

# SAFETY DATA SHEET

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

Revision date: 10 Jan 2022

Print date: 26 Jan 2022

Version: 1.1

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**FK1916**

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

### 1.1. Product identifier

Trade name/designation:

**FK1916**

Other means of identification:

AgPd thick film paste for AIN FK1916

Article No.:

10113

### \* 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture:

thick film ink

Relevant identified uses:

**Life cycle stage [LCS]**

**IS:** Use at industrial sites

**Sector of uses [SU]**

**SU 3:** Industrial uses: Uses of substances as such or in preparations at industrial sites

**Product Categories [PC]**

**PC 9a:** Coatings and paints, thinners, paint removers

**Process categories [PROC]**

**PROC 10:** Roller application or brushing

**Environmental release categories [ERC]**

**ERC 5:** Use at industrial site leading to inclusion into/onto article

**Article categories [AC]**

**AC 0:** Other

### 1.3. Details of the supplier of the safety data sheet

**Supplier (manufacturer/importer/only representative/downstream user/distributor):**

**Fraunhofer IKTS-DD, TFC, RS**

Dickschichttechnik und funktioneller Druck | Thick-Film Technology and Functional Printing

Winterbergstraße 28

01277 Dresden

Germany

**Telephone:** +49-351-2553-7916

**Telefax:** +49-351-2554-236

**E-mail:** service@ikts-tfc.de

**Website:** www.ikts.fraunhofer.de

**E-mail (competent person):** service@ikts-tfc.de

### 1.4. Emergency telephone number

Richard Schmidt, +49-351-2553-7916/-7900 (Only available during office hours.)

## 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
Skin corrosion/irritation ( <i>Skin Irrit. 2</i> )	H315: Causes skin irritation.	Calculation method.
Serious eye damage/eye irritation ( <i>Eye Irrit. 2</i> )	H319: Causes serious eye irritation.	Calculation method.
Acute toxicity (inhalative) ( <i>Acute Tox. 4</i> )	H332: Harmful if inhaled.	Calculation method.
Reproductive toxicity ( <i>Repr. 1A</i> )	H360D: May damage the unborn child.	Calculation method.

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Hazard classes and hazard categories	Hazard statements	Classification procedure
Hazardous to the aquatic environment ( <i>Aquatic Acute 1</i> )	H400: Very toxic to aquatic life.	Calculation method.
Hazardous to the aquatic environment ( <i>Aquatic Chronic 1</i> )	H410: Very toxic to aquatic life with long lasting effects.	Calculation method.

### \* 2.2. Label elements

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

##### Hazard pictograms:



**GHS07**

Exclamation mark



**GHS08**

Health hazard



**GHS09**

Environment

##### Signal word: Danger

Hazard statements for health hazards	
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H360D	May damage the unborn child.

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

##### Supplemental hazard information: —

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

Precautionary statements Response	
P302 + P352	IF ON SKIN: Wash with plenty of water/Soap.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/attention.

Precautionary statements Disposal	
P501	Dispose of contents/container to Dispose of waste according to applicable legislation..

##### Special rules for supplemental label elements for certain mixtures:

5,1 % percent of the mixture consists of ingredient(s) of unknown acute toxicity (oral).

78,0 % percent of the mixture consists of ingredient(s) of unknown acute toxicity (dermal).

97,8 % percent of the mixture consists of ingredient(s) of unknown acute toxicity (inhalative).

### 2.3. Other hazards

No data available

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### Description:

Precious metals, glass and inorganic additives embedded in an organic vehicle.

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### Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 7440-22-4 EC No.: 231-131-3	<b>silver</b> Substance with a community workplace exposure limit.	37 - ≤ 63 weight-%
CAS No.: 8000-41-7 EC No.: 232-268-1	<b>Terpineol</b> Eye Irrit. 2 (H319), Skin Irrit. 2 (H315)  <b>Warning</b>	8 - < 15 weight-%
CAS No.: 7783-46-2 EC No.: 231-998-8	<b>lead difluoride</b> Acute Tox. 4 (H302, H332), Aquatic Acute 1 (H400), Aquatic Chronic 1 (H410), Repr. 1A (H360Df), STOT RE 2 (H373)  <b>Danger</b>	0 - ≤ 2 weight-%

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. If unconscious but breathing normally, place in recovery position and seek medical advice. Do not leave affected person unattended.

