

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH)

Printing date: 21.12.2017 Version number: 1.2 Revision: 11.10.2017 Trade name: Urethane Resin 45-60-80

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

Hazard classes and Hazard categories	Hazard Statements	Classification procedure
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Resp. Sens. 1	H334	
Skin Sens. 1	H317	

Hazard Statements

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.

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]



GHS07



GHS08

Signal word

Danger

Hazard Statements

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.

Precautionary Statements

P102	Keep out of reach of children.
P261	Avoid breathing vapours/spray.
P264	Wash hands thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/eye protection.
P285	In case of inadequate ventilation wear respiratory protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P304 + P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P363	Wash contaminated clothing before reuse.
P501	Dispose of contents/container to hazardous or special waste collection point.

Hazardous ingredients for labeling

4-methyl-m-phenylene diisocyanate, aromatic polyisocyanate-prepolymer, HDI oligomers, isocyanurate, HDI oligomers, biuret



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Special rules for supplemental label elements for certain mixtures

Contains isocyanates. May produce an allergic reaction.

2.3. Other hazards

People who suffer from skin sensitization problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this preparation.

Information pertaining to special dangers for human and environment

May cause sensitization by inhalation.

Harmful: danger of serious damage to health by prolonged inhalation

Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SECTION 3: Composition/ information on ingredients

3.1. Substances

not applicable

3.2. Mixtures

Hazardous ingredients

CAS No	EC No	Name	[% weight]	Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]
584-84-9	209-544-5	4-methyl-m-phenylene diisocyanate	0,1 < 1	Carc.2, H351 / Acute Tox. 2, H330 / Eye Irrit. 2, H319 / STOT SE 3, H335 / Skin Irrit. 2, H315 / Resp. Sens. 1, H334 / Skin Sens. 1, H317 / Aquatic Chronic 3, H412
37273-56-6 28182-81-2		aromatic polyisocyanate-prepolymer HDI oligomers, isocyanurate	50 - 99,9 2,5 < 10	Eye Irrit.2, H319 / Skin Sens. 1, H317 Acute Tox. 4, H332 / Skin Sens. 1, H317 / STOT SE 3, H335
28182-81-2	931-288-4	HDI oligomers, biuret	1 < 2,5	Acute Tox. 3, H331 / Skin Sens. 1, H317 / STOT SE 3, H335

REACH

CAS No	Name	REACH registration number
584-84-9	4-methyl-m-phenylene diisocyanate	01-2119486974-18-XXXX
28182-81-2	HDI oligomers, biuret	01-2119488177-260000

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove contaminated soaked clothing immediately.

In the event of persistent symptoms receive medical treatment.

In case of inhalation

Remove the casualty into fresh air and keep him immobile.

Seek medical treatment immediately.

In case of skin contact

In case of contact with skin wash off immediately with soap and water.

Consult a doctor if skin irritation persists.

In case of eye contact

In case of contact with eyes rinse thoroughly with water.

Call for a doctor immediately.



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In case of ingestion

Do not induce vomiting.
Seek medical advice immediately.

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

Physician's information / possible symptoms

Coughing
vomiting
Respiratory complaints
skin irritation

Physician's information / possible dangers

Risk of pulmonary irritation
allergic reactions

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

Treatment (Advice to doctor)

Keep under medical supervision for at least 48 hours.
Symptoms may not occur until several hours.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

ABC powder
Carbon dioxide
Water spray jet

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Danger of bursting
In case of fire formation of dangerous gases possible.
Nitrogen oxides (NO_x)
Carbon monoxide (CO)
Carbon dioxide (CO₂)
Hydrogen cyanide (HCN)

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Fire-fighting operations, rescue and clearing work under effect of combustion and smoulder gases just may be done with breathing apparatus.

Do not inhale explosion and/or combustion gases.

Additional information

Cool endangered containers with water spray jet.
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Ensure adequate ventilation.
Keep people away and stay on the upwind side.
Use personal protective clothing.
Keep away sources of ignition.
Use breathing apparatus if exposed to vapours/dust/aerosol.



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6.2. Environmental precautions

Inform pollution control authorities if product gets into the sewerage systems or open waters.
Do not discharge into the drains/surface waters/groundwater.

6.3. Methods and material for containment and cleaning up

Take up with absorbent material (e.g. sand, kieselguhr, acid binder, general-purpose binder, sawdust).
Disposal according to regulations.
Ventilate area concerned

Additional Information

Sort out leaky cans and dispose according to regulations.

6.4. Reference to other sections

Safe handling: see section 7
Disposal: see section 13
Personal protection equipment: see section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Keep container tightly closed.
Avoid formation of aerosols.
Care for thoroughly room ventilation, if necessary use in well ventilated area with local exhaust ventilation at workplace.

General protective measures

Do not inhale vapours.
Avoid contact with eyes and skin
Ensure sufficient ventilation.

Hygiene measures

At work do not eat, drink and smoke.
Remove soiled or soaked clothing immediately.
Work in rooms with good ventilation.
Wash hands before breaks and after work.

Advice on protection against fire and explosion

Protect from heat and sunlight.
Pay attention to general rules of internal fire prevention.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep only in original container.

Advice on storage compatibility

Do not store with acids or alkalis.
Do not store together with animal feedstuffs.
Do not store together with food.

Further information on storage conditions

Store closed container at cool and aired place.
Protect from frost.
Protect from heat and direct solar radiation.
Store in a dry place.

