

Safety Data Sheet

In accordance with Regulation (EU) no. 878/2020 and Regulation (EC) no. 1272/2008
(All references to EU regulations and directives are abbreviated into only the numeric term)

Publication date: 1.2017
Revision date: 11.2024
Version: 3.0

Mulcol® Multifoam 2K Component A (Component B is found on page 9 – 16)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name Mulcol® Multifoam 2K
2 Components Fire Protection Foam

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

General use Polyol compound for the production of polyurethane.
For industrial purposes only

1.3 Details of the supplier of the safety data sheet

Company name Mulcol International
Promenade 75
5401 GM Uden
The Netherlands
Telephone +31 (0)118-726140
E-mail info@mulcol.com
Website www.mulcol.com

1.4 Emergency telephone number

In case of emergency contact toxicological information, emergency tel. 112 or 999.
For non-emergency poison information, United Kingdom: National Poisons Information Service [0344 892 0111](tel:03448920111) (for healthcare professionals only)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to EC regulation 1272/2008 (CLP):

Carc. 2; H351 Suspected of causing cancer.
Repr. 2; H361f Suspected of damaging fertility.

2.2 Label elements

Labelling (CLP)



Signal word: Warning

Hazard statements:

H351 Suspected of causing cancer.
H361f Suspected of damaging fertility.

Precautionary statements:

P201 Obtain special instructions before use.
P280 Wear protective gloves/protective clothing/eye protection.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P501 Dispose of contents/container to hazardous or special waste collection point.

Special labelling:

Contains Melamine

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2.3 Other hazards

Special danger of slipping by leaking/spilling product.

Results of PBT and vPvB assessment:

No data available.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable.

3.2 Mixtures

Chemical characterisation: Mixture on the basis of Polyether polyol.

Hazardous ingredients:

Ingredient	Designation	Content	Classification
EC No. 203-615-4 CAS 108-78-1	Melamine (SVHC)	< 10 %	Carc. 2; H351. Repr. 2; H361f. STOT RE 2; H373.

Full text of H- and EUH-statements: see section 16.

Additional information: Contains the following substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH: Melamine (Equivalent level of concern having probable serious effects to human health (Article 57(f) - human health); Equivalent level of concern having probable serious effects to the environment (Article 57(f) - environment)) Contains Aluminium hydroxide, pentaerythritol, Diiron trioxide. The maximum workplace exposure limits are, where necessary, listed in section 8.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General information:

If medical advice is needed, have product container or label at hand.
Take off contaminated clothing and wash it before reuse.

In case of inhalation:

If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention if problems persist.

Following skin contact:

Immediately clean with water and soap and, if available, apply a generous amount of polyethylene glycol 400. In case of skin reactions, consult a physician.

After eye contact:

Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. In case of troubles or persistent symptoms, consult an ophthalmologist.

After swallowing:

Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do not induce vomiting. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

No data available.

4.3 Indication of any immediate medical attention and special treatment needed

Product causes irritation of respiratory tracts and may possibly increase sensitivity of skin and respiratory tracts. Treatment of the acute irritation or bronchial narrowing is mainly symptomatic. Depending on the scale of exposition, as well as aches and pains resulting, long-term medical care may be required.

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SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:

Foam, extinguishing powder, carbon dioxide.

In case of greater fires: water spray jet.

Extinguishing media which must not be used for safety reason:

Full water jet.

5.2 Special hazards arising from the substance or mixture

May form dangerous gases and vapours in case of fire.

Furthermore, there may develop: nitrogen oxides (NO_x), carbon monoxide and carbon dioxide

5.3 Advice for firefighters

Special protective equipment for firefighters:

Wear self-contained breathing apparatus and protective clothing to protect skin and eyes.

Additional information:

Heating causes rise in pressure with risk of bursting.

Cool endangered containers with water spray and, if possible, remove from danger zone.

Remove persons not involved upwind.

Do not allow water used to extinguish fire to enter drains, ground or waterways.

Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid exposure. Do not breathe mist/vapours/spray. Avoid contact with the substance.

If possible, eliminate leakage. Provide adequate ventilation.

Wear appropriate protective equipment. Keep unprotected people away.

Take off contaminated clothing and wash it before reuse.

6.2 Environmental precautions

Do not allow to penetrate into soil, waterbodies or drains.

If necessary notify appropriate authorities.

6.3 Methods and material for containment and cleaning up

Take up mechanically, placing in appropriate containers for disposal. Final cleaning.

Additional information: Special danger of slipping by leaking/spilling product.

6.4 Reference to other sections

Refer additionally to chapter 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advices on safe handling:

Obtain special instructions before use.

Provide adequate ventilation, and local exhaust as needed.

Avoid contact with skin and eyes. Wear appropriate protective equipment.

Do not breathe mist/vapours/spray. Take off contaminated clothing and wash it before reuse. Have eye wash bottle or eye rinse ready at work place.

Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Precautions against fire and explosion:

Keep away from heat.

When handling larger quantities, take precautionary measures against electrostatic charging.

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7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Keep containers tightly closed and at a temperature between 5 °C and 30 °C. Keep in a cool, well-ventilated place.
Keep container dry. Protect from humidity and water. Protect from humidity and water.
Do not allow the product to enter the ground.

Hints on joint storage:

Keep away from food, drink and animal feeding stuffs.

Further details:

Use caution when opening containers under pressure.

7.3 Specific end use(s)

Observe instructions for use.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Additional information:

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Provide good ventilation and/or an exhaust system in the work area.

Personal protection equipment

Occupational exposure controls

Respiratory protection:

Respiratory protection must be worn whenever the WEL levels have been exceeded.
Use combination filter type A2-P2 according to EN 14387.

Hand protection:

protective gloves according to EN 374
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection:

Tightly sealed goggles according to EN ISO 16321-1:2022.

Body protection:

Wear suitable protective clothing.

General protection and hygiene measures:

Avoid exposure - obtain special instructions before use.
Avoid contact with the substance. Do not breathe dusts or mists.
Work place should be equipped with a shower and an eye rinsing apparatus.
Wash hands before breaks and after work.
Take off immediately all contaminated clothing.
Keep away from food, drink and animal feeding stuffs.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state at 20 °C and 101.3 kPa:	liquid
Colour:	red brown
Odour:	characteristic
Odour threshold	no data available
pH value	8.3
Melting point/freezing point	not determined
Initial boiling point and boiling range	not determined
Flash point/flash point range	not applicable
Flammability	not determined
Explosive properties	no data available

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Explosion limits	LEL (Lower Explosion Limit): not applicable UEL (Upper Explosive Limit): not applicable
Vapour pressure	at 25 °C: <= 0.00001 kPa
Vapour density	no data available
Density	approx. 1.3 g/mL
Water solubility	practically insoluble
Partition coefficient: n-octanol/water	not determined
Thermal decomposition	no data available
Viscosity, dynamic	not relevant

9.2 Other information

Explosive properties:	no data available
Oxidizing characteristics:	no data available
Auto-ignition temperature:	not applicable
Bulk density:	not applicable
Evaporation rate:	no data available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Refer to subsection "Possibility of hazardous reactions".

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4 Conditions to avoid

Protect from moisture contamination. Protect from direct sunlight. Protect from frost.
Keep away from heat sources, sparks and open flames.

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

No decomposition when used properly.

Thermal decomposition:

No data available

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Toxicological effects:

The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral): Lack of data.

Acute toxicity (dermal): Lack of data.

Acute toxicity (inhalative): Lack of data.

Skin corrosion/irritation: Lack of data.

Serious eye damage/irritation: Lack of data.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

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Carcinogenicity: Carc. 2; H351 = Suspected of causing cancer.
Reproductive toxicity: Repr. 2; H361f = Suspected of damaging fertility.
Effects on or via lactation: Lack of data.
Specific target organ toxicity (single exposure): Lack of data.
Specific target organ toxicity (repeated exposure): Lack of data.
Aspiration hazard: Lack of data.