#### Following inhalation:

Provide fresh air. In case of respiratory tract irritation, consult a physician. Get medical advice/attention. Get medical advice/attention if you feel unwell.

#### 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. Take off immediately all contaminated clothing.

#### After eye contact:

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult an ophthalmologist.

#### Following ingestion:

Rinse mouth. Get medical advice/attention if you feel unwell.

#### Self-protection of the first aider:

Use personal protection equipment. No direct artificial respiration to be given by first aider.

### 4.2. Most important symptoms and effects, both acute and delayed

Skin corrosion/irritation Serious eye damage/eye irritation

### 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:

alcohol resistant foam, Extinguishing powder, Carbon dioxide (CO<sub>2</sub>). Co-ordinate fire-fighting measures to the fire surroundings.

#### Unsuitable extinguishing media:

Water

### \* 5.2. Special hazards arising from the substance or mixture

#### Hazardous combustion products:

Gases/vapours, toxic (CO, CO<sub>2</sub>)

### 5.3. Advice for firefighters

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

### 5.4. Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

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### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

**Personal precautions:**

Remove persons to safety.

**Protective equipment:**

Wear protective gloves/protective clothing/eye protection/face protection.

##### 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.

#### \* 6.3. Methods and material for containment and cleaning up

**For containment:**

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

#### 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:**

Wear personal protection equipment (refer to section 8). Avoid contact during pregnancy/while nursing.

**Fire prevent measures:**

The formation of combustible vapours is possible at temperatures above: 88 °C Keep away from sources of ignition - No smoking.

**Environmental precautions:**

Do not allow to enter into surface water or drains.

**Advices on general occupational hygiene**

When using do not eat, drink or smoke. Avoid contact with eyes and skin.

#### \* 7.2. Conditions for safe storage, including any incompatibilities

**Technical measures and storage conditions:**

Store in a well-ventilated place.

**Packaging materials:**

Keep/Store only in original container.

**Requirements for storage rooms and vessels:**

Keep container tightly closed.

**Hints on storage assembly:**

Prohibition on mixed storage has to be followed

**Storage class (TRGS 510, Germany):** 10 - Combustible liquids that cannot be assigned to any of the above storage classes

**Further information on storage conditions:**

Keep in a cool, well-ventilated place.

#### 7.3. Specific end use(s)

**Recommendation:**

Observe technical data sheet.

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## SECTION 8: Exposure controls/personal protection

### \* 8.1. Control parameters

#### 8.1.1. Occupational exposure limit values

Limit value type (country of origin)	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
CZ	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.1 mg/m <sup>3</sup> ② 0.3 mg/m <sup>3</sup>
PL	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.05 mg/m <sup>3</sup> ⑤ (wdychalna frakcja)
IOELV (EU)	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup> ⑤ (silver compounds, soluble, calculated as Ag)
WEL (GB)	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup> ⑤ (compounds, soluble; calculated as Ag)
NL	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup> ⑤ (verbindingen, oplosbaar, berekend als Ag)
NIOSH (US)	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup> ⑤ compounds, soluble; calculated as Ag
IOELV (EU)	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.1 mg/m <sup>3</sup> ⑤ (metal)
WEL (GB)	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.1 mg/m <sup>3</sup> ⑤ (metal)
NL	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.1 mg/m <sup>3</sup> ⑤ (metaal)
PL	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.05 mg/m <sup>3</sup> ⑤ (związki srebra, nierozpuszczalny, obliczono jako Ag)
PL	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup> ⑤ (związki srebra, rozpuszczalny, obliczono jako Ag)
BG	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup> ⑤ съединения, разтворим; Изчисление Ag
BG	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.1 mg/m <sup>3</sup>
CZ	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup> ② 0.03 mg/m <sup>3</sup> ⑤ (stříbrné sloučeniny, rozpustný, vypočtený jako Ag, vdechovatelná frakce)
ACGIH (US)	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup> ⑤ compounds, soluble
OSHA (US)	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup>

