can cause occupational asthma should be distinguished from substances which may trigger the symptoms of asthma in people with pre-existing airway hyper-responsiveness, but which do not include the disease themselves. The latter substances are not classified as asthmagens or respiratory sensitisers. Further information can be found in the HSE publication Asthmagen? Critical assessments of the evidence for agents implicated in occupational asthma., Wherever it is reasonably practicable, exposure to substances that can cause occupational asthma should be pre-vented. Where this is not possible, the primary aim is to apply adequate standards of control to prevent workers from becoming hyper-responsive. For substances that can cause occupational asthma, COSHH requires that expo-sure be reduced to as low as is reasonably practicable. Activities giving rise to short-term peak concentrations should receive particular attention when risk management is being considered. Health surveillance is appropriate for all employees exposed or liable to be exposed to a substance which may cause occupational asthma and there should be appropriate consultation with an occupational health professional over the degree of risk and level of surveillance., Capable of causing occupational asthma., The 'Sen' notation in the list of WELs has been assigned only to those substances which may cause occupational asthma in the categories shown in Table 1. It should be remembered that other substances not in these tables may cause occupational asthma. HSE's asthma web pages (www.hse.gov.uk/asthma) provide further information.			
	STEL	0.07 mg/m ³ (NCO)	GB EH40	
Further information	Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even in tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance those who are likely to become			

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Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
Diphenylmethanediisocyanate, isomeres and homologues	9016-87-9	isocyanate-derived diamine (Isocyanates): 1 µmol/mol creatinine (Urine)	At the end of the period of exposure	GB EH40 BAT
4,4'-methylenediphenyl diisocyanate	101-68-8	urinary diamine (Isocyanates): 1 µmol/mol creatinine (Urine)	Post task	GB EH40 BAT
o-(p-isocyanatobenzyl)phenyl isocyanate	5873-54-1	isocyanate-derived diamine (Isocyanates): 1 µmol/mol creatinine (Urine)	At the end of the period of exposure	GB EH40 BAT

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

Substance name	End use	Exposure routes	Potential health effects	Value
4,4'-methylenediphenyl diisocyanate	Workers	Inhalation	Long-term local effects	0.05 mg/m ³
	Workers	Inhalation	Acute local effects	0.1 mg/m ³
	Consumers	Inhalation	Long-term local effects	0.025 mg/m ³
	Consumers	Inhalation	Acute local effects	0.05 mg/m ³
o-(p-isocyanatobenzyl)phenyl isocyanate	Workers	Inhalation	Long-term local effects	0.05 mg/m ³
	Workers	Inhalation	Acute local effects	0.1 mg/m ³
	Consumers	Inhalation	Long-term local effects	0.025 mg/m ³
	Consumers	Inhalation	Acute local effects	0.05 mg/m ³

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

Substance name	Environmental Compartment	Value
4,4'-methylenediphenyl diisocyanate	Fresh water	1 mg/l
	Marine water	0.1 mg/l
	Sewage treatment plant	1 mg/l
	Soil	1 mg/kg
	Intermittent use/release	10 mg/l
o-(p-isocyanatobenzyl)phenyl isocyanate	Fresh water	1 mg/l
	Marine water	0.1 mg/l
	Sewage treatment plant	1 mg/l
	Soil	1 mg/kg
	Intermittent use/release	10 mg/l

8.2 Exposure controls

Personal protection equipment

Respiratory Protection

In order to avoid inhalation of spray-mist and sanding dust, all spraying and sanding must be done wearing adequate respirator. Apply technical measures to comply with the occupational exposure limits. Self-contained breathing apparatus (EN 133). Filter type: Combined particulates and organic vapour type (A-P).

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Seite 8 von 17

Hand Protection

Material: Fluorinated rubber. Break through time: > 480 min. Glove thickness: >= 0.4 mm.

Directive: DIN EN 374. Protective index: Class 6.

Remarks: Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. The data about break through time/strength of material are standard values! The exact break through time/strength of material has to be obtained from the producer of the protective glove. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other.

Eye Protection

Safety glasses with side-shields conforming to EN166

Skin and Body Protection

Please wear suitable protective clothing, e.g. made of cotton or heat-resistant synthetic fibres.

Protective measures

Long sleeved clothing.
Ensure that eye flushing systems and safety showers are located close to the working place.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	Liquid
Colour	Brown
Odour	Aromatic
pH-value	Not determined
Melting point / Melting range	Not determined
Initial boiling point / boiling range	> 136 °C
Flash point	> 23 °C
Explosion limits	
lower	0.7 Vol %
upper	7 Vol %
Vapour pressure at 20 °C	> 8 hPa
Density at 20 °C	1 g/cm ³
Solubility in/Miscibility with water	Immiscible
Partition coefficient (n-octanol/water)	Not determined
Viscosity	
Dynamic	Not determined
Kinematic at 40 °C	< 20.5 mm ² /s
Explosive properties	Not explosive. In use, may form flammable/explosive vapour-air mixture.

