## 1 IDENTIFICATION OF HAZARDOUS CHEMICAL AND OF THE SUPPLIER

**Product identifier**
**Trade name: Weberfloor PUC SL (Part B)**
**Substance: Polyurethane self smoothing screed**
**CAS No: Mixture**

**Details of the supplier of the safety data sheet**
**Manufacturer/Supplier:**
Saint-Gobain (Singapore) Pte Ltd
2 Venture Drive, #13-18 Vision Exchange, Singapore 608526
Phone: +65 6330 8288
Fax: +65 6330 8288

Saint-Gobain Weber (M) Sdn Bhd
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## 2 HAZARDS IDENTIFICATION

**Classification**
Acute toxicity, Inhalative, Category 4 (H332), Skin irritation, Category 2 (H315), Eye irritation, Category 2 (H319), Sensitization of the respiratory airways, Category 1 (H334), Sensitization of the skin, Category 1 (H317), Specific target organ toxicity (single exposure), Category 3 (H335) Specific target organ toxicity (repeated exposure), Category 2 (H373)

**Hazard Pictograms**

**Signal Word**
Danger

**Hazard Statements**

| | |
|---|---|
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H317 | May cause allergic skin reaction. |
| H332 | Harmful if inhaled. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335 | May cause respiratory irritation. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |

**CAUTIONARY STATEMENTS**
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. Wear protective gloves/ eye protection/ face protection. IF ON SKIN: Wash with plenty of soap and water. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable II for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove II contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/ attention.



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## 3 COMPOSITION AND INFORMATION OF THE INGREDIENTS

| Chemical Name | CAS Number | % |
|---|---|---|
| Diphenylmethane-diisocyanate, isomers and homologues<br>*Acute Tox. 4 Inhalative H332 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Resp. Sens. 1 H334 Skin Sens. 1 H317 Carc. 2 H351 STOT SE 3 H335 STOT RE 2 Inhalative H373*<br>*Specific threshold concentration:*<br>*Eye Irrit. 2 H319 >= 5 %*<br>*Skin Irrit. 2 H315 >= 5 %*<br>*Resp. Sens. 1 H334 >= 0,1 %*<br>*STOT SE 3 H335 >= 5 %* | 9016-87-9 | <=98% |

## 4 FIRST AID MEASURES

**Description of first aid measures**
**General advice**
Soiled, soaked clothing and shoes must be immediately removed, decontaminated and disposed of.
**After inhalation**
Move affected person to fresh air and keep him/her warm, let him/her rest. If there is difficulty in breathing, medical advice is required.
**After skin contact**
Wash the contacted area thoroughly with water and a polyethylene glycol based cleanser. Consult a doctor in the event of a skin reaction.
**After eye contact**
Wash eyes immediately with plenty of clean water for at least 10 minutes and seek medical advice if irritation persist.
**After swallowing**
Do not induce vomiting. Seek medical attention.

**Most important symptoms and effects, both acute and delayed**
Notes to physician: The product irritates the respiratory tract and may trigger sensitisation of the skin and respiratory tract. Treatment of acute irritation or bronchial constriction is primarily symptomatic. Extended medical treatment may be required depending on the degree of exposure and the severity of the symptoms.

**Indication of any immediate medical attention and special treatment needed**
Therapeutic measures: No information available.

## 5 FIRE-FIGHTING MEASURES

**Extinguishing media**
**Suitable extinguishing media:** Carbon dioxide ($CO_2$), Foam, extinguishing powder, in cases of larger fires, water spray should be used.
**Unsuitable extinguishing media:** High volume water jet.
**Special hazards arising from the substance or mixture:** Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen, isocyanate vapors and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes. Fire in vicinity poses risk of pressure build-up and rupture. Containers at risk from fire should be cooled with water and, if possible, removed from the danger area.
**Advice for firefighters**
During fire-fighting respirator with independent air-supply and airtight garment is required. Do not allow contaminated extinguishing water to enter the soil, ground-water or surface waters.



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## 6 ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**
Put on protective equipment (see section 8). Ensure adequate ventilation/exhaust extraction. Keep unauthorized persons away.