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RO	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.1 mg/m <sup>3</sup> ⑤ (metal)
RO	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup> ⑤ compuşii solubil calculat ca Ag
Alberta (CA)	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.1 mg/m <sup>3</sup> ⑤ (metal)
Alberta (CA)	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup> ⑤ compounds, soluble
BC (CA)	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup> ② 0.03 mg/m <sup>3</sup>
JP	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup>
Québec (CA)	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup> ⑤ compounds, soluble; calculated as Ag
SI	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup> ② 0.02 mg/m <sup>3</sup> ⑤ (frakcija ki jo je mogoče vdihniti)
TW	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup>
RU	silver CAS No.: 7440-22-4 EC No.: 231-131-3	③ 1 mg/m <sup>3</sup>
RU	silver CAS No.: 7440-22-4 EC No.: 231-131-3	③ 0.5 mg/m <sup>3</sup>
TW	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup> ⑤ (##)
MY	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup> ⑤ sebatian boleh larut dikira sebagai Ag
MY	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.1 mg/m <sup>3</sup> ⑤ (logam)
BG	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.1 mg/m <sup>3</sup> ⑤ метал, Изчисление Ag
TR	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup> ⑤ (gümüş bileşikleri, çözünür, Hesaplanırken Ag )
TR	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.1 mg/m <sup>3</sup> ⑤ (metal)
Québec (CA)	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.1 mg/m <sup>3</sup> ⑤ (metal)

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NIOSH (US)	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.01 mg/m <sup>3</sup>
ACGIH (US)	silver CAS No.: 7440-22-4 EC No.: 231-131-3	① 0.1 mg/m <sup>3</sup>
CZ	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.05 mg/m <sup>3</sup> ② 0.2 mg/m <sup>3</sup>
PL	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.05 mg/m <sup>3</sup>
MY	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.05 mg/m <sup>3</sup>
BG	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.05 mg/m <sup>3</sup> ⑤ (неорганичен) (съединения)
Alberta (CA)	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.05 mg/m <sup>3</sup>
BC (CA)	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.05 mg/m <sup>3</sup>
BOELV (EU)	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.15 mg/m <sup>3</sup> ⑤ (inhalable fraction)
SI	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.1 mg/m <sup>3</sup> ② 0.4 mg/m <sup>3</sup> ⑤ (frakcija ki jo je mogoče vdihniti)
TW	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.05 mg/m <sup>3</sup>
JP	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.03 mg/m <sup>3</sup>
RO	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.15 mg/m <sup>3</sup> ⑤ Plumb i compusii sai anorganici (exprimai în Pb)
NL	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.15 mg/m <sup>3</sup>
RU	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.05 mg/m <sup>3</sup>
OSHA (US)	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.05 mg/m <sup>3</sup>
NIOSH (US)	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.05 mg/m <sup>3</sup>
ACGIH (US)	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.05 mg/m <sup>3</sup>

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Québec (CA)	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	① 0.05 mg/m <sup>3</sup>
RU	zinc fluoride CAS No.: 7783-49-5 EC No.: 232-001-9	① 0.2 mg/m <sup>3</sup> ③ 1 mg/m <sup>3</sup>
RU	lithium fluoride CAS No.: 7789-24-4 EC No.: 232-152-0	① 0.2 mg/m <sup>3</sup> ③ 1 mg/m <sup>3</sup>
SI	lithium fluoride CAS No.: 7789-24-4 EC No.: 232-152-0	① 0.2 mg/m <sup>3</sup> ② 0.2 mg/m <sup>3</sup> ⑤ (frakcija ki jo je mogoče vdihniti)

### 8.1.2. Biological limit values

Limit value type (country of origin)	Substance name	Limit value	① Parameter ② Test material ③ Time of sampling: ④ Remark
OEL-B (JP)	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	15 µg/100 mL	① Lead ② blood ③ no restriction
OEL-B (JP)	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	200 µg/100 mL RCB	① Protoporphyrin ② blood ③ no restriction ④ After one month or more since consecutive exposure
OEL-B (JP)	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	80 µg/100 mL blood	① Protoporphyrin ② blood ③ no restriction ④ After one month or more since consecutive exposure
OEL-B (JP)	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	5 mg/L	① Aminolevulinic acid ② urine ③ no restriction ④ After one month or more since consecutive exposure
VLBO (RO)	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	150 µg/L	① Plumb ② urina ③ finalul expunerii, resp. finalul schimbului
VLBO (RO)	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	70 µg/100 mL	① Plumb ② blood ③ finalul expunerii, resp. finalul schimbului
VLBO (RO)	lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	3 µg/cm	① Plumb ② păr ③ finalul expunerii, resp. finalul schimbului