11.2 Information on other hazards

Endocrine disrupting properties: No data available

Other information: No data available

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic toxicity:

Further details: No data available

12.2. Persistence and degradability

Further details:

No data available

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water:

Not determined.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

No data available.

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

General information:

Do not allow to penetrate into soil, waterbodies or drains.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Waste key number: 08 04 09* = Waste adhesives and sealants containing organic solvents or other dangerous substances

* = Evidence for disposal must be provided.

Recommendation: Dispose of waste according to applicable legislation.

Contaminated packaging

Waste key number:

15 01 02 = Plastic packaging

Recommendation:

Dispose of waste according to applicable legislation.

Handle contaminated packages in the same way as the substance itself.

Non-contaminated packages may be recycled.

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SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR/RID, IMDG, IATA-DGR:

Not applicable.

14.2 UN proper shipping name

ADR/RID, IMDG, IATA-DGR:

Not restricted.

14.3 Transport hazard class(es)

ADR/RID, IMDG, IATA-DGR:

Not applicable.

14.4 Packing group

ADR/RID, IMDG, IATA-DGR:

Not applicable.

14.5 Environmental hazards

Dangerous for the environment:

Substance/mixture is not environmentally hazardous according to the criteria of the UN model regulations.

Marine pollutant:

No

14.6 Special precautions for user

No dangerous good in sense of these transport regulations.

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

No data available.

SECTION 15: REGULATORY INFORMATION

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

National regulations - EC member states

Further regulations, limitations and legal requirements: Use restriction according to REACH annex XVII, no.: 3, 75

15.2 Chemical Safety Assessment

For this mixture a chemical safety assessment is not required.

SECTION 16: OTHER INFORMATION

Further information

Wording of the H-phrases under paragraph 2 and 3:

H351 = Suspected of causing cancer.

H361f = Suspected of damaging fertility.

H373 = May cause damage to organs through prolonged or repeated exposure.

Reason of change: General revision

Date of first version : 01-2017

Earlier versions : 1.0

Department issuing data sheet

Contact person: see section 1: Dept. responsible for information

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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
AS/NZS: Australian Standards/New Zealand Standards
Carc.: Carcinogenicity
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
EC: European Community
EN: European Standard
EQ: Excepted quantities
EU: European Union
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
LEL: Lower Explosion Limit
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
OEL: Occupational Exposure Limit Value
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
Repr.: Reproductive toxicity
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
STOT RE: Specific target organ toxicity - repeated exposure
SVHC: Substance of very high concern
TLV: Threshold Limit Value
TRGS: Technical Rules for Hazardous Substances
vPvB: Very persistent and very bioaccumulative
WEL: Workplace Exposure Limit

Notice to reader

The information contained in this safety data sheet is based on the present state of knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

It should not be construed as any guarantee of the technical performance or suitability for particular applications.

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Mulcol® Multifoam 2K Component B (Component A is found on page 1 – 8 of this SDS)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name Mulcol® Multifoam 2K
2 Components Fire Protection Foam

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

General use Di-/poly-isocyanate component to produce polyurethanes.
For industrial purposes only.

1.3 Details of the supplier of the safety data sheet

Company name Mulcol International
Promenade 75
5401 GM Uden
The Netherlands
Telephone +31 (0)118-726140
E-mail info@mulcol.com
Website www.mulcol.com

1.4 Emergency telephone number

In case of emergency contact toxicological information, emergency tel. 112 or 999.
For non-emergency poison information, United Kingdom: National Poisons Information Service [0344 892 0111](tel:03448920111) (for healthcare professionals only)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to EC regulation 1272/2008 (CLP):

Acute Tox. 4; H332	Harmful if inhaled.
Skin Irrit. 2; H315	Causes skin irritation.
Eye Irrit. 2; H319	Causes serious eye irritation.
Resp. Sens. 1; H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Sens. 1; H317	May cause an allergic skin reaction.
Carc. 2; H351	Suspected of causing cancer.
STOT SE 3; H335	May cause respiratory irritation.
STOT RE 2; H373	May cause damage to organs through prolonged or repeated exposure.

