

AGC Conductive lacquer Switch

Version number: SDSCH 1.0

Date of compilation: 07.06.2019

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

1.1 Product identifier

Trade name **AGC Conductive lacquer Switch**
Other names or synonyms *AGC Conductive lacquer Switch*
 Registration number (REACH) not relevant (mixture)

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

Relevant identified uses Medium for dental technology.
 Uses advised against For professional users only.

1.3 Details of the supplier of the safety data sheet

C.HAFNER GmbH + Co. KG
 Maybachstr. 4
 71299 Wimsheim
 Germany

Telephone: +49-704490333-0
 Telefax: +49-70449033-40
 e-Mail: Website: www.c-hafner.de

Additional information

Manufacturer					
Country	Name	Postal code/city	Telephone	Telefax	Website
Germany	Wieland Edelmetalle GmbH	75179 Pforzheim	07231-1393-0	07231-1393-100	www.wieland-edelmetalle.de

Supplier of the product					
Country	Name	Postal code/city	Telephone	Telefax	Website
Germany	C.HAFNER GmbH + Co. KG	71299 Wimsheim	+49-7044-90333-0	+49-7044-9033-40	www.c-hafner.de

e-mail (competent person) michael.huber@c-hafner.de (Dr. Michael Huber)

National contact Dr. Michael Huber
 Telephone: +49-7231-424021-406
 e-mail: Michael.huber@c-hafner.de

1.4 Emergency telephone number

Emergency information service This number is only for medical emergencies
 Opening hours 24h-Notrufnummer

Poison centre						
Country	Name	Postal code/city	Telephone	Telefax	Website	Opening hours
Germany	Gemeinsames Giftinformationszentrum Erfurt	99089 Erfurt	+49 (0)361-730 730	0361-73073-17	ggiz-erfurt.de	Mon - Fri 00:00 - 00:00

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1.5 Additional relevant and available information

1.6 Remarks there is no additional information

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Section	Hazard class	Cat-egory	Hazard class and category	Hazard statement
2.6	flammable liquid	2	Flam. Liq. 2	H225
3.3	serious eye damage/eye irritation	2	Eye Irrit. 2	H319
3.8D	specific target organ toxicity - single exposure (narcotic effects, drowsiness)	3	STOT SE 3	H336
4.1A	hazardous to the aquatic environment - acute hazard	1	Aquatic Acute 1	H400
4.1C	hazardous to the aquatic environment - chronic hazard	1	Aquatic Chronic 1	H410

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

The product is combustible and can be ignited by potential ignition sources. Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

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

- Signal word danger

- Pictograms



- Hazard statements

- H225 Highly flammable liquid and vapour.
- H319 Causes serious eye irritation.
- H336 May cause drowsiness or dizziness.
- H410 Very toxic to aquatic life with long lasting effects.

- Precautionary statements

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P312 Call a POISON CENTRE/doctor if you feel unwell.
- P370+P378 In case of fire: Use sand, carbon dioxide or powder extinguisher to extinguish.
- P391 Collect spillage.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P501 Dispose of contents/container to industrial combustion plant.

- Supplemental hazard information

- EUH066 Repeated exposure may cause skin dryness or cracking.

- Hazardous ingredients for labelling Propan-2-ol, Ethyl acetate

2.3 Other hazards

Inhalation of dust may cause respiratory irritation.

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Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.







SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures







Description of the mixture

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
Silver (< 1 mm)	CAS No 7440-22-4 EC No 231-131-3 REACH Reg. No 01-2119555669-21- 0024	25 – < 50	Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410	
Propan-2-ol	CAS No 67-63-0 EC No 200-661-7 REACH Reg. No 01-2119457558-25- xxxx	10 – < 25	Flam. Liq. 2 / H225 Eye Irrit. 2 / H319 STOT SE 3 / H336	
Ethyl acetate	CAS No 141-78-6 EC No 205-500-4 REACH Reg. No 01-2119475103-46- xxxx	10 – < 25	Flam. Liq. 2 / H225 Eye Irrit. 2 / H319 STOT SE 3 / H336	
Cellulosenitrat		5 – < 10	Eye Irrit. 2 / H319 STOT SE 3 / H336	
1-ethoxypropan-2-ol	CAS No 1569-02-4 EC No 216-374-5 REACH Reg. No 01-2119462792-32- xxxx	5 – < 10	Flam. Liq. 3 / H226 Acute Tox. 3 / H331 STOT SE 3 / H336	
N-butyl acetate	CAS No 123-86-4 EC No 204-658-1 REACH Reg. No 01-2119485493-29- xxxx	5 – < 10	Flam. Liq. 3 / H226 STOT SE 3 / H336	

