

SAFETY DATA SHEET

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

Revision date: 01-Aug-2019

Print date: 01-Aug-2019

Version: 2.0

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Conductive Silver Adhesive, Part B

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

1.1 Product identifier

Trade name/designation:

Conductive Silver Adhesive, Part B

Article No.:

LSK-140-B

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

Use of the substance/mixture:

Adhesive.

Restricted to professional users.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

ProGlass GmbH

Michael-Becker-Str. 2

73235 Weilheim an der Teck

GERMANY

Telephone: +49 7023 90013-0

Telefax: +49 7023 90013-23

E-mail: info@proglass.de

Website: www.proglass.de

E-mail (competent person): info@proglass.de

1.4 Emergency phone number

24h: +49 551 19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Respiratory or skin sensitisation (<i>Skin Sens. 1</i>)	H317: May cause an allergic skin reaction.	Calculation
Hazardous to the aquatic environment (<i>Aquatic Acute 1</i>)	H400: Very toxic to aquatic life.	Calculation
Hazardous to the aquatic environment (<i>Aquatic Chronic 1</i>)	H410: Very toxic to aquatic life with long lasting effects.	Calculation
Acute toxicity (dermal) (<i>Acute Tox. 4</i>)	H312: Harmful in contact with skin.	Calculation
Skin corrosion/irritation (<i>Skin Corr. 1B</i>)	H314: Causes severe skin burns and eye damage.	Calculation
Serious eye damage/eye irritation (<i>Eye Dam. 1</i>)	H318: Causes serious eye damage.	Calculation
Reproductive toxicity (<i>Repr. 2</i>)	H361: Suspected of damaging fertility or the unborn child.	Calculation
STOT-repeated exposure (<i>STOT RE 1</i>)	H372: Causes damage to organs through prolonged or repeated exposure.	Calculation

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2.2 Label elements

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

Hazard pictograms:



GHS05
Corrosion



GHS07
Exclamation mark



GHS08
Health hazard



GHS09
Environment

Signal word: Danger

Hazard components for labelling:

2-Piperazin-1-ylethylamine; Trientine

Hazard statements for health hazards	
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.

Hazard statements for environmental hazards	
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements - Prevention	
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

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.
P310	Immediately call a POISON CENTER/doctor.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.

Precautionary statements - Disposal	
P501	Dispose of contents/container to an appropriate recycling or disposal facility.

2.3 Other hazards

No data available.

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SECTION 3: Composition / information on ingredients

3.2 Mixtures

Ingredients:

Product identifiers	Substance name Classification according to Regulation (EC) No. 1272/2008 [CLP]	Content
CAS No.: 7440-22-4 EC No.: 231-131-3 REACH No.: 01-2119555669-21	silver Aquatic Acute 1, Aquatic Chronic 1, Flam. Sol. 1   Danger H228-H410 M-factor (acute): 1000	60 - 90 Wt %
CAS No.: 140-31-8 EC No.: 205-411-0 REACH No.: 01-2119471486-30	2-Piperazin-1-ylethylamine Acute Tox. 3, Acute Tox. 4, Aquatic Chronic 3, Eye Dam. 1, Repr. 2, STOT RE 1, Skin Corr. 1B, Skin Sens. 1    Danger H302-H311-H314-H317-H361-H372-H412	10 - 30 Wt %
CAS No.: 112-24-3 EC No.: 203-950-6	Trientine Acute Tox. 4, Aquatic Chronic 3, Skin Corr. 1B, Skin Sens. 1   Danger H312-H314-H317-H412	1 - 10 Wt %

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove victim out of the danger area. Remove contaminated, saturated clothing immediately. If unconscious place in recovery position and seek medical advice. Do not leave affected person unattended.

Following inhalation:

Provide fresh air.

In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap. If skin irritation or rash occurs: Get medical advice/attention.

After eye contact:

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

After ingestion:

Rinse mouth immediately and drink plenty of water. Get immediate medical advice/attention.

4.2 Most important symptoms and effects, both acute and delayed

Causes serious eye damage. Causes severe burns. May cause an allergic skin reaction. Causes damage to organs through prolonged or repeated exposure. Symptoms may develop several hours following exposure; medical observation therefore necessary for at least 48 hours.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:

Water spray jet, alcohol resistant foam, extinguishing powder, carbon dioxide (CO₂).

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products:

In case of fire may be liberated: carbon oxides (CO_x); Nitrogen oxides (NO_x); metal oxides.

5.3 Advice for firefighters

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

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5.4 Additional information

Use water spray jet to protect personnel and to cool endangered containers. Move undamaged containers from immediate hazard area if it can be done safely. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Personal precautions:

Provide adequate ventilation. Do not get in eyes, on skin, or on clothing. Remove persons to safety.

Protective equipment:

Wear protective gloves/protective clothing/eye protection/face protection. See section 8.