2.2 Label elements

Labelling (CLP)



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.

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H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements:

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
P284 Wear respiratory protection
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P308+P313 IF exposed or concerned: Get medical advice/attention
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
P403+P233 Store in a well-ventilated place. Keep container tightly closed

Special labelling:

EUH204 Contains isocyanates. May produce an allergic reaction.
Contains 4,4'-Diphenylmethane diisocyanate (isomers, homologues).
As from 24 August 2023 adequate training is required before industrial or professional use.

2.3 Other hazards

Persons with over-sensitive breath ways (e.g. asthma, chronic bronchitis) are not allowed to use the product due to safety regulations.
Vapours and aerosols are the main dangers to the respiratory tract.
Respiratory symptoms may still occur several hours after overexposure.
Special danger of slipping by leaking/spilling product.

Endocrine disrupting properties, Results of PBT and vPvB assessment:

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Chemical characterisation: 4,4'-Diphenylmethane diisocyanate (isomers, homologues) approx. 100%

CAS-Number: 9016-87-9

EC-number: 618-498-9

Additional information: Contains 4,4'-Methylenediphenyl diisocyanate (CAS 101-68-8).

The maximum workplace exposure limits are, where necessary, listed in section 8.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General information:	If medical advice is needed, have product container or label at hand. Take off immediately all contaminated clothing and wash it before reuse.
In case of inhalation:	Move victim to fresh air; if necessary, provide artificial respiration or oxygen. Do not allow victim to become chilled. Keep victim warm. Keep victim calm and seek medical attention immediately. If victim is at risk of losing consciousness, position and transport on their side.
In case of skin contact:	Immediately clean with water and soap and, if available, apply a generous amount of polyethylene glycol 400. In case of skin reactions, consult a physician.
After eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Afterwards, consult an ophthalmologist immediately.
After swallowing:	Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do not induce vomiting. Seek medical attention.

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4.2 Most important symptoms and effects, both acute and delayed

Causes serious eye irritation. Causes skin irritation. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause damage to organs (Respiratory tract) through prolonged or repeated exposure (inhalation). May cause respiratory irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Product causes irritation of respiratory tracts and may possibly increase sensitivity of skin and respiratory tracts. Treatment of the acute irritation or bronchial narrowing is mainly symptomatic. Depending on the scale of exposition, as well as aches and pains resulting, long-term medical care may be required.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:

Foam, extinguishing powder, carbon dioxide.

In case of greater fires: also water fog.

Extinguishing media which must not be used for safety reasons: Full water jet.

5.2 Special hazards arising from the substance or mixture

May form dangerous gases and vapours in case of fire.

Furthermore, there may develop: Isocyanate vapours, traces of hydrogen cyanide, nitrous fumes, carbon monoxide

5.3 Advice for firefighters

Special protective equipment for firefighters:

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information:

Heating causes rise in pressure with risk of bursting.

Cool endangered containers with water spray and, if possible, remove from danger zone.

Remove persons not involved upwind.

Do not allow water used to extinguish fire to enter drains, ground or waterways.

Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid exposure. Do not breathe vapours and spray. Avoid contact with the substance.

If possible, eliminate leakage. Provide adequate ventilation.

Wear appropriate protective equipment. Keep unprotected people away.

Take off immediately all contaminated clothing and wash it before reuse.

6.2 Environmental precautions

Do not allow to enter into ground-water, surface water or drains.

If necessary notify appropriate authorities.

6.3 Methods and material for containment and cleaning up

Take up mechanically, placing in appropriate containers for disposal. Final cleaning.

Additional information: Special danger of slipping by leaking/spilling product.

6.4 Reference to other sections

Refer additionally to chapter 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advices on safe handling:

Obtain special instructions before use.

Provide adequate ventilation, and local exhaust as needed.