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Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
Acetone	CAS No 67-64-1 EC No 200-662-2 REACH Reg. No 01-2119471330-49- xxxx 01-2119498062-37- xxxx	5 - < 10	Flam. Liq. 2 / H225 Eye Irrit. 2 / H319 STOT SE 3 / H336	 
Reference substance 001	CAS No 64742-48-9 REACH Reg. No 01-2119463258-33- xxxx	1 - < 5	Flam. Liq. 3 / H226 Acute Tox. 3 / H331 STOT SE 3 / H336 Asp. Tox. 1 / H304 Aquatic Chronic 4 / H413	  
Ethanol	CAS No 64-17-5 EC No 200-578-6 REACH Reg. No 01-2119457610-43- xxxx	1 - < 5	Flam. Liq. 2 / H225	

For full text of abbreviations: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Narcotic effects.

4.3 Indication of any immediate medical attention and special treatment needed

none

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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, BC-powder, Carbon dioxide (CO₂)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture. Solvent vapours are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Wear self-contained breathing apparatus

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill

Covering of drains

Advices on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Avoidance of ignition sources. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Use only in well-ventilated areas. Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools.

- Specific notes/details

Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapours are heavier than air, spread along floors and form explosive mixtures with air. Vapours may form explosive mixtures with air.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- Explosive atmospheres

Keep container tightly closed and in a well-ventilated place. Use local and general ventilation. Keep cool. Protect from sunlight.

- Flammability hazards

Keep away from sources of ignition - No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Protect from sunlight.

Consideration of other advice

- Ventilation requirements

Use local and general ventilation. Ground/bond container and receiving equipment.

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Notation	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Ceiling-C [ppm]	Ceiling-C [mg/m ³]	Source
DE	1-butyl acetate	123-86-4		MAK	100	480	200	960			DFG
DE	n-butyl acetate	123-86-4		AGW	62	300	124	600			TRGS 900
DE	ethyl acetate	141-78-6		AGW	200	730	400	1,460			TRGS 900
DE	ethyl acetate	141-78-6		MAK	200	750	400	1,500			DFG

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Country	Name of agent	CAS No	Notation	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Ceiling-C [ppm]	Ceiling-C [mg/m ³]	Source
DE	1-ethoxy-2-propanol	1569-02-4		MAK	20	86	40	172			DFG
DE	1-ethoxypropan-2-ol	1569-02-4	DE-AGW-14	AGW	20	86	40	172			TRGS 900
DE	ethanol	64-17-5		AGW	200	380	800	1,520			TRGS 900
DE	ethanol	64-17-5		MAK	200	380	800	1,520			DFG
DE	Naphtha (petroleum), hydro-treated heavy	64742-48-9		MAK	50	300	100	600			DFG
DE	2-propanol	67-63-0		MAK	200	500	400	1,000			DFG
DE	propan-2-ol	67-63-0		AGW	200	500	400	1,000			TRGS 900
DE	acetone	67-64-1		AGW	500	1,200	1,000	2,400			TRGS 900
DE	acetone	67-64-1		MAK	500	1,200	1,000	2,400			DFG
DE	silver	7440-22-4	i	AGW		0.1		0.8			TRGS 900
EU	ethyl acetate	141-78-6		IOEL V	200	734	400	1,468			2017/164/EU
EU	acetone	67-64-1		IOEL V	500	1,210					2000/39/EC
EU	silver	7440-22-4		IOEL V		0.1					2000/39/EC

Notation

Ceiling-C

ceiling value is a limit value above which exposure should not occur

DE-AGW-14 OEL for the sum of the air concentrations of 1-ethoxypropan-2-ol and 2-ethoxy-1-methylethyl acetate.

