SAFETY DATA SHEET

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SDS Number: 000000232410

Q 50-400-3040 2K PU Plastic Repair Component A

Version: 7.0

Conforms to EU Regulation 1907/2006/EC as amended. - SDSGHS_DE

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

1.1 Product identifier

Trade name : Q 50-400-3040 2K PU Plastic Repair Component A

UFI : 9NKV-R078-600Y-2YX4

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

Recommended use : Adhesives

1.3 Details of the supplier of the safety data sheet	1.4 Emergency telephone number
Q-Company Int. GmbH Lentföhrdener Strasse 12-14 D-24576 Weddelbrook - Germany Tel.: +49 (0)4192 891420 msds@qrefinish.com	+49 (0)551-19240 (Giftinformationszentrum-Nord)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

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 prolonged or repeated exposure.
Specific target organ toxicity - repeated exposure, Category 2, Respiratory Tract, Respiratory system	H373: May cause damage to organs through prolonged or repeated exposure if inhaled.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements :
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.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P285 In case of inadequate ventilation wear respiratory protection.

Response:

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Hazardous components which must be listed on the label:

4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate
Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer
pMDI + PPG
4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate
MDI + PPG
Reaction mass of 4,4'-methylenediphenyldiisocyanate and o-(pisocyanatobenzyl)phenylisocyanate
Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.',.alpha.''-1,2,3-propanetriyltris[.omega.-hydroxy-, polymer with 1,1'-methylenebis[4-isocyanatobenzene]

Additional Labelling

"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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Methylenediphenyldiisocyanate, isomers and homologues	9016-87-9 618-498-9 615-005-00-9	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 (Respiratory system)	>= 15 - < 20

		STOT RE 2; H373 --- specific concentration limit Eye Irrit. 2; H319 >= 5 % Skin Irrit. 2; H315 >= 5 % Resp. Sens. 1; H334 >= 0,1 % STOT SE 3; H335 >= 5 %	
DIPHENYLMETHANE DIISOCYANATE HOMOPOLYMER	25686-28-6 5000403 01-2119457013-49-xxxx	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1A; H334 Skin Sens. 1A; H317 STOT SE 3; H335 (Respiratory system) STOT RE 2; H373 (Respiratory Tract) --- specific concentration limit Eye Dam. 2; H319 >= 5 % Skin Irrit. 2; H315 >= 5 % Resp. Sens. 1; H334 >= 0,1 % STOT SE 3; H335 >= 5 %	>= 10 - < 15
POLYMERIC MDI (EXCESS) + POLYPROPYLENE GLYCOL	53862-89-8	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 (Respiratory system) STOT RE 2; H373 (Respiratory system)	>= 10 - < 15

4,4'-Methylenediphenyl diisocyanate	101-68-8 202-966-0 615-005-00-9 01-2119457014-47-xxxx	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 (Respiratory system) STOT RE 2; H373 --- specific concentration limit Eye Irrit. 2; H319 >= 5 % STOT SE 3; H335 >= 5 % Skin Irrit. 2; H315 >= 5 % Resp. Sens. 1; H334 >= 0,1 %	>= 10 - < 15
MDI (EXCESS) + POLYPROPYLENE GLYCOL	9048-57-1	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 (Respiratory system) STOT RE 2; H373 (Respiratory system)	>= 5 - < 10
Reaction mass of 4,4'-methylenediphenyldiisocyanate and o-(pisocyanatobenzyl)phenylisocyanate	Not Assigned 01-2119457015-45-xxxx	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 (Respiratory system) STOT RE 2; H373	>= 5 - < 10
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.',.alpha."-1,2,3-propanetriyltris[.omega.-	57029-46-6	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317	>= 2,5 - < 5