**Environment related measures**
Do not allow to escape into waterways, wastewater or soil.

**Methods and material for containment and cleaning up**
Remove mechanically; cover the remainder with wet, absorbent material (e.g. sawdust, chemical binder based on calcium silicate hydrate, sand). After approx. one hour transfer to waste container and do not seal (evolution of $CO_2$). Keep damp in a safe ventilated area for several days. Spill area can be decontaminated with the following recommended decontamination solution: Decontamination solution 1: 8-10% sodium carbonate and 2% of liquid soap in water Decontamination solution 2: Liquid/yellow soap (potassium soap with ~15% anionic tenside): 20ml; Water:700ml; Polyethylenglycol (PEG 400): 350ml

**Reference to other sections:** For further disposal measures see section 13.

## 7 HANDLING AND STORAGE

**Handling**
Provide sufficient air exchange and/or exhaust in work rooms.
In all workplaces or parts of the plant where high concentrations of isocyanate aerosols and/or vapours may be generated (e.g. during pressure release, mould venting or when cleaning mixing heads with an air blast), appropriately located exhaust ventilation must be provided in order to prevent occupational exposure limits from being exceeded. The air should be drawn away from the personnel handling the product The efficiency of the exhaust equipment should be periodically checked. The threshold limit values noted in section 8 must be monitored.
The personal protective measures described in section 8 must be observed. Contact with skin and eyes and inhalation of vapours must be avoided under all circumstances.
Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at end of work and use skin-protecting ointment. Keep working clothes separately. Take off all contaminated clothing immediately.
Decontaminate, destroy and dispose of soiled protective clothing (see Section 13).

**Storage**
Keep container tightly closed and dry. Further information on the storage conditions which must be observed to preserve quality can be found in our product information sheet.

Specific end use
No Information available

## 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Engineering Controls:** Use with adequate general and local exhaust ventilation.
**Hygiene Measures:** Do not eat, drink, smoke or drug taking in workplace. Wash hands before break or after work.
**Respiratory Protection:** General room ventilation is required.
**Hand Protection:** Chemical resistance gloves/ PVC gloves.
**Eye/Face Protection:** Safety goggles with side shields.
**Skin Protection:** Light protective clothing.



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## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**
**General Information**

| | |
|---|---|
| **Appearance:** | Liquid |
| **Colour:** | Brown |
| **Odour:** | Earthy, musty |
| **Odour Threshold:** | Not established |
| **pH:** | Not applicable |
| **Pour Point:** | < 0°C (ISO 3016) |
| **Boiling Point/Range:** | > 300°C at 1.013 hPa (DIN 53171) |
| **Flash Point:** | > 200°C |
| **Evaporation Rate:** | Not established |
| **Flammability (solid, gas):** | Not applicable |
| **Burning Number:** | Not applicable |
| **Vapour Pressure:** | Diphenyl-methane-diisocyanate, (MDI)<br>< 0,00001 hPa at 20°C<br>< 0,0005 hPa (50°C)<br>For products with a very low vapour pressure, the apparent vapour pressure may exceed the vapour pressure of the pure product due to conditions of manufacturing, storage or transportation, e.g. by solved gases like nitrogen or carbon dioxide.<br>1 hPa at 20°C EG A4<br>12 hPa at 50°C EG A4<br>17 hPa at 55°C EG A4 |
| **Vapour Density:** | Not established |
| **Density:** | 1,238 g/cm³ at 20°C (DIN 51757) |
| **Miscibility with water:** | Immiscible at 15°C |
| **Surface tension:** | Not established |
| **Partition coefficient:** (n−octanol/water) | Not established |
| **Auto-ignition Temperature:** | Not applicable |
| **Ignition Temperature:** | > 500°C (DIN 51794) |
| **Decomposition Temperature:** | Not established |
| **Viscosity, dynamic:** | >= 200 mPa.s at 20°C (DIN 53019) |
| **Explosive properties:** | Not established |
| **Dust explosion class:** | Not applicable |
| **Oxidising properties:** | Not established |

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

## 10 STABILITY AND REACTIVITY

**Reactivity:** This information is not available.
**Chemical stability:** Polymerises at about 200°C with evolution of $CO_2$.
**Possibility of hazardous reactions:** Exothermic reaction with amines and alcohols; reacts with water forming $CO_2$; in closed containers, risk of bursting owing to increase of pressure.
**Conditions to avoid:** This information is not available.
**Incompatible materials:** This information is not available.
**Hazardous decomposition products:** No hazardous decomposition products when stored and handled correctly.