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Airflow should move away from persons.
The effectiveness of the facilities must be checked at regular intervals.
Avoid contact with skin and eyes. Wear appropriate protective equipment.
Do not breathe vapours and spray.
Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.
Take off immediately all contaminated clothing and wash it before reuse.
Have eye wash bottle or eye rinse ready at work place.

Precautions against fire and explosion:

Keep away from heat.
When handling larger quantities, take precautionary measures against electrostatic charging.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Keep in a cool, well-ventilated place. Keep container dry.
storage temperature: < 15 °C
Protect from humidity and water.
Do not allow the product to enter the ground.

Hints on joint storage:

Keep away from: Water, acids, alkalis, amines, alcohols.
Keep away from food, drink and animal feedingstuffs.

Further details:

Use caution when opening containers under pressure.

7.3 Specific end use(s)

Observe instructions for use.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limit values – United Kingdom:

Substance	CAS No. / EC No.	Occupational exposure limit
Polymeric diphenylmethane diisocyanate, Polymeric MDI	9016-87-9 / 618-498-9	-

Additional information:

Contains no substances with occupational exposure limit values **in the United Kingdom**.
Product, cured: For mechanical processing: Comply with occupational limit values for dust.

8.2 Exposure controls

Provide good ventilation and/or an exhaust system in the work area.

Personal protection equipment

Occupational exposure controls

Respiratory protection:

Respiratory protection must be worn whenever the WEL levels have been exceeded.
Use combination filter type A2-P2 according to EN 14387.

Hand protection:

protective gloves according to EN 374
Glove material:
Nitrile rubber - NBR, 0.4 mm
Butyl caoutchouc (butyl rubber) - IIR, 0.7 mm
Chloroprene rubber - CR, 0.5 mm

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Eye protection:**Body protection:****General protection and hygiene measures:**

polyvinyl chloride - PVC, 0.7 mm

Breakthrough time: > 480 min

Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Tightly sealed goggles according to EN ISO 16321-1:2022.

Wear suitable protective clothing.

Obtain special instructions before use.

Avoid contact with skin and eyes.

Wear appropriate protective equipment. Do not breathe vapours and spray.

Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Take off immediately all contaminated clothing and wash it before reuse.

Have eye wash bottle or eye rinse ready at work place.

Environmental exposure controls: Refer to "6.2 Environmental precautions".

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state at 20 °C and 101.3 kPa:	liquid
Colour:	red brown
Odour:	earthy, musty
Odour threshold:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	330 °C (1.013 mbar)
Flammability:	No data available
Upper/lower flammability or explosive limits:	No data available
Flash point/flash point range:	204 °C
Auto-ignition temperature:	> 600 °C
Decomposition temperature:	No data available
pH:	No data available
Viscosity, dynamic:	at 25 °C: 600 - 700 mPa*s (DIN 53018)
Water solubility:	Reacts with water
Partition coefficient: n-octanol/water:	No data available
Vapour pressure:	at 25 °C: <= 0.01 Pa
Density: at 20 °C:	1.24 g/mL
Vapour density:	No data available
Particle characteristics:	Not applicable

9.2 Other information

Explosive properties:	Product is not explosive.
Oxidizing characteristics:	No data available
Auto-ignition temperature:	No data available
Evaporation rate:	No data available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Refer to subsection 10.3 Possibility of hazardous reactions.

10.2 Chemical stability

Product is stable under normal storage conditions.

10.3 Possibility of hazardous reactions

Violent reaction with amines and alcohols.

Contact with water liberates carbon dioxide.

Heating causes rise in pressure with risk of bursting.

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10.4 Conditions to avoid

Protect from moisture contamination. Protect from direct sunlight. Protect from frost.
Keep away from heat sources, sparks and open flames.

10.5 Incompatible materials

Water, acids, alkalis, amines, alcohols

10.6 Hazardous decomposition products

No decomposition when used properly.

Thermal decomposition:

No data available

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Toxicological effects

LC50 Rat, inhalative: 0.493 mg/L/4 h

Toxicological effects: Acute toxicity (oral): Based on available data, the classification criteria are not met.

