

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Product Name : Rapido - Resin

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

Recommended use : Art and crafts

1.3 Details of the supplier of the safety data sheet

Supplier Eli-Chem Resins UK Ltd T/A
212 Dunsfold Park
Stovolds Hill
Cranleigh
GU6 8GA (UK)
+44 (0)1483 266636 (09:00 - 17:00 Mon-Thur / 09:00 - 16:00 Fri)
sales@elichem.co.uk

1.4 Emergency telephone number

Emergency number : +44 (0)1483 266636 office hours only

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture**

No classification in accordance with the Regulation (EC) No. 1272/2008.

2.2 Label elements

No labeling necessary according to the Regulation (EC) No. 1272/2008.

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

Type of product: Substance

3.1 Substances

polyether polyol

No dangerous ingredients according to REACH-Regulation (EC) No. 1907/2006.

SECTION 4: First aid measures**4.1 Description of first aid measures**

General advice: Take off all contaminated clothing immediately.

If inhaled: Take the person into the fresh air and keep him warm, let him rest; if there is difficulty in breathing, medical advice is required.

In case of skin contact: In case of skin contact wash affected areas thoroughly with soap and plenty of water. Consult a doctor in the event of a skin reaction.

In case of eye contact: Hold the eyes open and rinse with preferably lukewarm water for a sufficiently long period of time (at least 10 minutes). Contact an ophthalmologist.

If swallowed: DO NOT induce the patient to vomit, medical advice is required.

4.2 Most important symptoms and effects, both acute and delayed

Notes to physician: Basic first aid, decontamination, symptomatic treatment.

4.3 Indication of any immediate medical attention and special treatment needed

Therapeutic measures: No information available.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

Suitable extinguishing media: Carbon dioxide (CO₂), Foam, extinguishing powder, in cases of larger fires, water spray should be used.

Unsuitable extinguishing media: High volume water jet

5.2 Special hazards arising from the substance or mixture

Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes.

5.3 Advice for fire-fighters

Firemen must wear self-contained breathing apparatus.

Do not allow contaminated extinguishing water to enter the soil, ground-water or surface waters.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Put on protective equipment (see section 8). Ensure adequate ventilation/exhaust extraction. Keep unauthorized persons away.

6.2 Environment related measures

Do not allow to escape into waterways, wastewater or soil.

6.3 Methods and material for containment and cleaning up

Take up with absorbent for chemicals or, if necessary with dry sand and store in closed containers.

6.4 Reference to other sections

For further disposal measures see section 13.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes.

In all workplaces or parts of the plant where high concentrations of aerosols and/or vapors may be generated (e.g. during pressure release, mold venting or when cleaning mixing heads with an air blast), appropriately located exhaust ventilation must be provided in such a way that the WEL is not exceeded.

The air should be drawn away from the personnel handling the product. The efficiency of the exhaust equipment should be periodically checked.

Precautions should generally be taken against electrostatic charges according to the equipment used and the way the product is handled and packaged.

Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at the end of workday. Keep working clothes separately. Change contaminated or soaked clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed and dry.

Further specific information see our "Technical Information"

Storage class (TRGS 510) : 10: Combustible liquids

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters**

For technical protective measures to limit exposure see also Section 7 "Handling and storage".

8.2 Exposure controls**Respiratory protection**

Unless the product is entirely enclosed, do not handle it until you have studied the respiratory precautions issued by the appropriate authority or accident prevention association. If vapors form, respirators must be used. Put on full-mask respirator with filter type ABEK.

Hand protection

Protective gloves are recommended.

Nitrile rubber - NBR (≥ 0.35 mm)

Breakthrough time not tested; dispose of immediately after contamination.

Eye protection

Wear eye/face protection.

Skin and body protection

Wear suitable protective clothing.