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## 11 TOXICOLOGICAL INFORMATION

**Please find below the data available to us:**
**Information on toxicological effects**
Acute toxicity, oral
diphenylmethane-diisocyanate, isomers and homologues
LD50 rat, male/female: > 10,000 mg/kg
Method: OECD Test Guideline 401

Acute toxicity, dermal
diphenylmethane-diisocyanate, isomers and homologues
LD50 rabbit, male/female: > 9,400 mg/kg
Method: OECD Test Guideline 402

Acute toxicity, inhalation
diphenylmethane-diisocyanate, isomers and homologues
LC50 rat, male/female: 0.31 mg/l, 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

The test atmosphere generated in the animal study is not representative of workplace environments, how the substance is placed on the market, and how it can reasonably be expected to be used. Therefore, the test result cannot be directly applied for the purpose of assessing hazard. Based on expert judgment and the weight of the evidence, a modified classification for acute inhalation toxicity is justified.

Assessment: Harmful by inhalation.
Converted acute toxicity point estimate 1.5 mg/l
Test atmosphere: dust/mist
Method: Expert judgement

Primary skin irritation
diphenylmethane-diisocyanate, isomers and homologues
Species: rabbit Result: slight irritant
Method: OECD Test Guideline 404

Primary mucosae irritation
diphenylmethane-diisocyanate, isomers and homologues
Species: rabbit
Result: non-irritant
Method: OECD Test Guideline 405
Toxicological studies of a comparable product.

Sensitisation
diphenylmethane-diisocyanate, isomers and homologues
Skin sensitisation according to Magnusson/Kligmann (maximizing test)
Species: Guinea pig
Result: negative
Classification: Does not cause skin sensitization.
Method: OECD Test Guideline 406

Skin sensitization (local lymph node assay (LLNA))
Species: Mouse
Result: positive
Classification: May cause sensitization by skin contact.
Method: OECD Test Guideline 429



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Toxicological studies of a comparable product.

Respiratory sensitization
Species: rat
Result: positive
Classification: May cause sensitization by inhalation.

Subacute, subchronic and prolonged toxicity
diphenylmethane-diisocyanate, isomers and homologues
NOAEL: 0,2 mg/m³
LOAEL (Lowest observable adverse effect level): 1 mg/m³ application
Route: Inhalative
Species: rat, male/female
Dose Levels: 0 - 0,2 - 1 - 6 mg/m³
Exposure duration: 2 a
Frequency of treatment: 6 hours a day, 5 days a week
Target Organs: Lungs, Nasal inner lining
Test substance: as aerosol
Method: OECD Test Guideline 453
Findings: Irritation to nasal cavity and to lungs.
Studies of a comparable product.

Carcinogenicity
diphenylmethane-diisocyanate, isomers and homologues
Species: rat, male/female
Application Route: Inhalative
Dose Levels: 0 - 0,2 - 1 - 6 mg/m³
Test substance: as aerosol
Exposure duration: 2 a
Frequency of treatment: 6 hours/day, 5 days/week
Method: OECD Test Guideline 453
Occurrence of tumours in the highest dose group.

Reproductive toxicity/Fertility
diphenylmethane-diisocyanate, isomers and homologues
No data available.

Reproductive toxicity/Teratogenicity
diphenylmethane-diisocyanate, isomers and homologues
NOAEL (teratogenicity): 12 mg/m³
NOAEL (maternal): 4 mg/m³
NOAEL (developmental toxicity): 4 mg/m³
Species: rat, female
Application Route: Inhalative
Dose Levels: 0 - 1 - 4 - 12 mg/m³
Frequency of treatment: 6 hours/day (Exposure duration: 10 days (day 6 - 15 p.c.))
Test period: 20 d
Test substance: as aerosol
Method: OECD Test Guideline 414
NOAEL (developmental toxicity): 4 mg/m³
Did not show teratogenic effects in animal experiments.

Genotoxicity in vitro
diphenylmethane-diisocyanate, isomers and homologues
Test type: Salmonella/microsome test (Ames test)
Test system: Salmonella typhimurium



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Metabolic activation: with/without
Result: negative
Method: OECD Test Guideline 471

Genotoxicity in vivo
diphenylmethane-diisocyanate, isomers and homologues
Test type: Micronucleus test
Species: rat, male
Application Route: Inhalative (exposure period: 3x1h/day over 3 weeks)
Result: negative
Method: OECD Test Guideline 474
Studies of a comparable product.

