



## Safety Data Sheet according to Regulation (EC) No 1907/2006

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SDS No. : 608247  
V001.0

LOCTITE Ablestik EMI3620FA

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Replaces version from: -

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

#### 1.1. Product identifier

LOCTITE Ablestik EMI3620FA

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

Intended use:

Conductive adhesive

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

Henkel Ltd  
Wood Lane End  
HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 1442 278000

Fax-no.: +44 1442 278071

ua-productsafety.uk@henkel.com

#### 1.4. Emergency telephone number

24 Hours Emergency Tel: +44 (0)1442 278497

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification (CLP):

Skin sensitizer

Category 1

H317 May cause an allergic skin reaction.

Germ cell mutagenicity

Category 2

H341 Suspected of causing genetic defects.

Acute hazards to the aquatic environment

Category 1

H400 Very toxic to aquatic life.

Chronic hazards to the aquatic environment

Category 1

H410 Very toxic to aquatic life with long lasting effects.

#### 2.2. Label elements

##### Label elements (CLP):

##### Hazard pictogram:



Contains

Neodecanoic acid, oxiranylmethyl ester

Bisphenol-F epichlorhydrin resin; MW<700  
3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate  
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700)  
Epoxycyclohexylethyltrimethoxysilane

|                                 |   |
|---------------------------------|---|
| <b>Signal word:</b>             | Warning   |
| <b>Hazard statement:</b>        | H317 May cause an allergic skin reaction.<br>H341 Suspected of causing genetic defects.<br>H410 Very toxic to aquatic life with long lasting effects. |
| <b>Precautionary statement:</b> | P273 Avoid release to the environment.  |
| <b>Prevention</b>               | P280 Wear protective gloves/protective clothing.  |
| <b>Precautionary statement:</b> | P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  |
| <b>Response</b>                 |   |

### 2.3. Other hazards

None if used properly.

Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

**Declaration of the ingredients according to CLP (EC) No 1272/2008:**

| <b>Hazardous components<br/>CAS-No.</b>  | <b>EC Number<br/>REACH-Reg No.</b> | <b>content</b> | <b>Classification</b>  |
|--|------------------------------------|----------------|--|
| Silver >= 99,9 % Ag in powder<br>(>100nm<1mm )<br>7440-22-4  | 231-131-3<br>01-2119555669-21      | 50- 100 %      | Aquatic Acute 1<br>H400<br>Aquatic Chronic 1<br>H410<br>M factor (Acute Aquat Tox): 10 M factor<br>(Chron Aquat Tox): 10 |
| Copper<br>7440-50-8  | 231-159-6<br>01-2119480154-42      | 10- < 20 %     | Aquatic Acute 1<br>H400<br>Aquatic Chronic 3<br>H412   |
| Neodecanoic acid, oxiranylmethyl ester<br>26761-45-5   | 247-979-2<br>01-2119431597-33      | 1- < 5 %       | Skin Sens. 1; Dermal<br>H317<br>Aquatic Chronic 2<br>H411<br>Muta. 2<br>H341   |
| Bisphenol-F epichlorhydrin resin; MW<700<br>9003-36-5  | 01-2119454392-40                   | 1- < 5 %       | Skin Irrit. 2; Dermal<br>H315<br>Skin Sens. 1A<br>H317<br>Aquatic Chronic 2<br>H411                                      |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy<br>cyclohexyl carboxylate<br>2386-87-0   | 219-207-4<br>01-2119846133-44      | 1- < 5 %       | Skin Sens. 1<br>H317<br>STOT RE 2<br>H373<br>Aquatic Chronic 3<br>H412   |
| reaction product: bisphenol-A-<br>(epichlorhydrin); epoxy resin (number<br>average molecular weight≤700)<br>25068-38-6 | 01-2119456619-26                   | 1- < 2,5 %     | Skin Irrit. 2<br>H315<br>Skin Sens. 1<br>H317<br>Eye Irrit. 2<br>H319<br>Aquatic Chronic 2<br>H411                       |
| Epoxy cyclohexylethyltrimethoxysilane<br>3388-04-3   | 222-217-1                          | 0,1- < 1 %     | Skin Sens. 1B<br>H317<br>Muta. 2<br>H341<br>Carc. 2<br>H351<br>Aquatic Chronic 3<br>H412                                 |

**For full text of the H - statements and other abbreviations see section 16 "Other information".**  
**Substances without classification may have community workplace exposure limits available.**

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### Inhalation:

Move to fresh air. If symptoms persist, seek medical advice.