Safety precautions for handling freshly molded polyurethane parts: see section 16

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

Appearance:	liquid	
Colour:	colourless to yellow	
Odour:	almost odourless	
Odour Threshold:	not established	
pH:	5	DIN 51369
Pour point:	-23 °C	ISO 3016
Boiling point/boiling range:	290 °C at 1.013 hPa	DIN 53171
Flash point:	200 °C at 1.013 hPa	DIN EN ISO 2719
Evaporation rate:	not established	
Flammability (solid, gas):	not applicable	
Burning number:	not applicable	
Vapour pressure:	2 hPa at 20 °C	EG A4
	9 hPa at 50 °C	EG A4
	11 hPa at 55 °C	EG A4
Vapour density:	not established	
Density:	1,04 g/cm ³ at 20 °C	DIN 51757
Miscibility with water:	miscible at 15 °C	
Surface tension:	not established	
Partition coefficient (n-octanol/water):	not established	
Auto-ignition temperature:	not applicable	
Ignition temperature:	370 °C	DIN 51794
Decomposition temperature:	> 200 °C	
	> 200 °C	
Heat of combustion:	not established	
Viscosity, dynamic:	600 mPa.s at 25 °C	DIN 53019

9.2 Other information

The indicated values do not necessarily correspond to the product specification. Please refer to the product information sheet or the technical information sheet for specification data.

Explosive properties:	not established
Dust explosion class:	not applicable
Oxidising properties:	not established

SECTION 10: Stability and reactivity

10.1 Reactivity

This information is not available.

10.2 Chemical stability

This information is not available.

10.3 Possibility of hazardous reactions

No hazardous reactions when used as directed.

10.4 Conditions to avoid

This information is not available.

10.5 Incompatible materials

This information is not available.

10.6 Hazardous decomposition products

No hazardous decomposition products when stored and handled correctly.

SECTION 11: Toxicological information

Please find below the data available to us:

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**Acute toxicity, oral**

Propylidynetrimethanol, propoxylated
LD50 rat, female: > 2.500 mg/kg
Method: OECD Test Guideline 423

Acute toxicity, dermal

Propylidynetrimethanol, propoxylated
LD50 rat, male/female: > 2.000 mg/kg
Method: OECD Test Guideline 402

Acute toxicity, inhalation

Propylidynetrimethanol, propoxylated
Assessment: no data available
Study not required according to Regulation (EC) No. 1907/2006 (REACH).

Primary skin irritation

Propylidynetrimethanol, propoxylated
Species: rabbit
Result: non-irritant
Classification: No skin irritation
Method: OECD Test Guideline 404

Primary mucosae irritation

Propylidynetrimethanol, propoxylated
Species: rabbit
Result: slight irritant
Classification: No eye irritation
Method: OECD Test Guideline 405

Sensitisation

Propylidynetrimethanol, propoxylated
Skin sensitization (local lymph node assay (LLNA)):
Species: Mouse
Result: negative
Classification: Does not cause skin sensitization.
Method: OECD Test Guideline 429

Respiratory sensitization

Classification: Does not cause respiratory sensitization.

Subacute, subchronic and prolonged toxicity

Propylidynetrimethanol, propoxylated
NOAEL: >= 1.000 mg/kg
Application Route: Oral
Species: rat, male/female
Dose Levels: 0 - 100 - 300 - 1000 mg/kg
Exposure duration: 4 w
Frequency of treatment: daily
Method: OECD Test Guideline 407
Studies of a comparable product.

Carcinogenicity

Propylidynetrimethanol, propoxylated
No data available.

Reproductive toxicity/Fertility

Propylidynetrimethanol, propoxylated
NOAEL (parents, generally toxicity): 1000 mg/kg

NOAEL (parents, fertility): 1000 mg/kg
NOAEL (offspring): 1000 mg/kg
Species: rat, male/female
Application Route: Oral
Dose Levels: 0 - 100 - 300 - 1000 mg/kg
Exposure duration: males: 28 days, females: 58 days
Frequency of treatment: daily
Exposure time before mating - Male: 14 d
Exposure time before mating - Female: 14 d
Method: OECD Test Guideline 421
Fertility and developmental toxicity tests did not reveal any effect on reproduction.
Studies of a comparable product.