i inhalable fraction

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Biological limit values

Country	Name of agent	Parameter	Notation	Identifier	Value	Source
DE	2-propanol	acetone		BAT	25 mg/l	DFG
DE	2-propanol	acetone		BAT	25 mg/l	DFG
DE	2-propanol	acetone		BLV	25 mg/l	TRGS 903
DE	2-propanol	acetone		BLV	25 mg/l	TRGS 903
DE	acetone	acetone		BLV	80 mg/l	TRGS 903

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Relevant DNELs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Silver (< 1 mm)	7440-22-4	DNEL	0.1 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
Propan-2-ol	67-63-0	DNEL	500 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
Propan-2-ol	67-63-0	DNEL	888 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Ethyl acetate	141-78-6	DNEL	734 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
Ethyl acetate	141-78-6	DNEL	1,468 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
Ethyl acetate	141-78-6	DNEL	734 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
Ethyl acetate	141-78-6	DNEL	1,468 mg/m ³	human, inhalatory	worker (industry)	acute - local effects
Ethyl acetate	141-78-6	DNEL	63 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
1-ethoxypropan-2-ol	1569-02-4	DNEL	211 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
1-ethoxypropan-2-ol	1569-02-4	DNEL	500 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
1-ethoxypropan-2-ol	1569-02-4	DNEL	74 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Acetone	67-64-1	DNEL	1,210 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
Acetone	67-64-1	DNEL	2,420 mg/m ³	human, inhalatory	worker (industry)	acute - local effects
Acetone	67-64-1	DNEL	186 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

8.1.4.5 Relevant PNECs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
Silver (< 1 mm)	7440-22-4	PNEC	0.04 µg/l	aquatic organisms	freshwater	short-term (single instance)
Silver (< 1 mm)	7440-22-4	PNEC	0.86 µg/l	aquatic organisms	marine water	short-term (single instance)
Silver (< 1 mm)	7440-22-4	PNEC	0.025 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Silver (< 1 mm)	7440-22-4	PNEC	438.1 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Silver (< 1 mm)	7440-22-4	PNEC	438.1 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Silver (< 1 mm)	7440-22-4	PNEC	1.41 mg/kg	terrestrial organisms	soil	short-term (single instance)
Propan-2-ol	67-63-0	PNEC	140.9 mg/l	aquatic organisms	freshwater	short-term (single instance)
Propan-2-ol	67-63-0	PNEC	140.9 mg/l	aquatic organisms	marine water	short-term (single instance)

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Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
Propan-2-ol	67-63-0	PNEC	2,251 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Propan-2-ol	67-63-0	PNEC	552 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Propan-2-ol	67-63-0	PNEC	552 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Propan-2-ol	67-63-0	PNEC	28 mg/kg	terrestrial organisms	soil	short-term (single instance)
Ethyl acetate	141-78-6	PNEC	0.24 mg/l	aquatic organisms	freshwater	short-term (single instance)
Ethyl acetate	141-78-6	PNEC	0.024 mg/l	aquatic organisms	marine water	short-term (single instance)
Ethyl acetate	141-78-6	PNEC	650 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Ethyl acetate	141-78-6	PNEC	1.15 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Ethyl acetate	141-78-6	PNEC	0.115 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Ethyl acetate	141-78-6	PNEC	0.148 mg/kg	terrestrial organisms	soil	short-term (single instance)
1-ethoxypropan-2-ol	1569-02-4	PNEC	10 mg/l	aquatic organisms	freshwater	short-term (single instance)
1-ethoxypropan-2-ol	1569-02-4	PNEC	1 mg/l	aquatic organisms	marine water	short-term (single instance)
1-ethoxypropan-2-ol	1569-02-4	PNEC	1,250 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
1-ethoxypropan-2-ol	1569-02-4	PNEC	37.6 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
1-ethoxypropan-2-ol	1569-02-4	PNEC	3.76 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
1-ethoxypropan-2-ol	1569-02-4	PNEC	1.97 mg/kg	terrestrial organisms	soil	short-term (single instance)
Acetone	67-64-1	PNEC	10.6 mg/l	aquatic organisms	freshwater	short-term (single instance)
Acetone	67-64-1	PNEC	1.06 mg/l	aquatic organisms	marine water	short-term (single instance)
Acetone	67-64-1	PNEC	100 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Acetone	67-64-1	PNEC	30.4 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Acetone	67-64-1	PNEC	3.04 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Acetone	67-64-1	PNEC	29.5 mg/kg	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

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Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

Preventive skin protection (barrier creams/ointments) is recommended.