7.3. Specific end use(s)

Recommendation(s) for intended use

See section 1.2

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DNEL-/PNEC-values

DNEL worker

CAS No	Substance name	Value	Code	Remark
584-84-9	4-methyl-m-phenylene diisocyanate	0,035 mg/m ³	DNEL long-term inhalative (local)	
		0,035 mg/m ³	DNEL long-term inhalative (systemic)	
		0,14 mg/m ³	DNEL acute inhalative (local)	
		0,14 mg/m ³	DNEL acute inhalative (systemic)	

PNEC

CAS No	Substance name	Value	Code	Remark
584-84-9	4-methyl-m-phenylene diisocyanate	0,00125 mg/l	PNEC aquatic, marine water	
		0,013 mg/l	PNEC aquatic, freshwater	

Additional advice

The statutory local and national regulations have to be observed.

8.2. Exposure controls

Respiratory protection

If ventilation insufficient, wear respiratory protection.

Short-term: filter apparatus, filter A2/P2, otherwise environment-independent breathing apparatus.

Hand protection

In the cases of special applications, it is recommended to check the chemical resistance with the manufacturer of the gloves.

In the cases of special applications, it is recommended to check the chemical resistance with the manufacturer of the gloves.

Glove material specification [make/type, thickness, permeation time/life, wetting resistance]:: Nitrile rubber; 0,4mm; 480min;60min.

Eye protection

tightly fitting goggles

Other protection measures

protective clothing

Appropriate engineering controls

Care for thoroughly room ventilation, if necessary use in well ventilated area with local exhaust ventilation at workplace.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

liquid

Colour

transparent

Odour

characteristic

Odour threshold



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not determined

Important health, safety and environmental information

	Value	Temperature	at	Method	Remark
pH value	not determined				
boiling point	> 300 °C			DIN 53171	
melting point	not determined				
Flash point	> 100 °C			closed cup	
Vapourisation rate	not determined				
Flammable (solid)	not applicable				
Flammability (gas)	not applicable				
Ignition temperature	> 200 °C				estimate
Self ignition temperature					The product is not self-igniting.
Lower explosion limit	not determined				
Upper explosion limit	not determined				
Vapour pressure	not determined				
Relative density	1,1 g/cm ³			ISO 2811	
Vapour density	not determined				
Solubility in water					No or low immiscibility
Solubility/other	not determined				
Partition coefficient n-octanol/water (log P O/W)	not determined				
Decomposition temperature	not determined				
Viscosity dynamic	6750 mPa*s	20 °C		ISO 9371	
Viscosity kinematic	not determined				
Oxidising properties	No information available.				
Explosive properties	no				

9.2. Other information

No information available.



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SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions

Reactions with strong acids and alkalis.

10.4. Conditions to avoid

Keep away from heat.

10.5. Incompatible materials

Substances to avoid

Alkali (lye)

Acid

10.6. Hazardous decomposition products

Hydrogen cyanide (hydrocyanic acid)

Nitrogen oxides (NOx)

Carbon monoxide and carbon dioxide.

Thermal decomposition

Remark No decomposition if used as directed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity/Irritation/Sensitization

	Value/Validation	Species	Method	Remark
LD50 acute oral	> 5001 mg/kg	rat		CAS: 37273-56-6
LD50 acute dermal	> 9400 mg/kg	rabbit		CAS: 584-84-9
LC50 acute inhalation	0,107 mg/l (4 h)	rat	OECD 403	CAS: 584-84-9
Skin irritation	low irritant effect - not necessary to label			
Eye irritation	irritant			
Skin sensitization	sensitizing			
Sensitization respiratory system	sensitizing			

Subacute Toxicity - Carcinogenicity

	Value	Species	Method	Validation
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Value	Species	Method	Validation
Mutagenicity			No experimental information on genotoxicity in vitro available.
Reproduction-Toxicity			No indications of toxic effects were observed in reproduction studies in animals.
Carcinogenicity			No indications of carcinogenic effects are available from long-term trials.

Experiences made from practice

Frequent and / or prolonged contact may lead to skin irritation
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 Sensitization through inhalation possible.
 Sensitization through skin contact possible.
 Irritates respiratory tract.
 Irritates mucous membranes.
 Causes eye irritation.

Additional information

The product is to be handled with the caution usual with chemicals.
 Other hazardous properties may not be excluded.
 The product has not been tested. The information is derived from the properties of the individual components.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicological effects

	Value	Species	Method	Validation
Fish	LC50 133 mg/l (96 h)	rainbow trout	OECD 203, CAS: 584-84-9	Ecotoxicological tests carried out to determine the properties of a comparable product
Daphnia	EC50 12,5 mg/l (48 h)	Daphnia magna	OECD 202, CAS: 584-84-9	Ecotoxicological tests carried out to determine the properties of a comparable product
Algae	ErC50 3230 mg/l (96 h)	Skeletonema costatum	OECD 201, CAS: 584-84-9	Ecotoxicological tests carried out to determine the properties of a comparable product
Bacteria	EC50 > 10000 mg/l (3 h)	activated sludge	OECD 209, CAS: 37273-56-6	Ecotoxicological tests carried out to determine the properties of a comparable product

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

The product has not been tested. Because of the product's consistency and low solubility in water bioavailability is not likely.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment



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15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Recommended uses and restrictions

National and local regulations concerning chemicals shall be observed.
For industrial use only.

Further information

Each user is responsible for the implementation of the national special regulations.
The information contained herein is based on the state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.
Please observe the following disclaimer! --- Our safety data sheets have been compiled according to effective EU-directives, WITHOUT taking into account the special national directives concerning the handling of hazardous substances.

Indication of changes: "!" = Data changed compared with the previous version. Previous version: 1.1

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
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 (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).
H412	Harmful to aquatic life with long lasting effects.