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Limit value type (country of origin)	Substance name	Limit value	① Parameter ② Test material ③ Time of sampling: ④ Remark
VLBO (RO)	lead difluoride <b>CAS No.:</b> 7783-46-2 <b>EC No.:</b> 231-998-8	10 mg/L	① ALA-u ② urina ③ finalul expunerii, resp. finalul schimbului
VLBO (RO)	lead difluoride <b>CAS No.:</b> 7783-46-2 <b>EC No.:</b> 231-998-8	300 µg/L	① CP-u ② urina ③ finalul expunerii, resp. finalul schimbului
VLBO (RO)	lead difluoride <b>CAS No.:</b> 7783-46-2 <b>EC No.:</b> 231-998-8	100 µg/mL eritrocite	① PEL ② blood ③ finalul expunerii, resp. finalul schimbului
ACGIH-BEI (US)	lead difluoride <b>CAS No.:</b> 7783-46-2 <b>EC No.:</b> 231-998-8	200 µg/L	① Lead in blood ② blood ③ no restriction
BLV (EU)	lead difluoride <b>CAS No.:</b> 7783-46-2 <b>EC No.:</b> 231-998-8	30 µg/100mL	① Lead ③ no restriction
BAT (SI)	lead difluoride <b>CAS No.:</b> 7783-46-2 <b>EC No.:</b> 231-998-8	400 µg/L	① Svinec ② kri ③ ni pomemben ④ moški
BAT (SI)	lead difluoride <b>CAS No.:</b> 7783-46-2 <b>EC No.:</b> 231-998-8	300 µg/L	① Svinec ② kri ③ ni pomemben ④ ženske
BIO (BG)	lead difluoride <b>CAS No.:</b> 7783-46-2 <b>EC No.:</b> 231-998-8	400 µg/L	① Олово ② кръв ③ няма ограничение
BIO (BG)	lead difluoride <b>CAS No.:</b> 7783-46-2 <b>EC No.:</b> 231-998-8	300 µg/L	① Олово ② кръв ③ няма ограничение

### 8.1.3. DNEL-/PNEC-values

No data available

### \* 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

#### 8.2.2. Personal protection equipment



#### Eye/face protection:

Eye glasses with side protection (EN 166)

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### Skin protection:

Tested protective gloves must be worn (EN ISO 374). Suitable material: NBR (Nitrile rubber) 0,4 mm.  
Breakthrough time: 480 min.

### Respiratory protection:

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

### 8.2.3. Environmental exposure controls

See section 7. No additional measures necessary.

## SECTION 9: Physical and chemical properties

### \* 9.1. Information on basic physical and chemical properties

#### Appearance

Physical state: Liquid

Colour: dark grey

Odour: not determined

#### Safety relevant basis data

Parameter	Value	at °C	① Method ② Remark
pH	<i>not determined</i>		
Melting point	$\geq 15 - \leq 35$ °C		② Overtaken from SDS of the organic solvent of the paste (CAS#8000-41-7)
Freezing point	<i>not determined</i>		
Initial boiling point and boiling range	$\geq 217 - \leq 218$ °C		② Overtaken from SDS of the organic solvent of the paste (CAS#8000-41-7)
Decomposition temperature	<i>not determined</i>		
Flash point	= 88 °C		① closed cup ② Overtaken from SDS of the organic solvent of the paste (CAS#8000-41-7)
Evaporation rate	<i>not determined</i>		
Auto-ignition temperature	= 264 °C		② Overtaken from SDS of the organic solvent of the paste (CAS#8000-41-7)
Upper/lower flammability or explosive limits	<i>not determined</i>		
Vapour pressure	<i>not determined</i>		
Vapour density	<i>not determined</i>		
Density	= 3.3 g/cm <sup>3</sup>	25 °C	② calculated from ingredients
Relative density	<i>not determined</i>		
Bulk density	<i>not determined</i>		
Water solubility	= 2.54 g/l	20 °C	① OECD 105 ② Overtaken from SDS of the organic solvent of the paste (CAS#8000-41-7)
Partition coefficient: n-octanol/water	= 2.6		② GESTIS material database of German "IFA", accessed on 22.01.2022
Dynamic viscosity	$\geq 180 - \leq 350$ Pa*s	25 °C	① Brookfield SC4-14/-6R // n=10 U/min
Kinematic viscosity	<i>not determined</i>		

### 9.2. Other information

No data available

## SECTION 10: Stability and reactivity

### \* 10.1. Reactivity

This material is considered to be non-reactive under normal use conditions.

