

1. Identification

Product identifier

Trade name: SL=P078 - Urethane Bonding Kit

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

General use: Adhesive, for orthopedic procedures.
For use in industrial installations and professional treatment only.

Details of the supplier of the safety data sheet

Company name: Otto Bock Health Care
Street/POB-No.: 3820 W. Great Lakes Drive
Zip code, city: Salt Lake City, UT 84120
USA

WWW: www.ottobockus.com

Telephone: +1 (801) 956-2400

Telefax: +1 (801) 956-2401

Department responsible for information:
Quality Department,
Telephone: +1 (801) 954-2304 (7 AM – 3 PM, Mountain Time),
Email: USRegulatory@ottobock.com

Additional information: Corporate headquarters:
Ottobock SE & Co. KGaA
Max-Näder-Straße 15
Duderstadt
Germany

Emergency telephone number

CHEMTREC, Telephone: +1 (800) 424-9300

Transport:

CONSULTANK Lutz Harder GmbH (Contract QUALI003)

Telephone: +49 (0)178-4337434 (from USA: 01149 178 4337434)

2. Hazard identification

Classification of the substance or mixture

Acute Toxicity - oral - Category 4

Acute Toxicity - inhalative - Category 3

Skin Irritation - Category 2

Eye Irritation - Category 2A

Respiratory Sensitizer - Category 1

Sensitization - skin - Category 1

Specific Target Organ Toxicity (Repeated Exposure) - Category 2

Aquatic toxicity - chronic - Category 2

Harmful if swallowed.

Toxic if inhaled.

Causes skin irritation.

Causes serious eye irritation.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

May cause damage to organs through prolonged or repeated exposure.

Toxic to aquatic life with long lasting effects.

Label elements

Symbols:



Signal word:

Danger

Hazard statements:

Harmful if swallowed.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Toxic if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause damage to organs through prolonged or repeated exposure.
Toxic to aquatic life with long lasting effects.

Precautionary statements:

Do not breathe dust/fume/gas/mist/vapors/spray.
Wash hands and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
In case of inadequate ventilation wear respiratory protection.

IF SWALLOWED: Immediately call a POISON CENTER/doctor.
IF ON SKIN: Wash with plenty of water/soap.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER/doctor.
Specific treatment (see 'First aid' on this label).
Rinse mouth.
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
Take off contaminated clothing and wash it before reuse.
Collect spillage.

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

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

Other hazards

Special danger of slipping by leaking/spilling product.
Pre-existing skin and respiratory conditions including dermatitis, asthma and chronic lung disease might be aggravated by exposure.

3. Composition/information on ingredients

Mixtures

Relevant ingredients:

CAS No.	Designation	Concentration	Classification
CAS 25322-69-4	Polypropylene glycol	20 - 25 %	Acute Toxicity - oral - Category 4.
CAS 5124-30-1	Dicyclohexylmethan-4,4' diisocyanate	10 - 15 %	Acute Toxicity - inhalative - Category 3. Skin Irritation - Category 2. Eye Irritation - Category 2A. Respiratory Sensitizer - Category 1. Sensitization - skin - Category 1. Specific Target Organ Toxicity (Single Exposure) - Category 3.
CAS 68479-98-1	Diethylmethylbenzenediamine	< 10 %	Acute Toxicity - oral - Category 4. Acute Toxicity - dermal - Category 4. Eye Irritation - Category 2A. Specific Target Organ Toxicity (Repeated Exposure) - Category 2. Aquatic toxicity - acute - Category 1. Aquatic toxicity - chronic - Category 1.
CAS 78-93-3	Butanone	< 10 %	Flammable Liquid - Category 2. Eye Irritation - Category 2A. Specific Target Organ Toxicity (Single Exposure) - Category 3.
CAS 3147-75-9	2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	< 1 %	not classified
CAS 41556-26-7	Bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate	< 1 %	Sensitization - skin - Category 1A. Aquatic toxicity - acute - Category 1 (M-factor = 1). Aquatic toxicity - chronic - Category 1 (M-factor = 1).
CAS 82919-37-7	Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	< 1 %	Sensitization - skin - Category 1. Aquatic toxicity - acute - Category 1. Aquatic toxicity - chronic - Category 1.

The actual concentration or concentration range is withheld as a trade secret.

4. First aid measures

General information:	If medical advice is needed, have product container or label at hand. Take off contaminated clothing and wash it before reuse.
In case of inhalation:	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately get medical attention.
Following skin contact:	Immediately clean with water and soap followed by thorough rinsing. In case of skin reactions, consult a physician.
After eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently consult an ophthalmologist.