9.2 Other information

No data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

No decomposition if used as directed.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Amines and alcohols cause exothermic reactions. Mixture reacts slowly with water resulting in evolution of CO₂. Evolution of CO₂ in closed containers causes overpressure and produces a risk of bursting. Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight.

10.5 Incompatible materials

Amines, alcohols.

10.6 Hazardous decomposition products

Build-up of dangerous/toxic fumes possible in cases of fire/high temperature.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Harmful if inhaled.

Product

Acute inhalation toxicity	Acute toxicity estimate: 2.0 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method

Components

Isocyanic acid, polymethylenepolyphenylene ester, polymer with 1,2-ethanediamine, methyloxirane and 1,2-propanediol	
Acute inhalation toxicity	Acute toxicity estimate: 1.5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Expert judgement
Acute dermal toxicity	LD50 Dermal (Rabbit): > 9,400 mg/kg Method: OECD Test Guideline 402
Reaction mass of ethylbenzene and xylene	
Acute oral toxicity	LD50 Oral (Rat): 3,523 - 4,000 mg/kg Method: EC Directive 92/69/EEC B.1 Acute Toxicity (Oral)
Acute inhalation toxicity	LC50 (Rat, male): 6350 - 6700 ppm Exposure time: 4 h Test atmosphere: vapour Method: Regulation (EC) No. 440/2008, Annex, B.2
Acute dermal toxicity	LD50 Dermal (Rabbit): 12,126 mg/kg

Components

Diphenylmethanediisocyanate, isomeres and homologues	
Acute oral toxicity	LD50 Oral (Rat): 49,000 mg/kg
Acute inhalation toxicity	LC50 (Rat): 0.493 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Assessment: The substance/mixture is not toxic on inhalation as defined by dangerous goods regulations.
Acute dermal toxicity	LD50 Dermal (Rabbit): > 9,400 mg/kg Method: OECD Test Guideline 402
Hydrocarbons, C9, Aromatics	
Acute oral toxicity	LD50 Oral (Rat, female): ca. 3,492 mg/kg
Acute inhalation toxicity	LC50 (Rat): > 6.193 mg/l Exposure time: 4 h Test atmosphere: vapour Method: OECD Test Guideline 403 Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	LD50 Dermal (Rabbit): > 3,160 mg/kg Method: OECD Test Guideline 402
4,4'-methylenediphenyl diisocyanate	
Acute oral toxicity	LD50 Oral (Rat): > 2,000 mg/kg
Acute inhalation toxicity	Acute toxicity estimate: 1.5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Expert judgement LC50 (Rat): 0.368 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403
Acute dermal toxicity	LD50 Dermal (Rabbit): > 9,400 mg/kg Method: OECD Test Guideline 402
o-(p-isocyanatobenzyl)phenyl isocyanate	
Acute oral toxicity	LD50 Oral (Rat): > 2,000 mg/kg
Acute inhalation toxicity	Acute toxicity estimate: 1.5 mg/l

Sicherheitsdatenblatt gemäß Verordnung (EG) 2015/830

Version 2.1, Datum: 24.06.2024

Vorherige Version: 2.0.; 22.07.2021

Erste Version: 30.07.2019

Druckdatum: 24.06.2024

Seite 10 von 17

	Exposure time: 4 h Test atmosphere: dust/mist Method: Expert judgement
	LC50 (Rat): 0.31 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403
Acute dermal toxicity	LD50 Dermal (Rabbit): > 9,400 mg/kg Method: OECD Test Guideline 402

Skin corrosion/irritation

Causes skin irritation.

Components

Isocyanic acid, polymethylenepolyphenylene ester, polymer with 1,2-ethanediamine, methyloxirane and 1,2-propanediol	
Result	Skin irritation
Reaction mass of ethylbenzene and xylene	
Result	Skin irritation
Diphenylmethanediisocyanate, isomeres and homologues	
Species	Rabbit
Method	OECD Test Guideline 404
Result	Skin irritation
Hydrocarbons, C9, Aromatics	
Result	Repeated exposure may cause skin dryness or cracking

Serious eye damage/eye irritation

Causes serious eye irritation.