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### 10.2. Chemical stability

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

### 10.3. Possibility of hazardous reactions

No known hazardous reactions.

### 10.4. Conditions to avoid

Do not store at temperatures above 30°C

### 10.5. Incompatible materials

Acid, Alkali (lye), Oxidising agent, strong

### \* 10.6. Hazardous decomposition products

No known hazardous decomposition products.

## SECTION 11: Toxicological information

### \* 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Substance name	Toxicological information
silver CAS No.: 7440-22-4 EC No.: 231-131-3	<b>LD<sub>50</sub> oral:</b> >5,000 mg/kg (Rat) OECD Prüfrichtlinie 401
Terpineol CAS No.: 8000-41-7 EC No.: 232-268-1	<b>LD<sub>50</sub> oral:</b> =4,300 mg/kg (Ratte) OECD 401 <b>LD<sub>50</sub> dermal:</b> >2,000 mg/kg (Rat) OECD 402
lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	<b>LD<sub>50</sub> oral:</b> 3,015 mg/kg (Mouse)

#### Acute oral toxicity:

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

#### Acute dermal toxicity:

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

#### Acute inhalation toxicity:

Harmful if inhaled.

#### Skin corrosion/irritation:

Causes skin irritation.

#### Serious eye damage/irritation:

Causes serious eye irritation.

#### Respiratory or skin sensitisation:

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

#### 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:

Based on available data, the classification criteria are not met. May damage the unborn child.

#### STOT-single exposure:

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

#### STOT-repeated exposure:

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

#### Aspiration hazard:

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

#### Additional information:

No data available

### 11.2. Information on other hazards

No data available

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## SECTION 12: Ecological information

### \* 12.1. Toxicity

Substance name	Toxicological information
silver CAS No.: 7440-22-4 EC No.: 231-131-3	<b>LC<sub>50</sub></b> : =0.0102 mg/l 4 d (fish, anguilla anguilla) Partikelgröße < 1 µm <b>LC<sub>50</sub></b> : 0.0102 mg/l 4 d (fish, Oncorhynchus mykiss (Rainbow trout)) <b>EC<sub>50</sub></b> : 0.0184 mg/l 4 d (Algae/water plant, Pseudokirchneriella subcapitata (Grünalge)) <b>NOEC</b> : 0.0059 mg/l (Algae/water plant, Danio rerio (zebrafish))
Terpineol CAS No.: 8000-41-7 EC No.: 232-268-1	<b>LC<sub>50</sub></b> : =70 mg/l 4 d (fish, Danio rerio (zebrafish)) OECD 203 <b>LC<sub>50</sub></b> : ≈68 mg/l 3 d (Algae/water plant, Pseudokirchneriella subcapitata) OECD 201 <b>LC<sub>50</sub></b> : =73 mg/l 2 d (crustaceans, Daphnia magna (Big water flea)) OECD 202

#### Aquatic toxicity:

Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

### 12.2. Persistence and degradability

Substance name	Biodegradation	Remark
Terpineol CAS No.: 8000-41-7 EC No.: 232-268-1	—	SDB Terpineol Version 6.4 von Sigma Aldrich (englisch), überarbeitet am 23.03.2021; WGK laut Kenn-Nummer 3.477 nach AwSV, Anlage 1 (4)
lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	not determined	WGK: GESTIS Gefahrstoffdatenbankeintrag, abgerufen 14.09.2021

### \* 12.3. Bioaccumulative potential

Substance name	Log K <sub>ow</sub>	Bioconcentration factor (BCF)
silver CAS No.: 7440-22-4 EC No.: 231-131-3		70

#### Partition coefficient: n-octanol/water:

= 2.6; Remark: GESTIS material database of German "IFA", accessed on 22.01.2022

### 12.4. Mobility in soil

No data available

### 12.5. Results of PBT and vPvB assessment

Substance name	Results of PBT and vPvB assessment
silver CAS No.: 7440-22-4 EC No.: 231-131-3	—
Terpineol CAS No.: 8000-41-7 EC No.: 232-268-1	—
lead difluoride CAS No.: 7783-46-2 EC No.: 231-998-8	—

### 12.6. Endocrine disrupting properties

No data available

### 12.7. Other adverse effects

No data available

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## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Handle contaminated packages in the same way as the substance itself.