Reproductive toxicity/Developmental Toxicity/Teratogenicity

Propylidynetrimethanol, propoxylated
NOAEL (teratogenicity): 1.000 mg/kg
NOAEL (maternal): 1.000 mg/kg
NOAEL (developmental toxicity): 1000 mg/kg
Species: rat, female
Application Route: Oral
Dose Levels: 0 - 100 - 300 - 1000 mg/kg
Frequency of treatment: Daily from day 6 to day 20 of the gestation
Method: OECD Test Guideline 414
Did not show teratogenic effects in animal experiments.

Genotoxicity in vitro

Propylidynetrimethanol, propoxylated
Test type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: Ames test
Test system: Escherichia coli
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Test type: Chromosome aberration test in vitro
Test system: Human lymphocytes
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 487

Test type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster ovary (CHO) cells
Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 476

Genotoxicity in vivo

Propylidynetrimethanol, propoxylated
No data available.

STOT evaluation – one-time exposure

Propylidynetrimethanol, propoxylated
Based on available data, the classification criteria are not met.

STOT evaluation – repeated exposure

Propylidynetrimethanol, propoxylated
Based on available data, the classification criteria are not met.

Aspiration toxicity

Propylidynetrimethanol, propoxylated
Based on available data, the classification criteria are not met.

CMR Assessment

Propylidynetrimethanol, propoxylated

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

Mutagenicity: In vitro tests did not show mutagenic effects Based on available data, the classification criteria are not met.

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

Reproductive toxicity/Fertility: Based on available data, the classification criteria are not met.

Toxicology Assessment

Propylidynetrimethanol, propoxylated

Acute effects: Based on available data, the classification criteria are not met.

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

11.2 Information on other hazards

No data available.

SECTION 12: Ecological information

Do not allow to escape into waterways, wastewater or soil.

Please find below the data available to us:

12.1 Toxicity**Acute Fish toxicity**

Propylidynetrimethanol, propoxylated

LC50 > 100 mg/l

Species: Danio rerio (zebra fish)

Exposure duration: 96 h

Method: Directive 67/548/EEC, Annex V, C.1.

Chronic Fish toxicity

Propylidynetrimethanol, propoxylated

Study scientifically not justified.

Acute toxicity for daphnia

Propylidynetrimethanol, propoxylated

EC50 > 100 mg/l

Test type: Immobilization

Species: Daphnia magna (Water flea)

Exposure duration: 48 h

Method: Directive 67/548/EEC, Annex V, C.2.

Chronic toxicity to daphnia

Propylidynetrimethanol, propoxylated

NOEC (Reproduction) >= 8,5 mg/l

Species: Daphnia magna (Water flea)

Exposure duration: 21 d

Method: OECD Test Guideline 211

Acute toxicity for algae

Propylidynetrimethanol, propoxylated

ErC50 > 100 mg/l

endpoint: Growth inhibition

Species: Desmodesmus subspicatus (Green algae)

Exposure duration: 72 h

Method: Directive 67/548/EEC, Annex V, C.3.

NOEC >= 100 mg/l

endpoint: Growth inhibition

Species: Desmodesmus subspicatus (Green algae)

Exposure duration: 72 h

Method: Directive 67/548/EEC, Annex V, C.3.

ErC50 106 mg/l

endpoint: Growth inhibition
Species: Pseudokirchneriella subcapitata (green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

NOEC 31 mg/l
endpoint: Growth inhibition
Species: Pseudokirchneriella subcapitata (green algae)
Exposure duration: 72 h
Method: OECD Test Guideline 201

Acute bacterial toxicity

Propylidynetrimethanol, propoxylated
EC10 > 10.000 mg/l
Test type: Respiration inhibition
Species: activated sludge
Exposure duration: 3 h
Method: Directive 67/548/EEC, Annex V, C.11.

Sediment Toxicity

Propylidynetrimethanol, propoxylated
Due to the low n-octanol-water partition coefficient, an adsorption on the sediment is not to be expected.