After swallowing: Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do not induce vomiting.
Do not give milk or alcoholic beverages. Seek medical attention.

Most important symptoms/effects, acute and delayed

Toxic if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation.

Information to physician

Treat symptomatically.

5. Fire-fighting measures

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:

water spray jet, alcohol resistant foam, carbon dioxide

Extinguishing media which must not be used for safety reasons:

Full water jet

Specific hazards arising from the chemical

In case of fire may be liberated: nitrogen oxides (NOx), isocyanates, carbon monoxide and carbon dioxide.

Protective equipment and precautions for firefighters

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

Additional information:

Use fine water spray to cool endangered containers.

In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

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

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

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

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

If possible, eliminate leakage. Provide adequate ventilation.

Wear appropriate protective equipment. Keep unprotected people away.

Take off contaminated clothing and wash it before reuse.

Environmental precautions:

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

If necessary, notify appropriate authorities.

Methods and material for containment and cleaning up

Methods for clean-up:

Soak up with absorbent materials such as sand, siliceous earth, acid- or universal binder.

Store in special closed containers and dispose of according to ordinance.

Collect in closed containers for disposal.

Additional information:

Special danger of slipping by leaking/spilling product.

7. Handling and storage

Precautions for safe handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed. Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Wear appropriate protective equipment.
Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Take off contaminated clothing and wash it before reuse.
Have eye wash bottle or eye rinse ready at work place.

Precautions against fire and explosion:

Reacts with water, forming carbon monoxide, producing bursting hazard in closed containers due to build-up of pressure.

Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Keep container tightly closed and in a well-ventilated place.
Keep container dry. Keep only in the original container.
Protect from heat and direct sunlight.
Store containers in upright position.

Hints on joint storage:

Keep away from food, drink and animal feedingstuffs.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
5124-30-1	Dicyclohexylmethan-4,4' diisocyanate	USA: ACGIH: TWA	0.054 mg/m ³ ; 0.005 ppm
		USA: NIOSH: Ceiling	0.11 mg/m ³ ; 0.01 ppm
78-93-3	Butanone	USA: ACGIH: STEL	150 ppm
		USA: ACGIH: TWA	(may be absorbed through the skin) 75 ppm
		USA: IDLH: TWA	(may be absorbed through the skin) 3,000 ppm
		USA: NIOSH: STEL	885 mg/m ³ ; 300 ppm
		USA: NIOSH: TWA	590 mg/m ³ ; 200 ppm
		USA: OSHA: TWA	590 mg/m ³ ; 200 ppm

Biological limit values:

CAS No.	Designation	Type	Limit value	Parameter	Sampling
78-93-3	Butanone	USA: ACGIH-BEI, urine	2 mg/L	MEK	end of exposure or end of shift

Appropriate engineering controls

Provide for good ventilation or exhaust system or work with completely self-contained equipment.

Personal protection equipment (PPE)

Respiratory protection:	Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. Recommended Use filter type A (= against vapors of organic substances) according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2. The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.
Hand protection:	Protective gloves according to OSHA Standard - 29 CFR: 1910.138. Observe glove manufacturer's instructions concerning penetrability and breakthrough time.
Eye protection:	Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.
Body protection:	Wear suitable protective clothing.
General hygiene considerations:	Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Take off contaminated clothing and wash it before reuse. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Have eye wash bottle or eye rinse ready at work place.

Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state at 68 °F and 101.3 kPa	liquid
Color:	No data available
Odor:	Nearly odorless
Odor threshold:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flammability:	No data available
Explosion limits:	No data available
Flash point/flash point range:	No data available
Evaporation rate:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
pH:	No data available
Viscosity:	No data available
Solubility:	No data available
Partition coefficient: n-octanol/water:	No data available
Vapor pressure:	No data available
Density:	No data available
Vapor density:	No data available
Particle characteristics:	Not applicable

Additional information

Additional information:	No data available
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10. Stability and reactivity

Reactivity:	Refer to subsection "Possibility of hazardous reactions".
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	Reacts with water, forming carbon dioxide, producing bursting hazard in closed containers due to build-up of pressure.
Conditions to avoid:	Protect from heat and direct sunlight. Protect from moisture contamination.
Incompatible materials:	Water, oxidizing agents, strong acids