STOT evaluation – one-time exposure
diphenylmethane-diisocyanate, isomers and homologues
Route of exposure: Inhalative
Target Organs: Respiratory Tract May cause respiratory irritation.

STOT evaluation – repeated exposure
diphenylmethane-diisocyanate, isomers and homologues
Route of exposure: Inhalative
Target Organs: Respiratory Tract
May cause damage to organs through prolonged or repeated exposure.

Aspiration toxicity
diphenylmethane-diisocyanate, isomers and homologues
Based on available data, the classification criteria are not met.

CMR Assessment
diphenylmethane-diisocyanate, isomers and homologues
Carcinogenicity: Suspected of causing cancer by inhalation (Carc. 2).
Mutagenicity: In vitro an in vivo tests did not show mutagenic effects. Based on available data, the classification criteria are not met.
Teratogenicity: Did not show teratogenic effects in animal experiments. 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
diphenylmethane-diisocyanate, isomers and homologues
Acute effects: Harmful if inhaled. The product causes irritation of eyes, skin and mucous membranes.
Sensitization: May cause sensitization by inhalation and skin contact.

Additional information
diphenylmethane-diisocyanate, isomers and homologues
Special properties/effects: Over-exposure entails the risk of concentration-dependent irritating effects on eyes, nose throat, and respiratory tract. Delayed appearance of the complaints and development of hypersensitivity (difficult breathing, coughing, asthma) are possible. Hypersensitive persons may suffer from these effects even at low isocyanate concentrations, including concentrations below the UK Workplace Exposure Limit (WEL).
Prolonged contact with the skin may cause tanning and irritant effects.



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## 12 ECOLOGICAL INFORMATION

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

**Toxicity**
Acute Fish toxicity
diphenylmethane-diisocyanate, isomers and homologues
LC50 > 1,000 mg/l
Test type: Acute Fish Toxicity
Species: Danio rerio (zebra fish)
Exposure duration: 96 h
Method: OECD Test Guideline 203

Chronic Fish toxicity
diphenylmethane-diisocyanate, isomers and homologues
Study scientifically not justified.

Acute toxicity for daphnia
diphenylmethane-diisocyanate, isomers and homologues
EC50 > 1,000 mg/l
Test type: static test
Species: Daphnia magna (Water flea)
Exposure duration: 24 h
Method: OECD Test Guideline 202

Chronic toxicity to daphnia
diphenylmethane-diisocyanate, isomers and homologues
NOEC (Reproduction) > 10 mg/l
Species: Daphnia magna (Water flea)
Exposure duration: 21 d
Method: OECD Test Guideline 202

Acute toxicity for algae
diphenylmethane-diisocyanate, isomers and homologues
ErC50 > 1,640 mg/l
Test type: Growth inhibition
Species: scenedesmus subspicatus
Exposure duration: 72 h
Method: OECD Test Guideline 201

Acute bacterial toxicity
diphenylmethane-diisocyanate, isomers and homologues
EC50 > 100 mg/l
Test type: Respiration inhibition
Species: activated sludge
Exposure duration: 3 h
Method: OECD Test Guideline 209

Toxicity to soil dwelling organisms
diphenylmethane-diisocyanate, isomers and homologues
NOEC (mortality) > 1,000 mg/kg
Species: Eisenia fetida (earthworms)
Exposure duration: 14 d
Method: OECD Test Guideline 207



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Toxicity to terrestrial plants
diphenylmethane-diisocyanate, isomers and homologues
NOEC (seedling emergence) > 1,000 mg/kg
Species: Avena sativa (oats)
Exposure duration: 14 d
Method: OECD Test Guideline 208

NOEC (Growth rate) > 1,000 mg/kg
Species: Avena sativa (oats)
Exposure duration: 14 d
Method: OECD Test Guideline 208

NOEC (seedling emergence) > 1,000 mg/kg
Species: Lactuca sativa (lettuce)
Exposure duration: 14 d
Method: OECD Test Guideline 208

NOEC (Growth rate) > 1,000 mg/kg
Species: Lactuca sativa (lettuce)
Exposure duration: 14 d
Method: OECD Test Guideline 208

Ecotoxicology Assessment
diphenylmethane-diisocyanate, isomers and homologues
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. The substance is graded as non-critical to soil-dwelling organisms.
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.