#### 13.1.1. Product/Packaging disposal

#### Waste codes/waste designations according to EWC/AVV

##### Waste code product

16 05 06 *	laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals
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\*: Evidence for disposal must be provided.

#### Waste treatment options

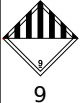
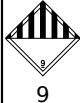
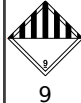
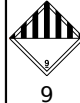




##### Appropriate disposal / Product:

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

##### Appropriate disposal / Package:

Completely emptied packages can be recycled.

## SECTION 14: Transport information

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
<b>14.1. UN number or ID number</b>			
UN 3082	UN 3082	UN 3082	UN 3082
<b>14.2. UN proper shipping name</b>			
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (silver, lead difluoride)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (silver, lead difluoride)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (silver, lead difluoride)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (silver, lead difluoride)
<b>14.3. Transport hazard class(es)</b>			
 9	 9	 9	 9
<b>14.4. Packing group</b>			
III	III	III	III
<b>14.5. Environmental hazards</b>			
		 MARINE POLLUTANT	
<b>14.6. Special precautions for user</b>			
<b>Special provisions:</b> 274   335   375   601 <b>Limited quantity (LQ):</b> 5 L <b>Excepted Quantities (EQ):</b> E1 <b>Hazard identification number (Kemler No.):</b> 90 <b>Classification code:</b> M6 <b>Tunnel restriction code:</b> (-)	<b>Special provisions:</b> 274   335   375   601 <b>Limited quantity (LQ):</b> 5 L <b>Excepted Quantities (EQ):</b> E1 <b>Classification code:</b> M6	<b>Special provisions:</b> 274   335   969 <b>Limited quantity (LQ):</b> 5 L <b>Excepted Quantities (EQ):</b> E1 <b>EmS-No.:</b> F-A, S-F	<b>Special provisions:</b> A97   A158   A197   A215 <b>Limited quantity (LQ):</b> Y964 <b>Excepted Quantities (EQ):</b> E1

### 14.7. Maritime transport in bulk according to IMO instruments

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

No data available

### 15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

## SECTION 16: Other information

### \* 16.1. Indication of changes

1.2.	Relevant identified uses of the substance or mixture and uses advised against
2.1.	Classification of the substance or mixture
2.2.	Label elements
4.1.	Description of first aid measures
5.1.	Extinguishing media
5.2.	Special hazards arising from the substance or mixture
6.3.	Methods and material for containment and cleaning up
7.1.	Precautions for safe handling
7.2.	Conditions for safe storage, including any incompatibilities
8.1.	Control parameters
8.2.	Exposure controls
9.1.	Information on basic physical and chemical properties
10.1.	Reactivity
10.6.	Hazardous decomposition products
11.1.	Information on hazard classes as defined in Regulation (EC) No 1272/2008
12.1.	Toxicity
12.3.	Bioaccumulative potential
14.1.	UN number or ID number
14.2.	UN proper shipping name
14.3.	Transport hazard class(es)
14.4.	Packing group
14.5.	Environmental hazards
14.6.	Special precautions for user
16.1.	Indication of changes
16.3.	Key literature references and sources for data

### 16.2. Abbreviations and acronyms

No data available

### \* 16.3. Key literature references and sources for data

GESTIS material database of German "IFA", accessed on 10.01.2022

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation ( <i>Skin Irrit. 2</i> )	H315: Causes skin irritation.	Calculation method.
Serious eye damage/eye irritation ( <i>Eye Irrit. 2</i> )	H319: Causes serious eye irritation.	Calculation method.
Acute toxicity (inhalative) ( <i>Acute Tox. 4</i> )	H332: Harmful if inhaled.	Calculation method.
Reproductive toxicity ( <i>Repr. 1A</i> )	H360D: May damage the unborn child.	Calculation method.
Hazardous to the aquatic environment ( <i>Aquatic Acute 1</i> )	H400: Very toxic to aquatic life.	Calculation method.

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Hazard classes and hazard categories	Hazard statements	Classification procedure
Hazardous to the aquatic environment ( <i>Aquatic Chronic 1</i> )	H410: Very toxic to aquatic life with long lasting effects.	Calculation method.

### 16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H360Df	May damage the unborn child. Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

### 16.6. Training advice

No data available

### 16.7. Additional information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

\* Data changed compared with the previous version