hydroxypoly[oxy(methyl-1,2-ethanediyl)]]		Carc. 2; H351 STOT SE 3; H335 (Respiratory system) STOT RE 2; H373 --- specific concentration limit Eye Irrit. 2; H319 >= 5 % Skin Irrit. 2; H315 >= 5 % Resp. Sens. 1; H334 >= 0,1 % STOT SE 3; H335 >= 5 %	
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.',.alpha.''-1,2,3-propanetriyltris[.omega.-hydroxy-, polymer with 1,1'-methylenebis[4-isocyanatobenzene]	52409-10-6 500-115-0	Acute Tox. 4; H332 Resp. Sens. 1; H334 Skin Sens. 1; H317 Carc. 2; H351 STOT SE 3; H335 STOT RE 2; H373 (Respiratory system) Eye Irrit. 2; H319 Skin Irrit. 2; H315 --- specific concentration limit Eye Irrit. 2; H319 >= 5 % Skin Irrit. 2; H315 >= 5 % Resp. Sens. 1; H334 >= 0,1 % STOT SE 3; H335 >= 5 %	>= 1 - < 2,5
Substances with a workplace exposure limit :			
Talc	14807-96-6 238-877-9		>= 10 - < 15

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Move out of dangerous area.
Call a POISON CENTRE or doctor/physician if exposed or you feel unwell.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Move to fresh air.
Call a physician or poison control centre immediately.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.

In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
If on skin, rinse well with water.
Wash contaminated clothing before re-use.

In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.

If swallowed : Obtain medical attention.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Cough
Headache
chest pain
lung edema (fluid buildup in the lung tissue)
Difficulty in breathing

Risks : Pulmonary edema may be delayed.

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

Treatment : No hazards which require special first aid measures.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products : Carbon dioxide (CO2)
Carbon monoxide
Hydrocarbons
Nitrogen oxides (NOx)
Hydrogen cyanide (hydrocyanic acid)
Isocyanates

5.3 Advice for firefighters

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

Specific extinguishing methods	:	Product is compatible with standard fire-fighting agents.
Further information	:	Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Use personal protective equipment. Ensure adequate ventilation. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Comply with all applicable federal, state, and local regulations.

6.2 Environmental precautions

Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For further information see Section 8 and Section 13 of the safety data sheet.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	Avoid formation of aerosol. Provide sufficient air exchange and/or exhaust in work rooms. Do not breathe vapours/dust. Do not smoke. Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not

be employed in any process in which this mixture is being used.
Container hazardous when empty.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : Wash hands before breaks and at the end of workday. When using do not eat or drink. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Observe label precautions.

Storage class (TRGS 510) : 10

Further information on storage stability : No decomposition if stored and applied as directed.

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
Methylenediphenyldiisocyanate, isomers and homologues	9016-87-9	AGW (Inhalable fraction)	0,05 mg/m3 Inhalable fraction (MDI)	DE TRGS 900
4,4'-Methylenediphenyl	101-68-8	AGW (Vapour	0,05 mg/m3	TRGS 430

diisocyanate		and aerosols)	Vapour and aerosols	
		AGW (Vapour and aerosols, inhalable fraction)	0,05 mg/m3 Vapour and aerosols, inhalable fraction	DE TRGS 900
Talc	14807-96-6	AGW (Inhalable fraction)	10 mg/m3 Inhalable fraction	DE TRGS 900
		AGW (Alveolate fraction)	1,25 mg/m3 Alveolate fraction	DE TRGS 900

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

DIPHENYLMETHANE DIISOCYANATE HOMOPOLYMER	:	Aquatic (marine water) Value: 0,1 mg/l
		Aquatic (freshwater) Value: 1 mg/l
		Sewage treatment plant Value: 1 mg/l
		Aquatic (intermit. releases) Value: 10 mg/l
		Soil Value: 1 mg/kg

8.2 Exposure controls

Engineering measures

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Eye protection : Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

Use eye protection according to EN 166.

Hand protection

Material	:	butyl-rubber
Break through time	:	480 min
Glove thickness	:	> 0,5 mm
Remarks	:	The exact break through time can be obtained from the protective glove producer and this has to be observed. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Skin and body protection : Wear as appropriate:
Impervious clothing
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Discard gloves that show tears, pinholes, or signs of wear.

Protective clothing complying with EN 13688.
Safety shoes complying with EN ISO 20345.

Respiratory protection : Wear a positive-pressure supplied-air respirator with full facepiece.