Components

Isocyanic acid, polymethylenepolyphenylene ester, polymer with 1,2-ethanediamine, methyloxirane and 1,2-propanediol	
Result	Moderate eye irritation
Reaction mass of ethylbenzene and xylene	
Result	Moderate eye irritation
Diphenylmethanediisocyanate, isomeres and homologues	
Result	Moderate eye irritation

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction

Respiratory sensitisation

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

Components

Isocyanic acid, polymethylenepolyphenylene ester, polymer with 1,2-ethanediamine, methyloxirane and 1,2-propanediol	
Test Type	Local lymph node assay (LLNA)
Species	Mouse
Assessment	May cause sensitisation by skin contact.
Method	OECD Test Guideline 429
Result	positive
Species	Guinea pig
Assessment	May cause sensitisation by inhalation.
Result	positive
Diphenylmethanediisocyanate, isomeres and homologues	
Test types	Local lymph node assay (LLNA)
Exposure routes	Dermal
Species	Mouse
Assessment	The product is a skin sensitiser, sub-category 1B.
Method	OECD Test Guideline 429
Result	positive
Exposre routes	inhalation (dust/mist/fume)
Species	Rat
Assessment	The product is a respiratory sensitiser, sub-category 1B.
Result	positive

Germ cell mutagenicity

Not classified based on available information.

Components

Hydrocarbons, C9, Aromatics	
Germ cell mutagenicity- Assessment	Classified based on benzene content < 0.1% (Regulation (EC) 1272/2008, Annex VI, Part 3, Note P)

Carcinogenicity

Suspected of causing cancer.

Components

Diphenylmethanediisocyanate, isomeres and homologues	
Carcinogenicity - Assessment	Classified based on benzene content < 0.1% (Regulation (EC) 1272/2008, Annex VI, Part 3, Note P)
Hydrocarbons, C9, Aromatics	
Carcinogenicity - Assessment	Classified based on benzene content < 0.1% (Regulation (EC) 1272/2008, Annex VI, Part 3, Note P)

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

May cause respiratory irritation.

Components

Isocyanic acid, polymethylenepolyphenylene ester, polymer with 1,2-ethanediamine, methyloxirane and 1,2-propanediol	
Assessment	May cause respiratory irritation.
Reaction mass of ethylbenzene and xylene	
Assessment	May cause respiratory irritation.
Diphenylmethanediisocyanate, isomeres and homologues	
Assessment	May cause respiratory irritation.
Hydrocarbons, C9, Aromatics	
Assessment	May cause respiratory irritation. May cause drowsiness or dizziness.

STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Components

Isocyanic acid, polymethylenepolyphenylene ester, polymer with 1,2-ethanediamine, methyloxirane and 1,2-propanediol	
Exposure routes	Inhalation
Target Organs	Respiratory organs
Assessment	May cause damage to organs through prolonged or repeated exposure.
Reaction mass of ethylbenzene and xylene	
Assessment	May cause damage to organs through prolonged or repeated exposure.
Diphenylmethanediisocyanate, isomeres and homologues	
Exposure routes	Inhalation
Target Organs	Lungs
Assessment	May cause damage to organs through prolonged or repeated exposure.

Aspiration toxicity

May be fatal if swallowed and enters airways.

Components

Reaction mass of ethylbenzene and xylene

May be fatal if swallowed and enters airways.

Hydrocarbons, C9, Aromatics

May be fatal if swallowed and enters airways.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Components

Isocyanic acid, polymethylenepolyphenylene ester, polymer with 1,2-ethanediamine, methyloxirane and 1,2-propanediol	
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	NOEC: > 10 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
Reaction mass of ethylbenzene and xylene	
Toxicity to fish	LC50 (Fish): 2.6 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	LC50 (Daphnia dubia (water flea)): 1 mg/l Exposure time: 24 h Method: OECD Test Guideline 202 EC50 (Daphnia dubia (water flea)): 165 mg/l Exposure time: 24 h

Toxicity to algae	EC50 (algae): 2.2 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 IC50 (algae): 1 - 10 mg/l Exposure time: 72 h
Toxicity to microorganisms	EC50 (Bacteria): 1 - 10 mg/l

Ecotoxicology Assessment

Chronic aquatic toxicity

This product has no known ecotoxicological effects.