Ecotoxicology Assessment

Propylidynetrimethanol, propoxylated
Acute aquatic toxicity: Based on available data, the classification criteria are not met.
Chronic aquatic toxicity: Based on available data, the classification criteria are not met.
Toxicity Data on Soil: Not expected to adsorb on soil.
Impact on Sewage Treatment: Because of the low bacterial toxicity, there is no risk of an adverse effect on the performance of biological waste water treatment plants.

12.2 Persistence and degradability**Biodegradability**

Propylidynetrimethanol, propoxylated
Test type: aerobic
Inoculum: activated sludge
Biodegradation: 84 %, 28 d, i.e. readily biodegradable
Method: Directive 67/548/EEC Annex V, C.4.D.

Stability in water

Propylidynetrimethanol, propoxylated
Test type: Hydrolysis

The study does not need to be conducted since the substance is readily biodegradable.

Photodegradation

Propylidynetrimethanol, propoxylated
Test type: Phototransformation in air
sensitizer: OH-radicals
Concentration sensibilisator: 500.000 1/cm³
Half-life indirect photolysis: 0,1 - 0,5 d
Method: SRC - AOP (calculation)
After evaporation or exposure to the air, the product will be rapidly degraded by photochemical processes.

12.3 Bioaccumulative potential**Bioaccumulation**

Propylidynetrimethanol, propoxylated
Due to the low n-octanol-water partition coefficient, an accumulation in organisms is not to be expected.

12.4 Mobility in soil

Distribution among environmental compartments

Propylidynetrimethanol, propoxylated
Adsorption
Medium: Soil
Koc value: < 17,8
log Koc value: < 1,25
Method: OECD Test Guideline 121
Highly mobile in soils

12.5 Results of PBT and vPvB assessment

No data available.

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

No data available.

SECTION 13: Disposal considerations

Dispose in accordance with applicable international, national and local laws, ordinances and statutes.

For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.

13.1 Waste treatment methods

After containers have been emptied as thoroughly as possible (e.g. by pouring, scraping or draining until "drip-dry"), they can be sent to an appropriate collection point set up within the framework of the existing take-back scheme of the chemical industry. Containers must be recycled in compliance with national legislation and environmental regulations.

None disposal into waste water.

SECTION 14: Transport information**SANS**

14.1 UN number : Not dangerous goods
14.2 UN proper shipping name : Not dangerous goods
14.3 Transport hazard class(es) : Not dangerous goods
14.4 Packing group : Not dangerous goods
14.5 Environmental hazards : Not dangerous goods

ADN

14.1 UN number : Not dangerous goods
14.2 UN proper shipping name : Not dangerous goods
14.3 Transport hazard class(es) : Not dangerous goods
14.4 Packing group : Not dangerous goods
14.5 Environmental hazards : Not dangerous goods

Dangerous goods classification for inland waterways tanker by request only.

IATA

14.1 UN number : Not dangerous goods
14.2 UN proper shipping name : Not dangerous goods
14.3 Transport hazard class(es) : Not dangerous goods
14.4 Packing group : Not dangerous goods
14.5 Environmental hazards : Not dangerous goods

IMDG

14.1 UN number : Not dangerous goods
14.2 UN proper shipping name : Not dangerous goods

14.3 Transport hazard class(es) : Not dangerous goods
14.4 Packing group : Not dangerous goods
14.5 Marine pollutant : Not dangerous goods

14.6 Special precautions for user

See section 6 - 8.

Additional information : Not dangerous cargo. Keep separated from foodstuffs.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances.
not applicable

Water contaminating class (Germany)

1 slightly water endangering

Identification number according to AwSV: 6.988

(in accordance with Annex 4 to the Directive on Water-Hazardous Substances)

Any national regulations for the handling of hazardous substances must be observed.

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been conducted for this substance / mixture resp. its components.

SECTION 16: Other information

Safety precautions for handling freshly molded polyurethane parts:

Depending on the production parameters, any uncovered surfaces of freshly molded polyurethane parts using this raw material may contain traces of substances (e. g. starting and reaction products, catalysts, release agents) with hazardous characteristics. Skin contact with traces of these substances must be avoided. Therefore, during demolding or other handling of fresh molded parts, protective gloves tested according to DIN-EN 374 (e.g. nitrile rubber $\geq 0,35$ mm thick, breakthrough time ≥ 480 min, or according to recommendations from glove makers thinner gloves that need to be changed in compliance with breakthrough times more frequently) must be used. Depending on formulation and processing conditions, the requirements may be different from handling of the pure substances. Closed protective clothing is required for the protection of other areas of skin.