Respiratory protection complying with EN 136.
Respiratory protection complying with EN 140.
Respiratory protection complying with EN 14387.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	viscous
Colour	:	beige
Odour	:	hydrocarbon-like
Odour Threshold	:	No data available
Melting point/freezing point	:	not determined
Boiling point/boiling range	:	> 200 °C
Upper explosion limit / Upper flammability limit	:	Upper explosion limit not determined
Lower explosion limit / Lower flammability limit	:	Lower explosion limit not determined

Flash point	:	203 °C
Decomposition temperature	:	No data available
pH	:	substance/mixture is non-soluble (in water)
Viscosity		
Viscosity, dynamic	:	ca. 20.000 mPa.s
Viscosity, kinematic	:	not determined
Solubility(ies)		
Water solubility	:	practically insoluble, Decomposes in contact with water.
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	not determined
Vapour pressure	:	< 0,0133 hPa (25 °C)
Relative density	:	No data available
Density	:	ca. 1,288 g/cm3 (20 °C)
Relative vapour density	:	> 1 (Air = 1.0)

9.2 Other information

Oxidizing properties	:	Not applicable
Self-ignition	:	not determined
Evaporation rate	:	< 1 n-Butyl Acetate = 1

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Product will not undergo hazardous polymerization.

10.4 Conditions to avoid

Conditions to avoid : excessive heat
temperatures above 350 degrees F (177 degrees C)
Freezing temperatures.
Exposure to moisture

10.5 Incompatible materials

Materials to avoid : Acids
Alcohols
alkenes
aluminum
Amines
Ammonia
Bases
Copper alloys
Iron
strong alkalis
water
Zinc

10.6 Hazardous decomposition products

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO2)
Nitrogen oxides (NOx)
Hydrocarbons
Acetone

SECTION 11: Toxicological information

11.1 Information on toxicological effects

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

Acute toxicity
Harmful if inhaled.

Components:
Methylenediphenyldiisocyanate, isomers and homologues

Acute oral toxicity : LD50 (Rat): > 10.000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 2,24 mg/l
Exposure time: 1 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.

Acute dermal toxicity : LD50 (Rabbit): > 10.000 mg/kg

Components:
DIPHENYLMETHANE DIISOCYANATE HOMOPOLYMER

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 425
GLP: yes

Acute inhalation toxicity : Symptoms: Increased heart rate, Rapid respiration, Drowsiness, Headache, Nausea, Vomiting
Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.

Acute dermal toxicity : (Rabbit): > 9.400 mg/kg
Remarks: Information given is based on data obtained from similar substances.

Components:
POLYMERIC MDI (EXCESS) + POLYPROPYLENE GLYCOL

Acute oral toxicity : LD50 (Rat): > 10.000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 2,24 mg/l
Exposure time: 1 h

Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.

Acute dermal toxicity : LD50 (Rabbit): > 10.000 mg/kg

Components:
4,4'-Methylenediphenyl diisocyanate
Acute oral toxicity : LD50 (Rat): 9.200 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 2,24 mg/l
Exposure time: 1 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.

Acute dermal toxicity : LD50 (Rabbit): > 7.900 mg/kg
Symptoms: Redness, Swelling of tissue, Itching, Blistering, Pain

Components:
MDI (EXCESS) + POLYPROPYLENE GLYCOL
Acute oral toxicity : LD50 (Rat): 9.200 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 2,24 mg/l
Exposure time: 1 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.

Acute dermal toxicity : LD50 (Rabbit): > 7.900 mg/kg
Symptoms: Redness, Swelling of tissue, Itching, Blistering, Pain

Components:
Reaction mass of 4,4'-methylenediphenyldiisocyanate and o-(pisocyanatobenzyl)phenylisocyanate
Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Remarks: Based on a similar product formulation.

Acute inhalation toxicity : LC50 (Rat): 490 mg/m3
Exposure time: 4 h
Remarks: Aerosol

Based on a similar product formulation.

Components:
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.',.alpha.''-1,2,3-propanetriyltris[.omega.-hydroxypoly[oxy(methyl-1,2-ethanediyl)]]

Acute oral toxicity	:	LD50 (Rat): > 10.000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 2,24 mg/l Exposure time: 1 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.
Acute dermal toxicity	:	LD50 (Rabbit): > 10.000 mg/kg

Components:
Talc

Acute oral toxicity	:	LD50 (Rat): > 5.000 mg/kg Method: OECD Test Guideline 423

Skin corrosion/irritation
Causes skin irritation.
Product:
Remarks: May cause skin irritation and/or dermatitis.

