

Health & Safety Sheet

SL PUR Slot FillerISO

According to 1907/2006/EC, article 31

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1 Identification of substance

Product details

Trade name: **SL PUR Slot Filler Polyisocyanate**

Article number: 2206558300000

Manufacturer/Supplier:

Sensor Line GmbH
 Carl-Poellath Straße 19
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Emergency information:

During normal opening times: Product development department

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Material uses: Di-/polyisocyanate components for the production of polyurethanes

2 Hazards identification

Hazard designation:	Information pertaining to particular dangers for man and environment	
	<p>H 315 H 317 H 319 H 332 H 334 H 335 H 351 H 373 R 36/37/38 R 20 R 42/43 R 40 R 48/20</p>	<p>Classification (1272/2008/EC) Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Suspected of causing cancer. May cause damage to organs (respiratory organs) through prolonged or repeated exposure if inhaled.</p> <p>Classification (67/548/EEC, 1999/45/EC): Irritating to eyes, respiratory system and skin. Harmful by inhalation. May cause sensitisation by inhalation and skin contact. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation.</p>
Danger Xn; Harmful		

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Additional information:

For their own protection, persons who suffer from hypersensitivity of the respiratory tract (e.g. asthmatics and chronic bronchitis sufferers) should avoid handling this product.

3 Composition/Data on components:

Chemical characterisation**Description:** Polymeric diphenylmethanediisocyanate / isomers and homologues**Dangerous components:**

CAS NO.	Designation	Concentration
9016-87-9	Diphenylmethanediisocyanate isomers/homologues	100 %

GHS classification (1272/2008/EC): Acute Tox. 4 Inhalative H 332 Skin Irrit. 2 H 315 Eye Irrit. 2 H 319 Sens. Resp. 1 H 334 Skin Sens. 1 H 317 Carc. 2 H 351 STOT SE 3 H 335 STOT RE 2 Inhalative H 373

4 First aid measures

General information

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness bring patient into stable side position for transport.

After skin contact

Instantly wash with warm water and soap or cleanser based on polyethylene glycol and rinse thoroughly for several minutes. Consult doctor if irritation persists.

After eye contact

Rinse opened eye for at least 15 minutes under running lukewarm water. If symptoms persist, consult an ophthalmologist.

After swallowing

DO NOT induce the patient to vomit. In case of persistent symptoms consult doctor.

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 or 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.

5 Fire fighting measures

Suitable extinguishing agents

CO₂, extinguishing powder, halones. In case of larger fires, water spray should be used.

For safety reasons unsuitable extinguishing agents

Water with a full water jet.

Special hazards caused by the material, its products of combustion or flue gases:

In case of fire, formation of carbon monoxide, nitrogen oxide, isocyanate vapour and traces of hydrogen cyanide is possible. Firemen have to wear self-contained breathing apparatus.

Protective equipment: Put on breathing apparatus.

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6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Measures for environmental protection:

Prevent material from reaching sewage system, holes and cellars.

Measures for cleaning/collecting:

Absorb with fluid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose of contaminated material as waste according to item 13. Transfer to waste container after approx. 1 hour. Keep damp in the open air in a safe place (CO₂-formation!) for a few days; the waste can then be disposed of on approved landfill or a special refuse dump. Ensure adequate ventilation.

7 Handling and storage

Handling**Information for safe handling:**

Keep containers tightly closed.

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols. 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), 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 limits noted in chapter 8 must be monitored.

Exhaust ventilation required during spraying or at raw material temperatures above 40°C.

Storage**Requirements to be met by store rooms and containers:**

Keep container tightly closed and dry. Avoid product temperatures above +40°C and below +5°C.

Keep away from foodstuffs and drinks.

Information about storage in one common storage facility: Not required.**Further information about storage conditions:** VCI storage class: 10**Storage class**

Water hazard class (KBwS): 1 - slightly hazardous to water (KBwS).

8 Exposure controls and personal protection

Additional information about design of technical systems:

No further data; see item 15.

Components with critical values that require monitoring at the workplace:

Substance	CAS-No.	Basis	Type	Value	Ceiling Limit Value	Remarks
diphenylmethane-4,4'-diisocyanate	101-68-8	TRGS 900	MAK	0,005 mg/m ³	=2=	Y
diphenylmethane-4,4'-diisocyanate	101-68-8	TRGS 900	STEL FAC		1	Substances listed with both Peak factor and STEL factor. The Peak factor is

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						supplied with the AGW values.
diphenylmethane-4,4'-diisocyanate	101-68-8	TRGS 900	STEL CL			Categorie I: substances for which the localized effect has an assigned OEL respiratory passage.
diphenylmethanediisocyanate, isomers/homologous	9016-87-9	TRGS 900	MAK	0,005 mg/m ³	=2=	
diphenylmethanediisocyanate, isomers/homologous	9016-87-9	TRGS 900	STEL FAC		1	Substances listed with both Peak factor and STEL factor. The Peak factor is supplied with the AGW values.
diphenylmethanediisocyanate, isomers/homologous	9016-87-9	TRGS 900	STEL CL		=2=	Categorie I: substances for which the localized effect has an assigned OEL respiratory passage.