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374 and regulation (EU) Nr. 2016/425. 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. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits.

- Type of material

NR: natural rubber, latex, CR: chloroprene (chlorobutadiene) rubber, NBR: acrylonitrile-butadiene rubber, FKM: fluoroelastomer

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

Filtering half mask (EN 149). Adequate particulate filter (EN 143). P3 (filters at least 99,95 % of airborne particles, colour code: White). Type: A (against organic gases and vapours with a boiling point of > 65 °C, colour code: Brown). Type: A-P2 (combined filters against particles and organic gases and vapours, colour code: Brown/White). Anti-dust respirator (FFP3).

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	liquid
Colour	red
Odour	characteristic

Other safety parameters

pH (value)	not determined
Melting point/freezing point	not determined
Initial boiling point and boiling range	not determined
Flash point	-18 °C
Evaporation rate	not determined
Flammability (solid, gas)	not relevant not combustible but contains combustible materials (fluid)

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Explosive limits

- Lower explosion limit (LEL)	2.2 vol%
- Upper explosion limit (UEL)	13.5 vol%
Vapour pressure	240 hPa at 20 °C
Density	not determined
Vapour density	this information is not available
Relative density	information on this property is not available
Solubility(ies)	not determined

Partition coefficient

- n-octanol/water (log KOW)	this information is not available
Auto-ignition temperature	>197 °C (auto-ignition temperature (liquids and gases))
Viscosity	not determined
Explosive properties	none
Oxidising properties	none

9.2 Other information

Of no significance.

Temperature class (EU, acc. to ATEX)	T4 (maximum permissible surface temperature on the equipment: 135°C)
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SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". The mixture contains reactive substance(s). Risk of ignition.

If heated:

Risk of ignition

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints to prevent fire or explosion

Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

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10.5 Incompatible materials

Bases, Oxidisers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Shall not be classified as acutely toxic.

Acute toxicity estimate (ATE) of components of the mixture			
Name of substance	CAS No	Exposure route	ATE
1-ethoxypropan-2-ol	1569-02-4	inhalation: vapour	9.59 mg _l /4h
Reference substance 001	64742-48-9	inhalation: vapour	9.3 mg _l /4h
Reference substance 001	64742-48-9	inhalation: dust/mist	0.5 mg _l /4h

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity (STOT)

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Other information

Repeated exposure may cause skin dryness or cracking.

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SECTION 12: Ecological information
12.1 Toxicity

Acc. to 1272/2008/EC: Very toxic to aquatic life with long lasting effects.

Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (Ordinance on facilities for handling substances hazardous to water) (AwSV): WGK 1, slightly hazardous to water (Germany)

Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Silver (< 1 mm)	7440-22-4	LC50	1.2 µg/l	fish	96 h
Silver (< 1 mm)	7440-22-4	ErC50	2.52 µg/l	algae	72 h
Silver (< 1 mm)	7440-22-4	EC50	0.82 µg/l	algae	72 h
Propan-2-ol	67-63-0	LC50	10,000 mg/l	fish	96 h
Ethyl acetate	141-78-6	LC50	230 mg/l	fish	96 h
Ethyl acetate	141-78-6	EC50	220 mg/l	fish	96 h
1-ethoxypropan-2-ol	1569-02-4	LC50	5,300 mg/l	fish	96 h
1-ethoxypropan-2-ol	1569-02-4	EC50	5,000 mg/l	aquatic invertebrates	48 h
1-ethoxypropan-2-ol	1569-02-4	ErC50	1,900 mg/l	algae	72 h
N-butyl acetate	123-86-4	LC50	18 mg/l	fish	96 h
N-butyl acetate	123-86-4	EC50	18 mg/l	fish	96 h
N-butyl acetate	123-86-4	ErC50	335 mg/l	algae	24 h
Acetone	67-64-1	LC50	8,120 mg/l	fish	96 h
Reference substance 001	64742-48-9	LL50	>1,000 mg/l	fish	24 h
Reference substance 001	64742-48-9	EL50	>1,000 mg/l	aquatic invertebrates	24 h
Ethanol	64-17-5	LC50	15,400 mg/l	fish	96 h
Ethanol	64-17-5	EC50	12,700 mg/l	fish	96 h
Ethanol	64-17-5	ErC50	22,000 mg/l	algae	96 h

Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Silver (< 1 mm)	7440-22-4	EC50	0.8 µg/l	aquatic invertebrates	7 d
N-butyl acetate	123-86-4	EC50	34.2 mg/l	aquatic invertebrates	21 d
N-butyl acetate	123-86-4	LC50	43.5 mg/l	aquatic invertebrates	21 d
Acetone	67-64-1	EC50	61.15 g/l	microorganisms	30 min
Ethanol	64-17-5	LC50	1,806 mg/l	aquatic invertebrates	10 d
Ethanol	64-17-5	ErC50	675 mg/l	algae	4 d

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12.2 Persistence and degradability

Degradability of components of the mixture						
Name of substance	CAS No	Process	Degradation rate	Time	Method	Source
Propan-2-ol	67-63-0	oxygen depletion	53 %	5 d		ECHA
Ethyl acetate	141-78-6	oxygen depletion	62 %	5 d		ECHA
1-ethoxypropan-2-ol	1569-02-4	oxygen depletion	68 %	28 d		ECHA
N-butyl acetate	123-86-4	oxygen depletion	80 %	5 d		ECHA
Acetone	67-64-1	carbon dioxide generation	90.9 %	28 d		ECHA
Reference substance 001	64742-48-9	oxygen depletion	7.3 %	4 d		ECHA
Reference substance 001	64742-48-9	carbon dioxide generation	0 %	3 d		ECHA
Ethanol	64-17-5	oxygen depletion	69 %	5 d		ECHA

12.3 Bioaccumulative potential

Data are not available.

Bioaccumulative potential of components of the mixture				
Name of substance	CAS No	BCF	Log KOW	BOD5/COD
Silver (< 1 mm)	7440-22-4	70		
Ethyl acetate	141-78-6	30	0.68 (pH value: 7, 25 °C)	
1-ethoxypropan-2-ol	1569-02-4		1.46 (pH value: 7, 20 °C)	
N-butyl acetate	123-86-4		2.3 (pH value: ~7, 25 °C)	
Acetone	67-64-1		-0.23	963.5
Ethanol	64-17-5		-0.77	0.6211

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Data are not available.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste treatment-relevant information

Solvent reclamation/regeneration.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Relevant provisions relating to waste

Properties of waste which render it hazardous

- HP 3 flammable
- HP 6 acute toxicity
- HP 14 ecotoxic

- Product

06 03 99 wastes not otherwise specified

- Product residues

06 03 99 wastes not otherwise specified

- Packagings

- 15 01 02 plastic packaging
- 15 01 10x packaging containing residues of or contaminated by dangerous substances
- 15 02 02x absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

- 14.1 UN number** 1993
- 14.2 UN proper shipping name** FLAMMABLE LIQUID, N.O.S.
Technical name (hazardous ingredients) Propan-2-ol, Ethyl acetate
- 14.3 Transport hazard class(es)**
Class 3 (flammable liquids) (environmentally hazardous)
- 14.4 Packing group** II (substance presenting medium danger)
- 14.5 Environmental hazards** hazardous to the aquatic environment
- 14.6 Special precautions for user**
Provisions for dangerous goods (ADR) should be complied within the premises.
- 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code**
The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

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Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

UN number 1993
 Proper shipping name FLAMMABLE LIQUID, N.O.S.
 Class 3
 Classification code F1
 Packing group II
 Danger label(s) 3, fish and tree



Environmental hazards yes (hazardous to the aquatic environment)
 Special provisions (SP) 274, 601, 640D
 Excepted quantities (EQ) E2
 Limited quantities (LQ) 1 L
 Transport category (TC) 2
 Tunnel restriction code (TRC) D/E
 Hazard identification No 33

International Maritime Dangerous Goods Code (IMDG)