Components:
Methylenediphenyldiisocyanate, isomers and homologues
Result: Irritating to skin.

DIPHENYLMETHANE DIISOCYANATE HOMOPOLYMER
Result: Irritating to skin.
Remarks: Information given is based on data obtained from similar substances.

POLYMERIC MDI (EXCESS) + POLYPROPYLENE GLYCOL
Result: Irritating to skin.

4,4'-Methylenediphenyl diisocyanate
Result: Irritating to skin.

MDI (EXCESS) + POLYPROPYLENE GLYCOL
Result: No skin irritation

Result: Irritating to skin.

Reaction mass of 4,4'-methylenediphenyldiisocyanate and o-(pisocyanatobenzyl)phenylisocyanate
Species: Rabbit
Method: OECD Test Guideline 404
Result: Irritating to skin.
Remarks: Based on a similar product formulation.

Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.',.alpha.''-1,2,3-propanetriyltris[.omega.-hydroxypoly[oxy(methyl-1,2-ethanediyl)]]
Result: Irritating to skin.

Talc
Species: reconstructed human epidermis (RhE)
Result: No skin irritation

Serious eye damage/eye irritation
Causes serious eye irritation.
Product:
Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin., Causes serious eye irritation.

Components:
Methylenediphenyldiisocyanate, isomers and homologues
Result: Irritating to eyes.

DIPHENYLMETHANE DIISOCYANATE HOMOPOLYMER
Result: Irritating to eyes.

POLYMERIC MDI (EXCESS) + POLYPROPYLENE GLYCOL
Result: Irritating to eyes.

4,4'-Methylenediphenyl diisocyanate
Result: Irritating to eyes.

MDI (EXCESS) + POLYPROPYLENE GLYCOL
Result: No eye irritation

Result: Irritating to eyes.

Reaction mass of 4,4'-methylenediphenyldiisocyanate and o-(pisocyanatobenzyl)phenylisocyanate
Result: Irritating to eyes.

Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.',.alpha.''-1,2,3-propanetriyltris[.omega.-hydroxypoly[oxy(methyl-1,2-ethanediyl)]]
Result: Irritating to eyes.

Talc
Species: Rabbit
Method: OECD Test Guideline 405
Result: Slight, transient 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.
Product:
Remarks: May cause allergic skin reaction.

Components:
Methylenediphenyldiisocyanate, isomers and homologues
Assessment: May cause sensitisation by skin contact.

Assessment: May cause sensitisation by inhalation.

DIPHENYLMETHANE DIISOCYANATE HOMOPOLYMER
Test Type: Maximisation Test
Species: Guinea pig
Assessment: May cause sensitisation by skin contact.

Assessment: May cause sensitisation by inhalation.

POLYMERIC MDI (EXCESS) + POLYPROPYLENE GLYCOL
Assessment: May cause sensitisation by skin contact.

Assessment: May cause sensitisation by inhalation.

4,4'-Methylenediphenyl diisocyanate
Assessment: May cause sensitisation by inhalation.

Assessment: May cause sensitisation by skin contact.

MDI (EXCESS) + POLYPROPYLENE GLYCOL
Assessment: May cause sensitisation by inhalation.

Assessment: May cause sensitisation by skin contact.

Reaction mass of 4,4'-methylenediphenyldiisocyanate and o-(pisocyanatobenzyl)phenylisocyanate
Assessment: May cause sensitisation by inhalation.

Assessment: May cause sensitisation by skin contact.

Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.',.alpha."-1,2,3-propanetriyltris[.omega.-hydroxypoly[oxy(methyl-1,2-ethanediyl)]]
Assessment: May cause sensitisation by skin contact.

Assessment: May cause sensitisation by inhalation.

Talc
Test Type: Maximisation Test
Species: Guinea pig
Assessment: Did not cause sensitisation on laboratory animals.
Method: OECD Test Guideline 406

Germ cell mutagenicity
Not classified based on available information.
Components:

DIPHENYLMETHANE DIISOCYANATE HOMOPOLYMER

Genotoxicity in vitro : Test Type: Ames test
Result: negative
Remarks: Information given is based on data obtained from similar substances.