11. Toxicological information

Information on toxicological effects

Toxicological effects:	<p>The statements are derived from the properties of the single components. No toxicological data is available for the product as such.</p> <p>Acute toxicity (oral): Acute Toxicity - oral - Category 4 = Harmful if swallowed. ATEmix (calculated: 300 mg/kg < ATE ≤ 2,000 mg/kg)</p> <p>Acute toxicity (dermal): Based on available data, the classification criteria are not met. ATEmix (calculated: > 2,000 mg/kg)</p> <p>Acute toxicity (inhalative): Acute Toxicity - inhalative - Category 3 = Toxic if inhaled.</p> <p>Skin corrosion/irritation: Skin Irritation - Category 2 = Causes skin irritation.</p> <p>Serious eye damage/irritation: Eye Irritation - Category 2A = Causes serious eye irritation.</p> <p>Sensitisation to the respiratory tract: Respiratory Sensitizer - Category 1 = May cause allergy or asthma symptoms or breathing difficulties if inhaled.</p> <p>Skin sensitisation: Sensitization - skin - Category 1 = May cause an allergic skin reaction.</p> <p>Germ cell mutagenicity/Genotoxicity: Lack of data.</p> <p>Carcinogenicity: Lack of data.</p> <p>Reproductive toxicity: Lack of data.</p> <p>Effects on or via lactation: Lack of data.</p> <p>Specific target organ toxicity (single exposure): Lack of data.</p> <p>Specific target organ toxicity (repeated exposure): Specific Target Organ Toxicity (Repeated Exposure) - Category 2 = May cause damage to organs through prolonged or repeated exposure.</p> <p>Aspiration hazard: Lack of data.</p>
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Symptoms

After eye contact: Upon direct contact with eyes may cause burning, tearing, redness.

12. Ecological information

Ecotoxicity

Aquatic toxicity:	Toxic to aquatic life with long lasting effects.
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Persistence and degradability

Further details: No data available

Bioaccumulative potential

Partition coefficient: n-octanol/water:

No data available

Mobility in soil

No data available

Other adverse effects

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

13. Disposal considerations

Waste treatment methods

Product

Recommendation: Incinerate as hazardous waste according to applicable local, state, and federal regulations.

Package

Recommendation: Dispose of waste according to applicable legislation. Handle contaminated packages in the same way as the substance itself.
Non-contaminated packages may be recycled.

14. Transport information

UN number

DOT: UN2206

IMDG, IATA-DGR: UN 2206

UN proper shipping name

DOT: UN 2206, ISOCYANATES, TOXIC, N.O.S. or ISOCYANATE SOLUTIONS, TOXIC, N.O.S.
(Dicyclohexylmethan-4,4' diisocyanate)

IMDG, IATA-DGR: UN 2206, ISOCYANATES, TOXIC, N.O.S. (Dicyclohexylmethan-4,4' diisocyanate)

Transport hazard class(es)

DOT: 6.1

IMDG: Class 6.1, Subrisk -

IATA-DGR: Class 6.1

Packing group

DOT, IMDG: III

IATA-DGR: II

Environmental hazards

Marine pollutant: yes



Transport in bulk according to IMO instruments

No data available

Special precautions for user

USA: Department of Transportation (DOT)

Labels:	6.1
Symbols:	G
Special Provisions:	IB3, T7, TP1, TP13, TP28
Packaging – Exceptions:	153
Packaging – Non-bulk:	203
Packaging – Bulk:	241
Quantity limitations – Passenger aircraft / rail:	60 L
Quantity limitations – Cargo only:	220 L
Vessel stowage – Location:	E
Vessel stowage – Other:	25, 40

Sea transport (IMDG)

EmS:	F-A, S-A
Special Provisions:	223 274
Limited quantities:	5 L
Excepted quantities:	E1
Package - Instructions:	P001, LP01
Package - Provisions:	-
IBC - Instructions:	IBC03
IBC - Provisions:	-
Tank instructions - IMO:	-
Tank instructions - UN:	T7
Tank instructions - Provisions:	TP1, TP13, TP28
Stowage and handling:	Category E. SW1 SW2
Properties and observations:	Liquids with a pungent odour. Immiscible with water but reacts with it to form carbon dioxide. Toxic if swallowed, by skin contact or by inhalation. If under deck, with mechanical ventilation, six air changes per hour, except when carried in closed containers, when two air changes per hour are required. Irritating to skin, eyes and mucous membranes.
Marine pollutant:	yes
Segregation group:	none

Air transport (IATA)