Diphenylmethanediisocyanate, isomeres and homologues	
Toxicity to fish	LC0 (Fish): > 1,000 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	EC0 (Daphnia (water flea)): > 500 mg/l Exposure time: 24 h
Toxicity to algae	EC0 (Scenedesmus subspicatus): 1,640 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to microorganisms	EC50 (Bacteria): > 100 mg/l Exposure time: 3 h Method: OECD Test Guideline 209
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	NOEC: > 10 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
Hydrocarbons, C9, Aromatics	
Toxicity to fish	LL50 (Oncorhynchus mykiss (rainbow trout)): 9.2 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	EL50 (Daphnia magna (Water flea)): 3.2 mg/l End point: Immobilization Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae	NOELR (Pseudokirchneriella subcapitata (green algae)): 1 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to fish (Chronic toxicity)	NOELR: 1.228 mg/l Exposure time: 28 d Species: Oncorhynchus mykiss (rainbow trout)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	NOELR: 2.144 mg/l Exposure time: 21 d

Sicherheitsdatenblatt gemäß Verordnung (EG) 2015/830

Version 2.1, Datum: 24.06.2024

Vorherige Version: 2.0.; 22.07.2021

Erste Version: 30.07.2019

Druckdatum: 24.06.2024

Seite 13 von 17

	Species: Daphnia magna (Water flea)
4,4'-methylenediphenyl diisocyanate	
Toxicity to fish	LC0 (Oryzias latipes (Orange-red killifish)): > 3,000 mg/l End point: mortality Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	LC50 (Daphnia magna (Water flea)): 1,000 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae	EC50 (Desmodesmus subspicatus (green algae)): 1,640 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to microorganisms	EC50 (Bacteria): > 100 mg/l Exposure time: 3 h Method: OECD Test Guideline 209
Toxicity to daphnia and other aquatic invertebrates (Chron-ic toxicity)	NOEC: 10 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
o-(p-isocyanatobenzyl)phenyl isocyanate	
Toxicity to fish	LC50 (Danio rerio (zebra fish)): > 1,000 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	EC50 (Daphnia magna (Water flea)): > 1,000 mg/l Exposure time: 24 h Method: OECD Test Guideline 202
Toxicity to algae	EC50 (Desmodesmus subspicatus (green algae)): > 1,640 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chron-ic toxicity)	NOEC: > 10 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

12.2 Persistence and degradability

Components

Diphenylmethanediisocyanate, isomeres and homologues	
Biodegradability	Result: According to the results of tests of biodegradability this product is not readily biodegradable. Biodegradation: < 10 % Exposure time: 28 d
Hydrocarbons, C9, Aromatics	
Biodegradability	Result: Readily biodegradable. Biodegradation: 78 % Exposure time: 28 d Method: OECD Test Guideline 301F
4,4'-methylenediphenyl diisocyanate	
Biodegradability	Biodegradation: 0 % Exposure time: 28 d Method: OECD Test Guideline 302C
o-(p-isocyanatobenzyl)phenyl isocyanate	
Biodegradability	Biodegradation: 0 % Exposure time: 28 d Method: OECD Test Guideline 302C

12.3 Bioaccumulative potential

Components

Reaction mass of ethylbenzene and xylene	
Partition coefficient: n-octanol/water	log Pow: 3.2 (20 °C)
Diphenylmethanediisocyanate, isomeres and homologues	
Bioaccumulation	Species: Cyprinus carpio (Carp) Exposure time: 42 d Concentration: 0.2 mg/l Bioconcentration factor (BCF): < 14 Method: OECD Test Guideline 305C

Sicherheitsdatenblatt gemäß Verordnung (EG) 2015/830

Version 2.1, Datum: 24.06.2024

Vorherige Version: 2.0.; 22.07.2021

Erste Version: 30.07.2019

Druckdatum: 24.06.2024

Seite 14 von 17

Partition coefficient: n-octanol/water	Accumulation in aquatic organisms is unlikely. log Pow: 4.51 (22 °C) pH: 7
4,4'-methylenediphenyl diisocyanate	
Bioaccumulation	Bioconcentration factor (BCF): 200 Method: OECD Test Guideline 305
Partition coefficient: n-octanol/water	log Pow: 4.51 (20 °C)
o-(p-isocyanatobenzyl)phenyl isocyanate	
Bioaccumulation	> 60 % (-) (OECD 301 F)
100-41-4 ethylbenzene	
Biodegradation	Species: Cyprinus carpio (Carp) Bioconcentration factor (BCF): 92 - 200 Method: OECD Test Guideline 305
Partition coefficient: n-octanol/water	log Pow: 4.51 (22 °C) pH: 7

12.4 Mobility in soil

No data available.

12.5 Results of OBT 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.
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Components

Reaction mass of ethylbenzene and xylene	
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.

12.7 Other adverse effects

Product

Additional ecological information

No data available

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Product

Do not dispose of with domestic refuse. Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point. Dispose of in accordance with local regulations. Dispose of wastes in an approved waste disposal facility.