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Test species: Rat
Method: OECD Test Guideline 474
Remarks: Information given is based on data obtained from similar substances.

Talc

Genotoxicity in vitro : Test Type: In vitro gene mutation study in bacteria
Test species: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Result: negative

: Test Type: In vitro gene mutation study in bacteria
Test species: Saccharomyces cerevisiae
Metabolic activation: with and without metabolic activation
Result: negative

Genotoxicity in vivo : Test Type: dominant lethal test
Test species: Rat (male)
Cell type: Bone marrow
Result: negative

Carcinogenicity
Suspected of causing cancer.

Components:
Methylenediphenyldiisocyanate, isomers and homologues
Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

DIPHENYLMETHANE DIISOCYANATE HOMOPOLYMER
Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

POLYMERIC MDI (EXCESS) + POLYPROPYLENE GLYCOL
Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

4,4'-Methylenediphenyl diisocyanate
Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

MDI (EXCESS) + POLYPROPYLENE GLYCOL
Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.',.alpha."-1,2,3-propanetriyltris[.omega.-hydroxypoly[oxy(methyl-1,2-ethanediyl)]]
Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Reproductive toxicity
Not classified based on available information.
STOT - single exposure
May cause respiratory irritation.
Components:
Methylenediphenyldiisocyanate, isomers and homologues
Exposure routes: Inhalation
Target Organs: Respiratory system
Assessment: May cause respiratory irritation.

DIPHENYLMETHANE DIISOCYANATE HOMOPOLYMER
Exposure routes: Inhalation
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.

POLYMERIC MDI (EXCESS) + POLYPROPYLENE GLYCOL
Exposure routes: Inhalation
Target Organs: Respiratory system
Assessment: May cause respiratory irritation.

4,4'-Methylenediphenyl diisocyanate
Exposure routes: Inhalation
Target Organs: Respiratory system
Assessment: May cause respiratory irritation.

MDI (EXCESS) + POLYPROPYLENE GLYCOL
Exposure routes: Inhalation
Target Organs: Respiratory system
Assessment: May cause respiratory irritation.

Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.',.alpha.''-1,2,3-propanetriyltris[.omega.-hydroxypoly[oxy(methyl-1,2-ethanediyl)]]
Exposure routes: Inhalation
Target Organs: Respiratory system
Assessment: May cause respiratory irritation.

STOT - repeated exposure
May cause damage to organs through prolonged or repeated exposure.
Components:
Methylenediphenyldiisocyanate, isomers and homologues
Exposure routes: Inhalation
Target Organs: Respiratory system
Assessment: May cause damage to organs through prolonged or repeated exposure.

DIPHENYLMETHANE DIISOCYANATE HOMOPOLYMER
Exposure routes: Inhalation
Target Organs: Respiratory Tract
Assessment: May cause damage to organs through prolonged or repeated exposure.

POLYMERIC MDI (EXCESS) + POLYPROPYLENE GLYCOL
Exposure routes: Inhalation
Target Organs: Respiratory system
Assessment: May cause damage to organs through prolonged or repeated exposure.

4,4'-Methylenediphenyl diisocyanate
Exposure routes: Inhalation
Target Organs: Respiratory system
Assessment: May cause damage to organs through prolonged or repeated exposure.

MDI (EXCESS) + POLYPROPYLENE GLYCOL
Exposure routes: Inhalation
Target Organs: Respiratory system
Assessment: May cause damage to organs through prolonged or repeated exposure.

Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.',.alpha."-1,2,3-propanetriyltris[.omega.-hydroxypoly[oxy(methyl-1,2-ethanediyl)]]
Exposure routes: Inhalation
Target Organs: Respiratory system
Assessment: May cause damage to organs through prolonged or repeated exposure.