No registration number is given for this substance because the substance or its use are exempt from registration according to article 2 of the Regulation (EC) No 1907/2006, the annual tonnage does not require a registration, the registration number may be confidential according to article 10 (a) (xi) or the registration is planned for a later date.

Abbreviations and acronyms

ADN	Accord européen relatif au transport international des marchandises Dangereuses par voie de Navigation intérieure
ADR	Accord européen relatif au transport international des marchandises Dangereuses par Route
ANSI	American National Standards Institute
ASTM	American Society of Testing and Materials (US)
ATE	Acute Toxic Estimate
AwSv	Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen
BCF	Bioconcentration Factor
CAS	Chemical Abstract Service
CLP	Regulation on Classification, Labelling and Packaging of Substances and Mixtures
CMR	Cancerogenic Mutagenic Reprotoxic
DIN	Deutsches Institut für Normung
DNEL	Derived No-Effect Level
EC...	Effect Concentration ... %
EWC	European Waste Catalogue
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LOAEL	Lowest Observable Adverse Effect Level
LC...	Lethal Concentration, ...%
LD...	Lethal Dose, ...%
MARPOL	International Convention for the Prevention of Pollution From Ships
NOAEL	No Observed Adverse Effect Level
NOEL/NOEC	No Observed Effect Level/Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	persistent, bioaccumulative, toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire de marchandises Dangereuses
STOT	Specific Target Organ Toxicity
TRGS	Technische Regeln für Gefahrstoffe
vPvB	very Persistent, very Bioaccumulative
WGK	Wassergefährdungsklasse

Further information

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.

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

1.1. Product identifier

Product Name : Rapido – Resin

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

Recommended use : Art and crafts

1.3. Details of the supplier of the safety data sheet

Supplier Eli-Chem Resins UK Ltd T/A
 212 Dunsfold Park
 Stovolds Hill
 Cranleigh
 GU6 8GA (UK)
 +44 (0)1483 266636 (09:00 - 17:00 Mon-Thur / 09:00 - 16:00 Fri)
 sales@elichem.co.uk

1.4. Emergency telephone number

Emergency number : +44 (0)1483 266636 office hours only

SECTION 2: Hazards Identification**2.1. Classification of the substance or mixture**

According to Regulation (EC) No 1272/2008 [CLP]

Acute Tox. 4 (Inhalation - vapour)
Eye Dam./Irrit. 2
Skin Corr./Irrit. 2
STOT SE 3 (irritating to respiratory system)
Skin Sens. 1
Resp. Sens. 1
Carc. 2
STOT RE 2 (by inhalation)

H315, H317, H319, H332, H334, H335, H351, H373

For the classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements

Globally Harmonized System, EU (GHS)

Pictogram:



Signal Word:

Danger

Hazard Statement:

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 (Respiratory system) through prolonged or repeated exposure (inhalation).

Precautionary Statements (Prevention):

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P285	In case of inadequate ventilation wear respiratory protection.

SAFETY DATA SHEET

RAPIDO - HARDENER

according to Regulation (EC) No. 1907/2006

Revision Date: 13.12.2023

Revision: 3

Supersedes Date: 24.07.2023

Precautionary Statements (Response):

P302 + P352

IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Precautionary Statements (Storage):

P403 + P233

Store in a well-ventilated place. Keep container tightly closed.

Precautionary Statements (Disposal):

P501

Dispose of contents/container to hazardous or special waste collection point.

Labeling of special preparations (GHS):

EUH204: Contains isocyanates. May produce an allergic reaction.