6.1.2 For emergency responders

Personal protection equipment:

Personal protection equipment: see section 8

6.2 Environmental precautions

Do not allow to enter into surface water or drains.

Do not allow to enter into soil/subsoil.

6.3 Methods and material for containment and cleaning up

For containment:

Wipe with absorbent material (e.g. cloth, fleece). Handling larger quantities: Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

For cleaning up:

Water (with cleaning agent)

6.4 Reference to other sections

Safe handling: see section 7,

Personal protection equipment: see section 8,

Disposal: see section 13.

6.5 Additional information

Use appropriate container to avoid environmental contamination.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures

Advices on safe handling:

Provide adequate ventilation. Do not get in eyes, on skin, or on clothing. Wear personal protection equipment (refer to section 8).

Environmental precautions:

Discharge into the environment must be avoided.

Advices on general occupational hygiene

When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse. Wash hands and face before breaks and after work and take a shower if necessary. Draw up and observe skin protection programme.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Keep container tightly closed in a cool, well-ventilated place.

Requirements for storage rooms and vessels:

Floors should be impervious, resistant to liquids and easy to clean. Keep/Store only in original container.

Hints on storage assembly:

Do not store together with: Acids, Alkali (lye), Oxidizing agent. Keep away from food, drink and animal feedingstuffs.

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Further information on storage conditions:

Protect from frost and heat. Protect from sunlight.

7.3 Specific end use(s)

Recommendation:

Adhesive.

SECTION 8: Exposure controls / Personal protection

8.1 Control parameters

8.1.1 Occupational exposure limit values

Limit value type (country)	Substance name	① Long-term occupational exposure limit value ② Short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
IOELV (EU)	silver CAS No.: 7440-22-4	① 0.01 mg/m ³ ⑤ (Silver compounds, soluble, calculated as Ag)
WEL (GB)	silver CAS No.: 7440-22-4	① 0.01 mg/m ³ ⑤ compounds, soluble; calculated as Ag
IOELV (EU)	silver CAS No.: 7440-22-4	① 0.1 mg/m ³ ⑤ (metal)
WEL (GB)	silver CAS No.: 7440-22-4	① 0.1 mg/m ³ ⑤ (metal)

8.1.2 Biological limit values

No data available.

8.1.3 DNEL-/PNEC-values

No data available.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

See section 7. No additional measures necessary.

8.2.2 Personal protection equipment



Eye/face protection:

Eye glasses with side protection (EN 166).

Skin protection:

Tested protective gloves must be worn (EN ISO 374).

Recommended material: FKM (fluoro rubber)

Material thickness: $\geq 0,4$ mm

Breakthrough time (maximum wearing time): ≥ 480 mm

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. The exact breakthrough time must be requested from the protective glove manufacturer and must be observed. Check leak tightness/ impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well.

Respiratory protection:

Usually no personal respiratory protection necessary. Provide adequate ventilation.

Wear breathing apparatus if exposed to vapours/dusts/aerosols. Use appropriate respiratory protection.

Combination filtering device (EN 14387), Filter type A-P2/P3.

Other protection measures:

Wear suitable protective clothing (EN 340).

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8.2.3 Environmental exposure controls

No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state: liquid, pasty

Colour: silver grey

Odour: like Amines

Safety relevant basic data

Parameter		at	Method	Remark
pH	<i>not applicable</i>			
Melting point	<i>not determined</i>			
Freezing point	<i>not determined</i>			
Initial boiling point and boiling range	> 121 °C			
Decomposition temperature	<i>not determined</i>			
Flash point	> 93 °C			
Evaporation rate	<i>not determined</i>			
Auto-ignition temperature	<i>not determined</i>			
Upper/lower flammability or explosive limits	<i>not determined</i>			
Vapour pressure	< 0.013 kPa	20 °C		
Vapour density	<i>not determined</i>			
Density	4.1 g/cm ³			
Bulk density	<i>not applicable</i>			
Water solubility	insoluble			
Partition coefficient: n-octanol/ water	<i>not determined</i>			
Dynamic viscosity	<i>not determined</i>			
Kinematic viscosity	<i>not determined</i>			

9.2 Other information

No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3 Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions. Reaction with: Acids, Alkali (lye) and Oxidizing agent.

10.4 Conditions to avoid

Protect from frost and heat. Protect from sunlight.

10.5 Incompatible materials

Acids, Alkali (lye), Oxidizing agent.

10.6 Hazardous decomposition products

No known hazardous decomposition products. In case of fire may be liberated: carbon oxides (COx); Nitrogen oxides (NOx); metal oxides.

Further information

No data available.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

CAS No.	Substance name	Toxicological information
140-31-8	2-Piperazin-1-ylethylamine	LD₅₀ oral: 2,110 mg/kg (Rat) LD₅₀ dermal: 867 mg/kg (Rat)

Acute oral toxicity:

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

Acute dermal toxicity:

Harmful in contact with skin.

