

Material Safety Data Sheet

SL Cast 90-ISO

According to 1907/2006/EC, article 31

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1 Identification of substance

Product details


Trade name: **SL CAST 90 ISO**
 Article number: 2205510134910

Product details		
Trade name	:	SL CAST 90 ISO
Manufacturer/Supplier	:	Sensor Line GmbH Carl-Poellath Straße 19 86529 Schrobenhausen
		Tel.: +49-8252-8943-0; Fax: +49-8252-8943-11
Informing department	:	Product development department sensorline@sensorline.de
Emergency information	:	During normal opening times: Product development department Telephone +49-8252-8943-20
Material uses	:	Component of a Polyurethane system

2 Hazards identification

2.1 Classification of the substance mixture

Classification according to Regulation (EC) No. 1272/2008

Hazard designation:	Information pertaining to particular dangers for man and environment		
	Skin irrit. 2 Skin sens. 1 Eye irrit. 2 Acute Tox. 4 Resp. sens. 1	H 315 H 317 H 319 H 332 H 334	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. Toxic to aquatic life with long lasting effects.
	STOT SE 3 Carc. 2 STOT RE 2	H 335 H 351 H 373	
	Aquatic chronic 2	H 411	
Signal word - Danger			

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2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008

This product is classified and labelled according to the CLP regulations

Hazard pictograms



GHS07

GHS08

GHS09

Signal word: Danger

Hazard determining components of labelling:

Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer

H-Statement:

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.
H 411	Toxic to aquatic life with long lasting effects.

P-Statement:

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)

Aquatic chronic 2 (H 411)

Additional information:

EUH204: Contains isocyanates. May produce an allergic reaction.

2.3 Other hazards

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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.

Results of PBT and vPvB assessment

- PBT: Not applicable.
- vPvB: Not applicable.

3 Composition/Data on components:

Chemical characterisation

Description: Polyetherprepolymer based on a mixture of polymeric diphenylmethanediisocyanate / isomers and homologues

Dangerous components:

CAS NO.	Designation	Concentration
CAS: 25686-28-6 NLP: 500-040-3 Reg.nr.: 01-2119457013-49	Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1B, H317; STOT SE 3, H335	50 – 100 %
CAS: 38640-62-9 EINECS: 254-052-6 Reg.nr.: 01-2119565150-48	bis(isopropyl)naphthalene Asp. Tox. 1, H304; Aquatic Chronic 1, H410	2,5 – 10 %

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 Aqua. Chr. 2 H 411

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.

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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.

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:

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DNELs		
38640-62-9 Bis(isopropyl)naphthalene		
Oral	DNEL (population)	2.1 mg/kg bw/day (Long-term)
Dermal	DNEL (worker)	4.3 mg/kg bw/day (Long-term)
Inhalative	DNEL (population)	2.1 mg/kg bw/day (Long-term)
	DNEL (worker)	30 mg/m ³ (Long-term)
	DNEL (population)	7.4 mg/m ³ (Long-term)

PNECs		
38640-62-9 Bis(isopropyl)naphthalene		
PNEC aqua	0.00026 mg/l (fresh water)	
PNEC aqua	0.000026 mg/l (marine water)	
PNEC sediment	0.94 mg/kg dw (fresh water)	
PNEC soil	0.19 mg/kg dw (soil)	
PNEC STP	0.15 mg/l (380)	

Substance	CAS-No.	Basis	Type	Value	Ceiling Limit Value	Remarks
diphenylmethanediisocyanate, isomers/homologous	25686-28-6	TRGS 900	MAK	0,05 mg/m ³	=2=	
diphenylmethanediisocyanate, isomers/homologous	25686-28-6	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	25686-28-6	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, alcali 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 ≥ 0,35 mm – break through time > 480 minutes Fluorinated rubber (FKM) - thickness ≥ 0,4 mm - break through time > 480 minutes Butyl rubber (IIR) - thickness ≥ 0,5 mm - break through time > 480 minutes Polyvinyl chloride (PVC) - thickness ≥ 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.

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	Safety precautions for handling freshly moulded polyurethane parts: see chapter 16
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9 Physical and chemical properties:

Form:	liquid
Colour:	yellow
Smell:	earthy, musty

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 20°C	1,20 g/cm ³	DIN 53217
Solubility in / Miscibility with water:	at 20°C	unsol., reacts	g/l
Viscosity:	at 20°C	300 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.
Bis(isopropyl) naphthalin	LD 50, oral	rat	> 3900 mg/kg
	LD 50, dermal	rat	> 4000 mg/kg
	LC 50 / 4h inhalation	rat	5,64 mg/l - 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:

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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. diphenylmethanediisocyanate (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)

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.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Carc. 2

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 50 > 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

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Biodegradability	OECD-Test Guideline 302c	bio degradation	28 d	0 %; not degradable
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Aquatic toxicity:	
38640-62-9 bis(isopropyl)naphthalene	
LL 0 / 96 h	0.5 mg/l (fish)
NOEC	0.013 mg/l (Daphnia) (21 d)

Ecotoxicological effects:	
Respiratory inhibition of communal activated sludge EC 20 (mg/l according to ISO 8192 B):	
38640-62-9 bis(isopropyl)naphthalene	
EC 0	0.15 mg/l (Algae) (72 h) 0.16 mg/l (Daphnia) (48 h)

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 EAK-AVV: 08 05 01* (SAV 1)

Uncleaned packagings:

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: 9 (M6) Miscellaneous dangerous substances and articles.
Number/Letter: 9
UN-Number: UN 3082
Designation of goods: 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bis(isopropyl)naphthalin)

Inland shipping ADN/ADR:

ADN/R Class: 9 Miscellaneous dangerous substances and articles.
Number/Letter: UN 3082
Category: A

Maritime transport IMDG/GGVSea:

IMDG/GGVSea Class: 9 Miscellaneous dangerous substances and articles.

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UN Number:	UN 3082
EMS Number:	F-A, S-F
Air transport ICAO-TI and IATA-DGR:	
ICAO/IATA Class:	9 Miscellaneous dangerous substances and articles.
UN/ID Number:	UN 3082
Packaging group:	III
Correct technical name: not restr.	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bis(isopropyl)naphthalin)

Environmental hazards:

Product contains environmentally hazardous substances: bis(isopropyl)naphthalene

Marine pollutant: Yes Symbol (fish and tree)

Special marking (ADR): Symbol (fish and tree)

Special marking (IATA): Symbol (fish and tree)

Transport/Additional information:**ADR**

Limited quantities (LQ) 5L

Excepted quantities (EQ) Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

Transport category 3

Tunnel restriction code E

IMDG

Limited quantities (LQ) 5L

Excepted quantities (EQ) Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

UN "Model Regulation": UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BIS(ISOPROPYL) NAPHTHALENE), 9, III

Remarks:

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

15 Regulatory information**Classification/Labelling regulations:****Designation according to EC guidelines:**

Symbol: Danger

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)
Peak concentration limit according to Category I

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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.

Contact: Mr. Th. Häusler, Dr. A. Möhrke; Dr. J. Urschey