According to Regulation (EC) No 1272/2008 [CLP]

Hazard determining component(s) for labelling: Isocyanic acid, polymethylenepolyphenylene ester (P-MDI)

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

No specific dangers known, if the regulations/notes for storage and handling are considered.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Chemical nature

Polymer

Isocyanic acid, polymethylenepolyphenylene ester (P-MDI) (Content (W/W): 100 %)

CAS Number: 9016-87-9

For the classifications not written out in full in this section, including the hazard classes and the hazard statements, the full text is listed in section 16.

3.2. Mixtures

Not applicable

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

Remove contaminated clothing immediately and clean before re-use or dispose it if necessary.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:

After contact with skin, wash immediately with plenty of water. Consult a doctor if skin irritation persists.

On contact with eyes:

Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:

Immediately rinse mouth and then drink plenty of water, do not induce vomiting, seek medical attention.

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

Symptoms: tightness in the chest, coughing, difficulty breathing, Eye irritation, skin irritation, allergic symptoms

Hazards: Symptoms can appear later.

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

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote, administer corticosteroid dose aerosol to prevent pulmonary edema.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media:

dry powder, carbon dioxide, alcohol-resistant foam, water spray

Unsuitable extinguishing media for safety reasons:

water jet

5.2. Special hazards arising from the substance or mixture

Carbon dioxide, carbon monoxide, hydrogen cyanide; hydrocyanic acid, nitrogen oxides, isocyanate
The substances/groups of substances mentioned can be released in case of fire.

5.3. Advice for fire-fighters

Special protective equipment:

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

Further information:

Keep containers cool by spraying with water if exposed to fire. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective clothing. Information regarding personal protective measures see, section 8. Ensure adequate ventilation. Use breathing apparatus if exposed to vapours/dust/aerosol.

6.2. Environmental precautions

Do not empty into drains. Do not discharge into the subsoil/soil.

6.3. Methods and material for containment and cleaning up

For large amounts: Pump off product.

For residues: Pick up with absorbent material (e.g. sand, sawdust, general-purpose binder). Dispose of absorbed material in accordance with regulations.

Neutralize with a solution of 5 - 10 % Sodium carbonate, 0,2 - 2 % detergents and 90 - 95 % water.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage**7.1. Precautions for safe handling**

Provide suitable exhaust ventilation at the processing machines. Ensure thorough ventilation of stores and work areas. Avoid aerosol formation. When handling heated product, vapours of the product should be ventilated, and respiratory protection used. Wear respiratory protection when spraying. Danger of bursting when sealed gastight. Protect against moisture. Clean up contamination as soon as they occur. Provide basic employee training to prevent/minimize exposures. Products freshly manufactured from isocyanates can contain incompletely reacted isocyanates and other dangerous substances, e.g. primary aromatic amines. Industrial cleaning with aprotic polar solvents (meeting the IUPAC definition) may lead to formation of hazardous primary aromatic amine (>0,1%). See Section 11.

Protection against fire and explosion:
No special precautions necessary.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from water. Segregate from foods and animal feeds. Segregate from acids and bases.

Suitable materials for containers: Carbon steel (Iron), High density polyethylene (HDPE), Low density polyethylene (LDPE), tinned carbon steel (Tinplate), Stainless steel 1.4301 (V2)

Unsuitable materials for containers: Paper/Fibreboard

7.3. Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure Controls/Personal Protection**8.1. Control parameters**

Components with occupational exposure limits

101-68-8: 4,4'-methylenediphenyl diisocyanate; diphenylmethane-4,4'-diisocyanate

PNEC

The obligation to register acc. to the REACH Regulation (EC) No 1907/2006 does not apply to polymers.

DNEL

The obligation to register acc. to the REACH Regulation (EC) No 1907/2006 does not apply to polymers.