Acute inhalation toxicity:

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

Skin corrosion/irritation:

Causes severe burns.

Serious eye damage/irritation:

Causes serious eye damage.

Respiratory or skin sensitisation:

May cause an allergic skin reaction.

Germ cell mutagenicity:

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

Carcinogenicity:

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

Reproductive toxicity:

Suspected of damaging fertility or the unborn child.

STOT-single exposure:

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

STOT-repeated exposure:

Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard:

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

Additional information:

No data available.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

Very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Biodegradation:

No data available.

12.3 Bioaccumulative potential

Accumulation / Evaluation:

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6 Other adverse effects

No data available.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste treatment options

Appropriate disposal / Product:

Dispose of waste according to applicable legislation. Consult the appropriate local waste disposal expert about waste disposal.

Appropriate disposal / Package:

Dispose of waste according to applicable legislation. Completely emptied packages can be recycled.








Other disposal recommendations:

The allocation of waste code numbers / waste names must be carried out in accordance with the European Waste Catalogue (EWC). Collect in closed and suitable containers for disposal. Do not allow to enter into surface water or drains.

13.2 Additional information

Waste for disposal is to be classified and labelled.

SECTION 14: Transport information

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI-/IATA-DGR)
14.1 UN-No.			
2735	2735	2735	2735
14.2 UN proper shipping name			
AMINES, LIQUID, CORRO SIVE, N.O.S. (2-Piperazi n-1-ylethylamine)	AMINES, LIQUID, CORRO SIVE, N.O.S. (2-Piperazi n-1-ylethylamine)	AMINES, LIQUID, CORRO SIVE, N.O.S. (2-Piperazi n-1-ylethylamine)	AMINES, LIQUID, CORRO SIVE, N.O.S. (2-Piperazi n-1-ylethylamine)
14.3 Transport hazard class(es)			
 8	 8	 8	 8
14.4 Packing group			
II	II	II	II
14.5 Environmental hazards			
		 MARINE POLLUTANT	-
14.6 Special precautions for user			
No data available.			

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

not relevant

Additional information:

No data available.

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SECTION 15: Regulatory information

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

15.1.1 EU legislation

Other EU regulations:

Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

15.1.2 National regulations

No data available.

15.2 Chemical Safety Assessment

No data available.

SECTION 16: Other information

16.1 Indication of changes

Changes executed in version 2.0:

Section 2, 3: classification/Label elements, hazardous ingredients

General revision

16.2 Abbreviations and acronyms

See overview table at www.euphrac.eu

16.3 Key literature references and sources for data

European Chemicals Agency (ECHA): <http://www.echa.europa.eu>

ECHA, C&L Inventory: <http://echa.europa.eu/information-on-chemicals/cl-inventory-database>

ECHA, Registered substances: <http://echa.europa.eu/information-on-chemicals/registered-substances>

GESTIS (Gefahrstoffinformationssystem der DGUV): <http://www.dguv.de/ifa/GESTIS/index.jsp>

Hörath Gefährliche Stoffe und Gemische, 8. Auflage, Dr. Angela Schulz

Safety data sheets of the manufacturers

16.4 Classification for mixtures and used evaluation method according to regulation (EC) No. 1272/2008 [CLP]

Classification according to Regulation (EC) No. 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Respiratory or skin sensitisation (<i>Skin Sens. 1</i>)	H317: May cause an allergic skin reaction.	Calculation
Hazardous to the aquatic environment (<i>Aquatic Acute 1</i>)	H400: Very toxic to aquatic life.	Calculation
Hazardous to the aquatic environment (<i>Aquatic Chronic 1</i>)	H410: Very toxic to aquatic life with long lasting effects.	Calculation
Acute toxicity (dermal) (<i>Acute Tox. 4</i>)	H312: Harmful in contact with skin.	Calculation
Skin corrosion/irritation (<i>Skin Corr. 1B</i>)	H314: Causes severe skin burns and eye damage.	Calculation
Serious eye damage/eye irritation (<i>Eye Dam. 1</i>)	H318: Causes serious eye damage.	Calculation
Reproductive toxicity (<i>Repr. 2</i>)	H361: Suspected of damaging fertility or the unborn child.	Calculation
STOT-repeated exposure (<i>STOT RE 1</i>)	H372: Causes damage to organs through prolonged or repeated exposure.	Calculation

16.5 Relevant H- and EUH-phrases

Hazard statements	
H228	Flammable solid.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.

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Hazard statements

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

16.6 Training advice

No data available.

16.7 Additional information

The information in this safety data sheet has been established to our best knowledge and was up-to-date at time of revision. The information is intended to give you advice about the safe handling of the product for storage, processing, transport and disposal. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.