Aspiration toxicity
Not classified based on available information.
Further information
Product:
Remarks: No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

Methylenediphenyldiisocyanate, isomers and homologues

Toxicity to fish	:	LC50 (Oryzias latipes (Orange-red killifish)): > 3.000 mg/l Exposure time: 96 h Test Type: semi-static test
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 24 h Test Type: static test Method: OECD Test Guideline 202
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: > 10 mg/l Exposure time: 21 d End point: Reproduction Test Species: Daphnia magna (Water flea) Test Type: semi-static test Method: OECD Test Guideline 211

DIPHENYLMETHANE DIISOCYANATE HOMOPOLYMER

Toxicity to fish	:	LC50 (Oryzias latipes (Japanese medaka)): > 3.000 mg/l Exposure time: 96 h Test Type: semi-static test Remarks: Information given is based on data obtained from similar substances.
Toxicity to daphnia and other	:	(Daphnia magna (Water flea)): > 1.000 mg/l

aquatic invertebrates		Exposure time: 24 h Test Type: static test Method: OECD Test Guideline 202 Remarks: Information given is based on data obtained from similar substances.
Toxicity to algae	:	NOEC (Desmodesmus subspicatus (green algae)): 1.640 mg/l End point: Growth inhibition Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 Remarks: Information given is based on data obtained from similar substances.

POLYMERIC MDI (EXCESS) + POLYPROPYLENE GLYCOL

Toxicity to fish	:	LC50 (Oryzias latipes (Orange-red killifish)): > 3.000 mg/l Exposure time: 96 h Test Type: semi-static test
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 24 h Test Type: static test Method: OECD Test Guideline 202
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: > 10 mg/l Exposure time: 21 d End point: Reproduction Test Species: Daphnia magna (Water flea) Test Type: semi-static test Method: OECD Test Guideline 211

4,4'-Methylenediphenyl diisocyanate

Toxicity to fish	:	LC50 (Oryzias latipes (Orange-red killifish)): > 3.000 mg/l Exposure time: 96 h Test Type: semi-static test Remarks: Information given is based on data obtained from similar substances.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 24 h Test Type: static test Method: OECD Test Guideline 202 Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: > 10 mg/l Exposure time: 21 d End point: Reproduction Test Species: Daphnia magna (Water flea) Test Type: semi-static test Method: OECD Test Guideline 211 Remarks: Information given is based on data obtained from similar substances.

MDI (EXCESS) + POLYPROPYLENE GLYCOL

Toxicity to fish	:	LC50 (Oryzias latipes (Orange-red killifish)): > 3.000 mg/l Exposure time: 96 h Test Type: semi-static test Remarks: Information given is based on data obtained from similar substances.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 24 h Test Type: static test Method: OECD Test Guideline 202 Remarks: Information given is based on data obtained from similar substances.
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: > 10 mg/l Exposure time: 21 d End point: Reproduction Test Species: Daphnia magna (Water flea) Test Type: semi-static test Method: OECD Test Guideline 211 Remarks: Information given is based on data obtained from similar substances.

Reaction mass of 4,4'-methylenediphenyldiisocyanate and o-(pisocyanatobenzyl)phenylisocyanate

Toxicity to fish	:	LC0 (Danio rerio (zebra fish)): > 1 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 1 mg/l Exposure time: 24 h Method: OECD Test Guideline 202
Toxicity to bacteria	:	EC50 (activated sludge): > 100 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 Remarks: Based on a similar product formulation.

12.2 Persistence and degradability

Components:

Methylenediphenyldiisocyanate, isomers and homologues
Biodegradability : Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 302C
Remarks: Information given is based on data obtained from similar substances.

DIPHENYLMETHANE DIISOCYANATE HOMOPOLYMER
Biodegradability : Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 302C

POLYMERIC MDI (EXCESS) + POLYPROPYLENE GLYCOL
Biodegradability : Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 302C
Remarks: Information given is based on data obtained from similar substances.

4,4'-Methylenediphenyl diisocyanate
Biodegradability : Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 302C
Remarks: Information given is based on data obtained from similar substances.

MDI (EXCESS) + POLYPROPYLENE GLYCOL
Biodegradability : Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 302C
Remarks: Information given is based on data obtained from similar substances.

Reaction mass of 4,4'-methylenediphenyldiisocyanate and o-(pisocyanatobenzyl)phenylisocyanate
Biodegradability : Biodegradation: 0 %

Exposure time: 28 d
Method: OECD Test Guideline 302C
Remarks: Information given is based on data obtained from similar substances.