Proper shipping name:	UN 2206, ISOCYANATES, TOXIC, N.O.S. (Dicyclohexylmethan-4,4' diisocyanate)
Hazard label:	Toxic
Excepted Quantity Code:	E4
Passenger and Cargo Aircraft: Ltd.Qty.:	Pack.Instr. Y641 - Max. Net Qty/Pkg. 1 L
Passenger and Cargo Aircraft:	Pack.Instr. 654 - Max. Net Qty/Pkg. 5 L
Cargo Aircraft only:	Pack.Instr. 662 - Max. Net Qty/Pkg. 60 L
Special Provisions:	A3
Emergency Response Guide-Code (ERG):	6L

15. Regulatory information

National regulations - U.S. Federal Regulations

Polypropylene glycol:	TSCA Inventory: listed Clean Air Act: CAA SOCM Chemical: yes
Dicyclohexylmethan-4,4' diisocyanate:	TSCA Inventory: listed Other Environmental Laws: SARA Title III, Section 313, Toxic Release: NPFAS; De Minimis <=1.0 %; Thresholds 25000/10000 lbs NIOSH Recommendations: Occupational Health Guideline: 0412
Diethylmethylenediamine:	TSCA Inventory: listed
Butanone:	TSCA Inventory: listed Clean Air Act: CAA Hazardous Air Pollutants: yes CAA SOCM Chemical: yes Other Environmental Laws: CERCLA: RQ 5000 lbs. RCRA Hazardous Wastes: Waste Code U159, D035; Reg. Level 200.0 mg/L RCRA Groundwater Monitoring: listed NIOSH Recommendations: Occupational Health Guideline: 0069*
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol:	TSCA Inventory: listed
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate:	TSCA Inventory: listed
Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate:	TSCA Inventory: listed

National regulations - U.S. State Regulations

Butanone:	New York Right-To-Know: listed
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Further regulations, limitations and legal requirements

No data available

16. Other information

Text for labeling:	Contains 20 - 25 % Polypropylene glycol, 10 - 15 % Dicyclohexylmethan-4,4' diisocyanate, < 10 % Diethylmethylenediamine, < 10 % Butanone, < 1 % 2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol, < 1 % Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate, < 1 % Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate. As from 24 August 2023 adequate training is required before industrial or professional use.
Revision date:	11/28/2025
Date of first version:	6/30/2015
Reason of change:	General revision: Safety Data Sheet according to HCS 2024 (29 CFR 1910.1200)

Hazard rating systems:



NFPA Hazard Rating:

Health: 3 (Serious)

Fire: 1 (Slight)

Reactivity: 0 (Minimal)

HMIS Version III Rating:

Health: 3 (Serious) - Chronic effects

Flammability: 1 (Slight)

Physical Hazard: 0 (Minimal)

Personal Protection: X = Consult your supervisor

HEALTH	*	3
FLAMMABILITY		1
PHYSICAL HAZARD		0
		X

Abbreviations and acronyms:

Acute Toxicity: Acute toxicity
 Aquatic toxicity - acute: Hazardous to the aquatic environment - acute
 Aquatic toxicity - chronic: Hazardous to the aquatic environment - chronic
 AS/NZS: Australian Standards/New Zealand Standards
 ATEmix: Acute Toxicity Estimate of mixture
 CAS: Chemical Abstracts Service
 CFR: Code of Federal Regulations
 CLP: Classification, Labelling and Packaging
 DMEL: Derived minimal effect level
 DNEL: Derived no-effect level
 DOT: Department of Transportation's Safety Regulations (USA)
 EC: European Community
 EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods
 EN: European Standard
 EQ: Excepted quantities
 Eye Irritation: Eye irritation
 Flammable Liquid: Flammable liquid
 IATA: International Air Transport Association
 IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
 IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
 IMDG Code: International Maritime Dangerous Goods Code
 IMO: International Maritime Organization
 MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
 M-factor: Multiplication factor
 MFSU: Manufacture, formulation, supply and use
 OEL: Occupational Exposure Limit Value
 OSHA: Occupational Safety and Health Administration
 PBT: Persistent, bioaccumulative and toxic
 PNEC: Predicted no-effect concentration
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
 Respiratory Sensitizer: Sensitisation to the respiratory tract
 Sensitization - skin: Skin sensitisation
 Skin Irritation: Skin irritation
 STOT RE: Specific target organ toxicity - repeated exposure
 STOT SE: Specific target organ toxicity - single exposure
 SVHC: Substance of very high concern
 TLV: Threshold Limit Value
 TRGS: Technical Rules for Hazardous Substances
 UN: United Nations
 vPvB: Very persistent and very bioaccumulative
 WEL: Workplace Exposure Limit

Department issuing data sheet

Contact person: see section 1: Department responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.