UN number 1993
 Proper shipping name FLAMMABLE LIQUID, N.O.S.
 Class 3
 Marine pollutant yes (hazardous to the aquatic environment)
 Packing group II
 Danger label(s) 3, fish and tree



Special provisions (SP) 274
 Excepted quantities (EQ) E2
 Limited quantities (LQ) 1 L
 EmS F-E, S-E
 Stowage category B

International Civil Aviation Organization (ICAO-IATA/DGR)

UN number 1993
 Proper shipping name Flammable liquid, n.o.s.
 Class 3
 Environmental hazards yes (hazardous to the aquatic environment)
 Packing group II
 Danger label(s) 3



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Special provisions (SP)	A3
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

Dangerous substances with restrictions (REACH, Annex XVII)				
Name of substance	Name acc. to inventory	CAS No	Restriction	No
AGC Conductive lacquer Switch	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC		R3	3
Ethanol	flammable / pyrophoric		R40	40
Propan-2-ol	flammable / pyrophoric		R40	40
Ethyl acetate	flammable / pyrophoric		R40	40
1-ethoxypropan-2-ol	flammable / pyrophoric		R40	40
N-butyl acetate	flammable / pyrophoric		R40	40
Acetone	flammable / pyrophoric		R40	40
Reference substance 001	flammable / pyrophoric		R40	40

Legend

R3

1. Shall not be used in:
 - ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
 - tricks and jokes,
 - games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
2. Articles not complying with paragraph 1 shall not be placed on the market.
3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
 - can be used as fuel in decorative oil lamps for supply to the general public, and,
 - present an aspiration hazard and are labelled with R65 or H304,
4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).
5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
 - (a) lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: 'Keep lamps filled with this liquid out of the reach of children'; and, by 1 December 2010, 'Just a sip of lamp oil - or even sucking the wick of lamps - may lead to life-threatening lung damage';
 - (b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter may lead to life threatening lung damage';
 - (c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.
6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled R65 or H304, intended for supply to the general public.
7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.

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Legend

- R40
1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:
 - metallic glitter intended mainly for decoration,
 - artificial snow and frost,
 - 'whoopee' cushions,
 - silly string aerosols,
 - imitation excrement,
 - horns for parties,
 - decorative flakes and foams,
 - artificial cobwebs,
 - stink bombs.
 2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with: 'For professional users only'.
 3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/324/EEC (2).
 4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II

none of the ingredients are listed

Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)

none of the ingredients are listed

National regulations (Germany)

Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (Ordinance on facilities for handling substances hazardous to water) (AwSV)

Wassergefährdungsklasse, WGK 1 slightly hazardous to water
(water hazard class)

Storage of hazardous substances in non-stationary containers (TRGS 510) (Germany)

Storage class (LGK) 3 (flammable liquids)

15.2 Chemical Safety Assessment

For this substance a chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
2000/39/EC	Commission Directive establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC
2017/164/EU	Commission Directive establishing a fourth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC, and amending Commission Directives 91/322/EEC, 2000/39/EC and 2009/161/EU
Acute Tox.	Acute toxicity
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
AGW	Workplace exposure limit
Aquatic Acute	Hazardous to the aquatic environment - acute hazard
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard

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Abbr.	Descriptions of used abbreviations
Asp. Tox.	Aspiration hazard
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BOD	Biochemical Oxygen Demand
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
COD	Chemical oxygen demand
DFG	Deutsche Forschungsgemeinschaft MAK-und BAT-Werte-Liste, Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe, Wiley-VCH, Weinheim
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
IOELV	Indicative occupational exposure limit value
LGK	Lagerklasse (storage class according to TRGS 510, Germany)
log KOW	n-Octanol/water
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
STEL	Short-term exposure limit
STOT SE	Specific target organ toxicity - single exposure
TRGS	Technische Regeln für Gefahrstoffe (technical rules for hazardous substances, Germany)
TRGS 900	Arbeitsplatzgrenzwerte (TRGS 900)

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Abbr.	Descriptions of used abbreviations
TRGS 903	Biologische Grenzwerte (TRGS 903)
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Health hazards. Environmental hazards. The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product. This Safety Data Sheet was created on voluntary basis. It is not necessary referring to Article 31 Regulation (EC) 1907/2006 (REACH).