Talc

Biodegradability : Result: The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

No data available

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 Other adverse effects

Product:

Further 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.

Additional ecological information : No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14: Transport information

SECTION 14: Transport information

14.1 UN number

ADN: Not dangerous goods
ADR: Not dangerous goods
INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: Not dangerous goods
INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: Not dangerous goods
INTERNATIONAL MARITIME DANGEROUS GOODS: Not dangerous goods
RID: Not dangerous goods

14.2 UN proper shipping name

ADN: Not dangerous goods
ADR: Not dangerous goods
INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: Not dangerous goods
INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: Not dangerous goods
INTERNATIONAL MARITIME DANGEROUS GOODS: Not dangerous goods
RID: Not dangerous goods

14.3 Transport hazard class(es)

ADN: Not dangerous goods
ADR: Not dangerous goods
INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: Not dangerous goods
INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: Not dangerous goods
INTERNATIONAL MARITIME DANGEROUS GOODS: Not dangerous goods
RID: Not dangerous goods

14.4 Packing group

ADN: Not dangerous goods
ADR: Not dangerous goods
INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: Not dangerous goods
INTERNATIONAL MARITIME DANGEROUS GOODS: Not dangerous goods
RID: Not dangerous goods

14.5 Environmental hazards

ADN: Not applicable
ADR: Not applicable
INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: Not applicable
INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: Not applicable
INTERNATIONAL MARITIME DANGEROUS GOODS: Not applicable
RID: Not applicable

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Ship Type: Not applicable
Hazard code(s): Not applicable
Pollutant Category: Not applicable

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 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
Regulation (EC) No 649/2012 of the European	: Not applicable

Parliament and the Council concerning the export and import of dangerous chemicals

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:
(3)
Methylenediphenyldiisocyanate, isomers and homologues
(56, 3)
DIPHENYLMETHANE DIISOCYANATE HOMOPOLYMER
(3)
POLYMERIC MDI (EXCESS) + POLYPROPYLENE GLYCOL
(3)
4,4'-Methylenediphenyl diisocyanate
(56, 3)
MDI (EXCESS) + POLYPROPYLENE GLYCOL
(3)
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.,.alpha.',.alpha."-1,2,3-propanetriyltris[.omega.-hydroxypoly[oxy(methyl-1,2-ethanediyl)]]
(3)
triethyl phosphate
(3)

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

TA Luft List (Germany) : Total dust, Not applicable

: Inorganic substances in powdered form, Not applicable

: Inorganic substances in vapour or gaseous form, Not applicable

: Organic Substances, Class 1 32,78 %

: Carcinogenic substances, Not applicable

: Mutagenic, Not applicable

: Toxic to reproduction, Not applicable

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

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

The components of this product are reported in the following inventories:

TCSI	: Not in compliance with the inventory
TSCA	All substances listed as active on the TSCA inventory
AIIC	Not in compliance with the inventory
DSL	This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.
ENCS	Not in compliance with the inventory
KECI	Not in compliance with the inventory
PICCS	Not in compliance with the inventory
IECSC	On the inventory, or in compliance with the inventory
NZIoC	Not in compliance with the inventory

Inventories
AIIC (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TECI (Thailand), TSCA (USA)

15.2 Chemical safety assessment

No data available

SECTION 16: Other information

Full text of H-Statements

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.
H335	:	May cause respiratory irritation.
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.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Carc.	:	Carcinogenicity
Eye Irrit.	:	Eye irritation
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

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; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

Sources of key data used to compile the Safety Data Sheet	:	Internal data including own and sponsored test reports European Union Law with content from the Official Journal of the European Union. European Chemicals Agency; the EU authority implementing the EU's chemicals legislation for companies. The German Water Hazard Classes. ReachCentrum; a series of support services to help comply with REACH regulations. The European Commission; proposing legislation, administering and implementing EU policies, and enforcing EU law. The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport. Cefic, the European Chemical Industry Council. ESIS European Chemical Substances Information System

Classification of the mixture:		**Classification procedure:**
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
STOT RE 2	H373	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.

DE / EN