Personal protective equipment

General protective and hygienic measures:

Keep away from acids, alkali and oxidants.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.

Breathing equipment:

In case of brief exposure or low pollution use breathing filter apparatus (German type A2-P2). In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.

Hand protection:	Suitable materials for safety gloves – accord. DIN EN 374-3 Nitrile rubber (NBR) - thickness $\geq 0,35$ mm – break through time > 480 minutes Fluorinated rubber (FKM) - thickness $\geq 0,4$ mm - break through time > 480 minutes Butyl rubber (IIR) - thickness $\geq 0,5$ mm - break through time > 480 minutes Polyvinyl chloride (PVC) - thickness $\geq 0,5$ mm - break through time > 480 minutes Recommendation: contaminated gloves should be disposed of.
Eye protection:	Tightly sealed safety glasses.
Body protection:	Wear suitable protective clothing.
	Safety precautions for handling freshly moulded polyurethane parts: see chapter 16

9 Physical and chemical properties:

Form:	liquid
Colour:	brown
Smell:	earthy, musty

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Change in condition	Value/Range	Unit	Method
Setting point:	< 0	°C	
Boiling point/Boiling range:	> 300	°C	
Flash point	> 200	°C	DIN 51755
Ignition temperature:	> 500	°C	
Self-inflammability:	Product is not selfigniting		
Danger of explosion:			
Steam pressure:	at 20°C	< 0,00001	mbar
	at 50°C	(MDI) 20	hPa (EG A4)
Density	at 25°C	1,22	g/cm ³ DIN 53217
Solubility in / Miscibility with water:	at 20°C	unsol., reacts	g/l
Viscosity:	at 25°C	250	mPas DIN 53018/1+2

10 Stability and reactivity

Dangerous products of composition:

No dangerous decomposition products when stored and handled correctly.

Additional information:

Hazardous reactions: Exothermic reaction with amines and alcohols; reacts with water forming CO₂, in closed containers risk of bursting owing to increase of pressure.

11 Toxicological information

Acute toxicity:

LD 50 /LC 50 values those are relevant for classification:

Components	Type	Species	Value
MDI	LD 50, oral	rat	> 2000 mg/kg
	LC 50, inhalation	rat	inhalative, 490 mg as aerosol/m ³ , 4 h of exposure.

Primary irritant effect:

On the skin:

diphenylmethanediisocyanate, isomers/ homologous rabbit

Result: irritating

Method: OECD Test Guideline 404

Toxicological studies of a comparable product.

On the eye:

Lacrimation, burning, considerable irritation of the outer eye.

Respiration System (aerosol, vapour in high concentration):

Irritation of the mucous membranes in the nose, throat and lungs, dryness of the throat, pressure on the chest, sometimes accompanied by breathing difficulties and headaches. Delayed appearance of the symptoms and allergic reaction in susceptible persons possible.

Sensitisation: Sensitisation possible by inhalation and skin contact.

Subacute, subchronic and prolonged toxicity:

diphenylmethanediisocyanate, isomers/ homologous

Long-term inhalation study of tech. diphenylmethane diisocyanate (PMDI) carried out using mechanically produced, inhalable PMDI aerosols. Aerodynamic diameter: 95 % below 5 µm

Concentrations: 0,2; 1,0 and 6,0 mg/m³ - Animal groups: 120 rats in each (60 female, 60 male)

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Results after clinical and histopathological examination of the animals: 0,2 mg aerosols/m³: No irritation of the respiratory tract or lungs – “no effect level” (NOEL).

1,0 mg aerosols/m³: Slight irritation of and inflammatory changes to the nose, respiratory tract and lungs. No lung tumours.

6,0 mg aerosols/m³: More severe irritation of and chronic inflammatory changes to the nose, respiratory tract and lungs. Accumulation of a yellow substance in the lungs could be observed. 8 benign (statistically increased) and 1 malignant (statistically insignificant) lung tumours were found. The overall increased incidence of lung tumours only in the group which received the highest concentration is closely attributed to the chronic irritation of and the inflammatory changes to the respiratory organs and to the accumulation of the yellow substance in the lungs of the animals.

Additional toxicological information:

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 Limits (WEL). Prolonged contact with the skin may cause tanning and irritant effects.

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:

Harmful

Irritant

12 Ecological information:

General notes:

Do not allow product to reach ground water, water bodies or sewage system.

Danger to drinking water even if small quantities leak into soil. Reaction with water at the interface producing CO₂ and forming a solid and 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.