Do not dispose of together with household waste. Send to a licensed waste management company. It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations.

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Store containers and offer for recycling of material when in accordance with the local regulations. Packaging that is not properly emptied must be disposed of as the unused product. Dispose of in accordance with local regulations.

Waste Code

The following Waste Codes are only suggestions:

08 01 11, waste paint and varnish containing organic solvents or other hazardous substances.

14. TRANSPORT INFORMATION

14.1 UN number

ADN	UN 1993
ADR	UN 1993
RID	UN 1993
IMDG	UN 1993
IATA	UN 1993

14.2 UN proper shipping name

ADN	FLAMMABLE LIQUID, N.O.S. (xylene, Hydrocarbons, C9, Aromatics)
ADR	FLAMMABLE LIQUID, N.O.S. (xylene, Hydrocarbons, C9, Aromatics)
RID	FLAMMABLE LIQUID, N.O.S. (xylene, Hydrocarbons, C9, Aromatics)
IMDG	FLAMMABLE LIQUID, N.O.S. (xylene, Hydrocarbons, C9, Aromatics)
IATA	FLAMMABLE LIQUID, N.O.S. (xylene, Hydrocarbons, C9, Aromatics)

14.3 Transport hazard class(es)

ADN	3
ADR	3
RID	3
IMDG	3
IATA	3

14.4 Packing group

ADN

Packing group	III
Classification code	F1
Hazard Identification Number	30
Labels	3

ADR

Packing group	III
Classification code	F1
Hazard Identification Number	30
Labels	3
Tunnel Restriction Code	(D/E)

RID

Packing group	III
Classification code	F1
Hazard Identification Number	30
Labels	3

IMDG

Packing group	III
Labels	3
EmS Code	F-E, S-E

IATA (Cargo)

Packing instruction (cargo aircraft)	366
Packing instruction (LQ)	Y344
Packing group	III
Labels	Class 3 – Flammable liquids

IATA (Passenger)

Packing instruction (passenger aircraft)	355
Packing instruction (LQ)	Y344
Packing group	III
Labels	Class 3 – Flammable liquids

14.5 Environmental hazards

ADN

Environmentally hazardous	no
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Sicherheitsdatenblatt gemäß Verordnung (EG) 2015/830

Version 2.1, Datum: 24.06.2024

Vorherige Version: 2.0.; 22.07.2021

Erste Version: 30.07.2019

Druckdatum: 24.06.2024

Seite 16 von 17

ADR
 Environmentally hazardous no

RID
 Environmentally hazardous no

IMDG
 Marine pollutant no

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

15. REGULATORY INFORMATION

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59)	Not applicable.
REACH - List of substances subject to authorisation (Annex XIV)	Not applicable.
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	Not applicable.
Regulation (EC) No 850/2004 on persistent organic pollutants	Not applicable.
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)	Conditions of restriction for the following entries should be considered: Number on list 3 4,4'-methylenediphenyl diisocyanate (Number on list 56) o-(p-isocyanatobenzyl)phenyl isocyanate (Number on list 56)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

P5c
 34
 Volatile organic compounds

FLAMMABLE LIQUIDS
 Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams), (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)

Directive 2004/42/EC
 Volatile organic compounds (VOC) content: <= 441 g/l
 VOC content for the product in a ready to use condition.

Other regulations

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.
 Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

15.2 Chemical safety assessment

A chemical safety assessment according to (EC) regulation 1907/2006 (REACH) has not been carried out for this product.

16. OTHER INFORMATION

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.
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.
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.

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

Abbreviations and acronyms

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS - Australian Inventory of Chemical Substances
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

Sicherheitsdatenblatt gemäß Verordnung (EG) 2015/830

Version 2.1, Datum: 24.06.2024

Vorherige Version: 2.0.; 22.07.2021

Erste Version: 30.07.2019

Druckdatum: 24.06.2024

Seite 18 von 17

SDS - Safety Data Sheet; SVHC - Substance of Very High Concern
TCSI - Taiwan Chemical Substance 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 - Provide adequate information, instruction and training for operators.

Other information

Classification of mixture		Classification procedure
Flam. Liq. 3	H226	Based on product data or assessment
Acute Tox. 4	H332	Calculation method
Skin Irrit. 2	H315	Calculation method
Eye Irrit. 2	H319	Calculation method
Resp. Sens. 1	H334	Calculation method
Skin Sens. 1	H317	Calculation method
Carc. 2	H351	Calculation method
STOT SE 3	H335	Calculation method
STOT RE 2	H373	Calculation method
Asp. Tox. 1	H304	Calculation method
Aquatic Chronic 3	H412	Calculation method

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 given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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