Acute toxicity (dermal): Based on available data, the classification criteria are not met.

Acute toxicity (inhalative): Acute Tox. 4; H332 = Harmful if inhaled.

Skin corrosion/irritation: Skin Irrit. 2; H315 = Causes skin irritation.

Serious eye damage/irritation: Eye Irrit. 2; H319 = Causes serious eye irritation.

Sensitisation to the respiratory tract: Resp. Sens. 1; H334 = May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitisation: Skin Sens. 1; H317 = May cause an allergic skin reaction.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Carc. 2; H351 = Suspected of causing cancer.

Reproductive toxicity: Lack of data.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): STOT SE 3; H335 = May cause respiratory irritation.

Specific target organ toxicity (repeated exposure): STOT RE 2; H373 = May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard: Based on available data, the classification criteria are not met.

11.2 Information on other hazards

Endocrine disrupting properties: No data available

Other information:

Persons with over-sensitive breath ways (e.g. asthma, chronic bronchitis) are not allowed to use the product due to safety regulations.

Information about Diphenylmethane diisocyanate (isomers, homologues):

A long-term studie with rats over two years with mechanically produced, inhalable aerosols (aerodyn. diameter of 95% under 5 µm) of polymer MDI (PMDI) and concentrations of 0.2, 1.0 and 6.0 mg PMDI/m³ showed the following results:

The group of animals exposed to the highest concentration suffered an increased incidence of lung tumours, persistent inflammatory changes to the nose, respiratory tract and lungs, and yellowish deposits in the respiratory tract and lungs.

The animals in the 1.0 mg/m³ group exhibited slight irritation and inflammatory changes to the nose, respiratory tract and lungs, but did not develop lung tumours and/or deposits.

Animals in the 0.2 mg/m³ group suffered no irritation: this concentration was therefore deemed to constitute the 'no-effect level'.

Safety Data Sheet

In accordance with Regulation (EU) no. 878/2020 and Regulation (EC) no. 1272/2008
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Publication date: 1.2017

Revision date: 11.2024

Version: 3.0

Symptoms:

In case of inhalation: Irritation of nose, throat, lung.

Headache, throat dryness, respiratory complaints, chest pressure.

May cause sensitization by inhalation. Susceptible persons may develop ailments and allergic reactions with some delay.

In case of ingestion: May be harmful if swallowed.

After contact with skin: In case of a prolonged contact tanning and irritating effects may occur.

After eye contact: Produces for a short time a weak reddening and tumefaction of the conjunctiva as well as a weak, reversible rendering turbid of the cornea.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic toxicity:

Information about Diphenylmethane diisocyanate (isomers, homologues):

Bacterial toxicity:

EC50 > 100 mg/L/3 h (OECD 209)

Daphnia toxicity:

EC50 Daphnia: > 1,000 mg/L/24h (OECD 202)

chronic daphnia toxicity:

NOEC Daphnia magna (Big water flea): > 10 mg/L/21d (OECD 202)

Fish toxicity:

LC50 Danio rerio (zebrafish): > 1,000 mg/L/96 h (OECD 203)

Algae toxicity:

ErC50 Scenedesmus subspicatus > 1,640 mg/L/72h (OECD 201)

12.2. Persistence and degradability

Further details:

Forms carbon dioxide and turns into a hard and insoluble by-product (poly urea) on the water's edge. This reaction is intensified by surface-active substances (e.g. liquid soaps) or water soluble solvents. Based upon current knowledge, poly urea is inert and will not decompose.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water:

Not determined.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

AOX reference: Product does not contain organically bound halogen (AOX).

General information: Do not allow to penetrate into soil, waterbodies or drains.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Waste key number: 08 05 01* = Waste isocyanates

* = Evidence for disposal must be provided.

Recommendation: Dispose of waste according to applicable legislation.

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Package

Waste key number: 15 01 02 = Plastic packaging

Recommendation: Dispose of waste according to applicable legislation.