**Persistence and degradability**
Biodegradability
diphenylmethane-diisocyanate, isomers and homologues
Test type: aerobic
Inoculum: activated sludge
Biodegradation: 0 %, 28 d, i.e. not inherently degradable
Method: OECD Test Guideline 302 C
According to the results of tests of biodegradability this product is not readily biodegradable.

Stability in water
diphenylmethane-diisocyanate, isomers and homologues
Test type: Hydrolysis
Half-life: 20 h at 25°C
The substance hydrolyzes rapidly in water. Studies of a comparable product.

Photodegradation
diphenylmethane-diisocyanate, isomers and homologues
Test type: Phototransformation in air
Temperature: 25°C
sensitizer: OH-radicals
Concentration sensibilisator: 500,000 1/cm$^3$
Half-life indirect photolysis: 0.92 d
Method: SRC - AOP (calculation)
After evaporation or exposure to the air, the product will be moderately degraded by photochemical processes. Studies of a comparable product.



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**Bioaccumulative potential**
Bioaccumulation
diphenylmethane-diisocyanate, isomers and homologues
Bioconcentration factor (BCF): < 14
Species: Cyprinus carpio (Carp)
Exposure duration: 42 d
Concentration: 0.2 mg/l
Method: OECD Test Guideline 305 C
An accumulation in aquatic organisms is not to be expected.
The substance hydrolyses rapidly in water.
Studies of hydrolysis products.

**Mobility in soil**
No data available.
Environmental distribution
diphenylmethane-diisocyanate, isomers and homologues
no data available

**Results of PBT and vPvB assessment**
No data available.

**Endocrine disrupting properties**
No data available

**Other adverse effects**
Isocyanate reacts with water at the interface forming $CO_2$ and a solid insoluble product with high melting point (polyurea). This reaction is accelerated by surfactants (e.g., detergents) or by water-soluble solvents. Previous experience shows that polyurea is inert and non-degradable.

## 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.

**Waste treatment methods**
After final product withdrawal, all residues must be removed from containers (drip-free, powder-free or paste-free). Once the product residues adhering to the walls of the containers have been rendered harmless, the product and hazard labels must be invalidated. These containers can be returned for recycling to the appropriate centres 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.

## 14 TRANSPORT INFORMATION

| | |
|---|---|
| UN NUMBER: | Not dangerous for transport |
| **(Rail/Road) ADR/RID Shipping Data:** | Not regulated (Not dangerous for transport) |
| **(Sea)IMO Shipping Data:** | Not regulated (Not dangerous for transport) |
| **(Air)ICAO/IATA Shipping Data:** | Not regulated (Not dangerous for transport) |
| PACKING GROUP: | Not dangerous for transport |



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## 15 REGULATORY INFORMATION

Inventory Information
Australia: All components of this product are included in the Australian Inventory of Industrial Chemicals (AIIC) or are not required to be listed on AIIC.
New Zealand: This product is approved or exempt under the Hazardous Substances and New Organisms (HSNO) Act.
European Economic Area (including EU): This product is compliant with the registration of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt and/or registered.
United States (USA): All components of this product are designated as “Active” on the TSCA Inventory or are not required to be listed.
Canada: All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL.
China: All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.
Japan: All components of this product are included on the Japanese (ENCS and ISHL) inventories or are not required to be listed on the Japanese inventories.
Korea: All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory.
Philippines: All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine inventory.
Taiwan: All components of this product are included in the Taiwan chemical substance inventory or are not required to be listed on the Taiwan chemical substance inventory (TCSI).
Malaysia: Safety Data Sheet complies with the Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous
Chemicals) Regulations 2013 & Industry Code of Practice on Chemicals Classification and Hazard Communication 2014 by Department of Occupational Safety and Health, Malaysia.

## 16 OTHER INFORMATION

Full text of hazardous (H) warnings referred to under sections 2, 3 and 10 of the CLP classification (1272/2008/CE).

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 if inhaled.

For internal US delivery: Under § 172.101, Appendix A,DOT (Department of Transportation) it is requested: MDI Reportable Quantity (RQ):5000lbs (2270kg).

ISOPA Guidelines for safe loading/unloading, transport and storage of TDI and MDI. ISOPA Order No.: PSC-0005- GUIDL

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 >= 1.3 mm thick, breakthrough time >= 480 min, or according to recommendations from glove maker’s thinner gloves that need to be changed in compliance with



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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.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.



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