8.2. Exposure controlsPersonal protective equipment

Respiratory protection:

Respiratory protection in case of vapour/aerosol release. (Combination filter EN 14387 A-P2)

Hand protection:

Chemical resistant protective gloves (EN 374)

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374):

butyl rubber (butyl) - 0.7 mm coating thickness

nitrile rubber (NBR) - 0.4 mm coating thickness

chloroprene rubber (CR) - 0.5 mm coating thickness

Unsuitable materials

polyvinylchloride (PVC) - 0.7 mm coating thickness

Polyethylene-Laminate (PE laminate) - ca. 0.1 mm coating thickness

Suitable materials that provide sufficient protection for industrial cleaning with aprotic polar solvents (meeting the IUPAC definition):

butyl rubber (butyl) - 0.7 mm coating thickness

nitrile rubber (NBR) - 0.4 mm coating thickness

chloroprene rubber (CR) - 0.5 mm coating thickness

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:

safety shoes (e.g. according to EN 20346)

General safety and hygiene measures

Do not breathe vapour/spray. With products freshly manufactured from isocyanates body protection and chemical resistant protective gloves is recommended. Wearing of closed work clothing is required additionally to the stated personal protection equipment. No eating, drinking, smoking or tobacco use at the place of work. Take off immediately all contaminated clothing. Hands and/or face should be washed before breaks and at the end of the shift. At the end of the shift the skin should be cleaned and skin-care agents applied.

SECTION 9: Physical and Chemical Properties**9.1. Information on basic physical and chemical properties**

Form: liquid
Colour: brown

Odour:	earthy, musty	
Odour threshold:	not applicable	
pH value:	not applicable	
Freezing point:	< 10 °C	
Boiling point:	330 °C (1,013 mbar)	
Flash point:	204 °C	
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.	
Flammability:	not flammable	
Lower explosion limit:	For liquids not relevant for classification and labelling., The lower explosion point may be 5 - 15 °C below the flash point.	
Upper explosion limit:	For liquids not relevant for classification and labelling.	
Ignition temperature:	> 600 °C	
Vapour pressure:	< 0.01 Pa (25 °C)	
Density:	1.24 g/cm ³ (15 °C) 1.23 g/cm ³ (20 °C) 1.21 g/cm ³ (50 °C)	
Relative density:	approx. 1.22 (20 °C)	
Relative vapour density (air):	8.5 (20 °C)	
Solubility in water:	No applicable information available.	
Partitioning coefficient n-octanol/water (log Kow):	not applicable	
Thermal decomposition:	> 230 °C	
Viscosity, dynamic:	170 - 250 mPa.s (25 °C)	(DIN 53018)
Explosion hazard:	not explosive	
Fire promoting properties:	not fire-propagating	

9.2. Other information

Miscibility with water:

Reacts with water.

Other Information:

If necessary, information on other physical and chemical parameters is indicated in this section.

SECTION 10: Stability and Reactivity

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals: No corrosive effect on metal.

10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions

10.4. Conditions to avoid

Temperature: < 15 °C

Avoid moisture.

10.5. Incompatible materials

Substances to avoid:

acids, alcohols, amines, water, Alkalines

10.6. Hazardous decomposition products

No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:

Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact. Of moderate toxicity after short-term inhalation.

Experimental/calculated data:
LC50 rat (by inhalation): approx. 0.493 mg/l 4 h

Irritation

Assessment of irritating effects:
Eye contact causes irritation. Skin contact causes irritation.

Respiratory/Skin sensitization

Assessment of sensitization:
The substance may cause sensitization of the respiratory tract. Sensitization after skin contact possible.

Germ cell mutagenicity

Assessment of mutagenicity:
The substance was mutagenic in various test systems with microorganisms and cell cultures; however, these results could not be confirmed in tests with mammals.

Carcinogenicity

Assessment of carcinogenicity:
Indication of possible carcinogenic effect in animal tests. However, the relevance of this result for humans is unclear. The substance was tested in form of respirable aerosols.

Industrial cleaning with aprotic polar solvents (meeting the IUPAC definition) may lead to formation of hazardous primary aromatic amine (>0,1%). Primary aromatic amines are chemicals that are regarded as potentially carcinogenic for humans based on animal testing. Some of these chemicals are known human carcinogens. No adverse health effects are anticipated if recommended personal protective equipment and industrial hygiene practices are used.

Experimental/calculated data:
rat (by inhalation)
Result: positive

Reproductive toxicity

No data available.