Handle contaminated packages in the same way as the substance itself.

Non-contaminated packages may be recycled.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number or ID number

ADR/RID, IMDG, IATA-DGR: not applicable

ADN: ID 9004

14.2 UN proper shipping name

ADR/RID, IMDG, IATA-DGR: Not restricted

ADN: ID 9004, DIPHENYLMETHANE-4,4'-DIISOCYANATE

14.3 Transport hazard class(es)

ADR/RID, IMDG, IATA-DGR: not applicable

ADN: Class 9, Code: M12

14.4 Packing group

ADR/RID, ADN, IMDG, IATA-DGR: not applicable

14.5 Environmental hazards

Dangerous for the environment: Substance/mixture is not environmentally hazardous according to the criteria of the UN model regulations.

Marine pollutant - IMDG: no

14.6 Special precautions for user

Inland waterway craft (ADN)

Hazard label: -

Transport permitted: T

Equipment necessary: PP

No dangerous good in sense of these transport regulations.

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

No data available.

SECTION 15: REGULATORY INFORMATION

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

National regulations - EC member states

Restrictions on use: REACH, annex XVII: No. 74

Labelling of packaging with <= 125mL content



Signal word:

Danger

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Hazard statements:

H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H351	Suspected of causing cancer.
EUH204	Contains isocyanates. May produce an allergic reaction.

Precautionary statements:

P201	Obtain special instructions before use.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection.
P284	In case of inadequate ventilation wear respiratory protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Further regulations, limitations and legal requirements: Use restriction according to REACH annex XVII, no.: 3, 56, 74, 75

15.2 Chemical Safety Assessment

For this mixture a chemical safety assessment is not required.

SECTION 16: OTHER INFORMATION

Further information

Date of first version : 01-2017
Date of revision : 11-2024

Earlier versions : 1.0
Reason of change: Changes in section 2: classification, labelling
Changes in section 3: Composition/information on ingredients
Changes in section 14: transport information
Changes in section 15: Regulatory information
General revision

Department issuing data sheet

Contact person: see section 1: Dept. responsible for information

Abbreviations and acronyms:

Acute Tox.:	Acute toxicity
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
AOX:	Adsorbable Organic Halogens
AS/NZS:	Australian Standards/New Zealand Standards
Carc.:	Carcinogenicity
CAS:	Chemical Abstracts Service
CFR:	Code of Federal Regulations
CLP:	Classification, Labelling and Packaging
DMEL:	Derived minimal effect level
DNEL:	Derived no-effect level
EC:	European Community
EC50:	Effective Concentration 50%
EN:	European Standard

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EQ:	Excepted quantities
EU:	European Union
Eye	Irrit.: Eye irritation
IATA:	International Air Transport Association
IATA-DGR:	International Air Transport Association – Dangerous Goods Regulations
IBC Code:	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code:	International Maritime Dangerous Goods Code
LC50:	Median lethal concentration
MARPOL:	Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
NOEC:	No Observed Effect Concentration
OECD:	Organisation for Economic Co-operation and Development
OEL:	Occupational Exposure Limit Value
OSHA:	Occupational Safety and Health Administration
PBT:	Persistent, bioaccumulative and toxic
PNEC:	Predicted no-effect concentration
REACH:	Registration, Evaluation, Authorisation and Restriction of Chemicals
Resp. Sens.:	Sensitisation to the respiratory tract
RID:	Regulations Concerning the International Carriage of Dangerous Goods by Rail
Skin Irrit.:	Skin irritation
Skin Sens.:	Skin sensitisation
STOT RE:	Specific target organ toxicity - repeated exposure
STOT SE:	Specific target organ toxicity - single exposure
TLV:	Threshold Limit Value
TRGS:	Technical Rules for Hazardous Substances
vPvB:	Very persistent and very bioaccumulative
WEL:	Workplace Exposure Limit

Notice to reader

The information contained in this safety data sheet is based on the present state of knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.

It should not be construed as any guarantee of the technical performance or suitability for particular applications.