Toxicity	Method	Species	Duration	Value
Acute fish toxicity	OECD-Test Guideline 203	danio rerio (zebra fish)	96 h	LC 0 > 1000 mg/l
Acute toxicity for daphnia	OECD-Test Guideline 202	daphnia magna (water flea)	24 h	EC 50 > 1000 mg/l
Acute bacterial toxicity	OECD-Test Guideline 209	activated sludge	3 h	EC 50 > 100 mg/l
Biodegradability	OECD-Test Guideline 302c	bio degradation	28 d	0 %; not degradable

13 Disposal considerations

Recommendation:

Should not be disposed of together with household garbage. Do not allow product to reach sewage system.

Waste disposal number:

According AVV: 08 05 01* (SAV 1)

Uncleaned packagings:

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Empty containers may only be disposed of after neutralising any product remaining on the walls of the containers with a mixture of isopropanol, ammonia and water and removal of the warning labels.

Recommendation:

Disposal must be made according to official regulations.

14 Transport information

Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)

ADR/RID-GGVS/E Class: -
Number/Letter: -
UN-Number: -
Designation of goods: -
Inland shipping ADN/ADR: -
ADN/R Class: -
Number/Letter: -
Category: -

Maritime transport IMDG/GGVSea:

IMDG/GGVSea Class: -
Page: -
UN Number: -
EMS Number: -

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: -
UN/ID Number: -
Packaging group: -
Correct technical name: not restr.

Remarks:

No dangerous cargo. Keep away from foodstuffs and drinks. Avoid product temperatures above +40°C and below 5°C. Keep away from acids, alkali and oxidants.

15 Regulatory information

Classification/Labelling regulations:

Contains: Diphenylmethane-4,4'-diisocyanate, isomeres (homologues)

Designation according to EC guidelines:

Symbol: Danger

H-Sätze:

H 315	Causes skin irritation.
H 317	May cause an allergic skin reaction.
H 319	Causes serious eye irritation.
H 332	Harmful if inhaled.
H 334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H 335	May cause respiratory irritation.
H 351	Suspected of causing cancer.
H 373	May cause damage to organs (respiratory organs) through prolonged or repeated exposure if inhaled.

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P-Sätze:

P 260	Do not breathe dust / fume / gas / mist / vapours / spray.
P 280	Wear protective gloves / eye protection / face protection.
P 302 + P 352	IF ON SKIN: Wash with plenty of soap and water.
P 304 + P 340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P 305 + P 351 + P 338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P 308 + P 313	IF exposed or concerned: Get medical advice / attention.

Classification (1272/2008/EG):

Acute toxicity, Inhalative, Category 4 (H 332)

Skin irritation, Category 2 (H 315)

Eye irritation, Category 2 (H319)

Sensitization of respiratory airways, Category 1 (H 334)

Sensitization of the skin, Category 1 (H 317)

Carcinogenicity, Category 2 (H 351)

Specific target organ toxicity (single exposure), Category 3 (H 335)

Specific target organ toxicity (repeated exposure), Category 2 (H 373)

Labelling in accordance with Annex I of directive 67/548/EEC and its amendments and adaptations:

Code letter and hazard designation of product: Xn, Harmful

Contains: Diphenylmethane-4,4'-diisocyanate, isomeres (homologues)

Risk phrases:

R 20	Harmful by inhalation.
R 36/37/38	Irritation to eyes, respiratory system and skin.
R 42/43	May cause sensitisation by inhalation and skin contact.
R 40	Limited evidence of a carcinogenic effect.
R 48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Safety phrases:

S 23	Do not breathe vapour/spray.
S 26	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 28	After contact with skin, wash immediately with plenty of water and soap.
S 36/37	Wear suitable protective clothing and gloves.
S 38	In case of insufficient ventilation, wear suitable respiratory equipment.
S 45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 60	This material and its container must be disposed of as hazardous waste.

National regulations

Classification according to VbF:

German Regulation on Flammable Liquids (VbF) according to § 2.4 not applicable.

Other regulations, limitations and prohibitive regulations

German TLV-values (TRGS 900):

- MDI: 0,005 ppm (ml/m³) corresp. to 0,05 mg/m³ (eight hours average value)

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Peak concentration limit according to Category I

16 Other information:

This version replaces all previous versions.

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

Depending on the production parameters, any uncovered surfaces of polyurethane mouldings produced 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. When demoulding or otherwise handling freshly moulded polyurethane parts, protective textile gloves must be worn as a minimum. Their palm and finger areas should preferably be coated on the outside with nitrile rubber. Protective gloves should be changed daily. The wearing of protective clothing suited to the conditions normally encountered when handling freshly moulded polyurethane parts is recommended.

These data are based on to the best of our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. This 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.

Department issuing data specification sheet:

Product development department.

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