Developmental toxicity

Assessment of teratogenicity:

Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Specific target organ toxicity (single exposure)

Assessment of STOT single:
Causes temporary irritation of the respiratory tract.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
The substance may cause damage to the lung even after repeated inhalation of low doses, as shown in animal studies.

Experimental/calculated data:
NOEL
rat by inhalation

Aspiration hazard

No aspiration hazard expected.

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms.

Toxicity to fish:
LC0 (96 h) > 1,000 mg/l, Fish (other)

Aquatic invertebrates:
EC0 (24 h) > 500 mg/l, daphnia (other)

Aquatic plants:
EC0 (72 h) 1,640 mg/l, Scenedesmus subspicatus (OECD Guideline 201)

12.2. Persistence and degradability

Elimination information:
< 10 % BOD of the ThOD (28 d) (OECD Guideline 302 C) (aerobic, activated sludge) Under test conditions no biodegradation observed.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:
Does not significantly accumulate in organisms.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Adsorption in soil: Adsorption to solid soil phase is not expected.

12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

12.6. Other adverse effects

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

12.7. Additional information

Adsorbable organically-bound halogen (AOX):
This product contains no organically-bound halogen.

Other ecotoxicological advice:
Do not release untreated into natural waters. Do not allow to enter soil, waterways or waste water channels.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Incinerate in suitable incineration plant, observing local authority regulations.
Dispose of isocyanate waste in dry containers and never mix together with other wastes (reaction, dangerous pressure build up).

Waste key:
08 05 01[▫] waste isocyanates

Contaminated packaging:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.
This material and its container must be disposed of in a safe way.

SECTION 14: Transport Information**Land transport**

ADR

Not classified as a dangerous good under transport regulations

UN number: Not applicable
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known

RID

Not classified as a dangerous good under transport regulations

UN number: Not applicable
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known

Inland waterway transport

ADN

Not classified as a dangerous good under transport regulations

UN number: Not applicable
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known

Transport in inland waterway vessel

Not classified as a dangerous good under transport regulations

UN number: Not applicable
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

UN number: Not applicable
UN proper shipping name: Not applicable

Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations
UN number: Not applicable
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known

14.1. UN number

See corresponding entries for "UN number" for the respective regulations in the tables above.

14.2. UN proper shipping name

See corresponding entries for "UN proper shipping name" for the respective regulations in the tables above.

14.3. Transport hazard class(es)

See corresponding entries for "Transport hazard class(es)" for the respective regulations in the tables above.

14.4. Packing group

See corresponding entries for "Packing group" for the respective regulations in the tables above.

14.5. Environmental hazards

See corresponding entries for "Environmental hazards" for the respective regulations in the tables above.

14.6. Special precautions for user

See corresponding entries for "Special precautions for user" for the respective regulations in the tables above.

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

Regulation: IBC
Shipment approved: 1
Pollution name: Polymethylene polyphenyl isocyanate
Pollution category: Y
Ship Type: 2

SECTION 15: Regulatory Information

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

If it is intended to use materials for the manufacture of consumer goods (e. g. products which will come into contact with foodstuffs or with the skin, toys) or medical products, national and international regulations have to be observed. Where no regulations exist, consumer goods or medical products must at least comply with European legislation. We recommend contacting our Sales and our Product Safety departments.

15.2. Chemical Safety Assessment

The obligation to register acc. to the REACH Regulation (EC) No 1907/2006 does not apply to polymers.

SECTION 16: Other Information

Full text of the classifications, including the hazard classes and the hazard statements, if mentioned in section 2 or 3:

Acute Tox.	Acute toxicity
Eye Dam./Irrit.	Serious eye damage/eye irritation
Skin Corr./Irrit.	Skin corrosion/irritation
STOT SE	Specific target organ toxicity — single exposure
Skin Sens.	Skin sensitisation
Resp. Sens.	Respiratory sensitisation
Carc.	Carcinogenicity
STOT RE	Specific target organ toxicity — repeated exposure
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 (Respiratory system) through prolonged or repeated exposure (inhalation).

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.