#### Skin contact:

Rinse with running water and soap.

Obtain medical attention if irritation persists.

#### Eye contact:

Rinse immediately with plenty of running water (for 10 minutes), seek medical attention from a specialist.

#### Ingestion:

Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

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

SKIN: Rash, Urticaria.

**4.3. Indication of any immediate medical attention and special treatment needed**

See section: Description of first aid measures

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media:**

water, carbon dioxide, foam, powder

**Extinguishing media which must not be used for safety reasons:**

High pressure waterjet

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

In the event of a fire, carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) can be released.

In case of fire, keep containers cool with water spray.

**5.3. Advice for firefighters**

Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

**Additional information:**

In case of fire, keep containers cool with water spray.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

Avoid contact with skin and eyes.

Wear protective equipment.

Ensure adequate ventilation.

**6.2. Environmental precautions**

Do not empty into drains / surface water / ground water.

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

For small spills wipe up with paper towel and place in container for disposal.

For large spills absorb onto inert absorbent material and place in sealed container for disposal.

Dispose of contaminated material as waste according to Section 13.

**6.4. Reference to other sections**

See advice in section 8

**SECTION 7: Handling and storage****7.1. Precautions for safe handling**

Avoid skin and eye contact.

See advice in section 8

**Hygiene measures:**

Good industrial hygiene practices should be observed.

Wash hands before work breaks and after finishing work.

Do not eat, drink or smoke while working.

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

Ensure good ventilation/extraction.

Keep container tightly sealed.

Refer to Technical Data Sheet

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

Conductive adhesive

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational Exposure Limits

Valid for  
Great Britain

| Ingredient [Regulated substance]                                   | ppm | mg/m <sup>3</sup> | Value type                        | Short term exposure limit category / Remarks | Regulatory list |
|--|-----|-------------------|-----------------------------------|--|-----------------|
| Silver<br>7440-22-4<br>[SILVER (METALLIC)]                         |     | 0,1               | Time Weighted Average (TWA):      |  | EH40 WEL        |
| Silver<br>7440-22-4<br>[SILVER, METALLIC]                          |     | 0,1               | Time Weighted Average (TWA):      | Indicative                                   | ECTLV           |
| Copper<br>7440-50-8<br>[COPPER, FUME]                              |     | 0,2               | Time Weighted Average (TWA):      |  | EH40 WEL        |
| Copper<br>7440-50-8<br>[COPPER, INHALABLE DUSTS AND MISTS (AS CU)] |     | 1                 | Time Weighted Average (TWA):      |  | EH40 WEL        |
| Copper<br>7440-50-8<br>[COPPER, INHALABLE DUSTS AND MISTS (AS CU)] |     | 2                 | Short Term Exposure Limit (STEL): |  | EH40 WEL        |

#### Occupational Exposure Limits

Valid for  
Ireland

| Ingredient [Regulated substance]                         | ppm | mg/m <sup>3</sup> | Value type                   | Short term exposure limit category / Remarks | Regulatory list |
|--|-----|-------------------|------------------------------|--|-----------------|
| Silver<br>7440-22-4<br>[SILVER (METALLIC)]               |     | 0,1               | Time Weighted Average (TWA): | Indicative OELV                              | IR_OEL          |
| Silver<br>7440-22-4<br>[SILVER, METALLIC]                |     | 0,1               | Time Weighted Average (TWA): | Indicative                                   | ECTLV           |
| Copper<br>7440-50-8<br>[COPPER (AS CU), DUSTS AND MISTS] |     | 1                 | Time Weighted Average (TWA): |  | IR_OEL          |
| Copper<br>7440-50-8<br>[COPPER (AS CU), FUME]            |     | 0,2               | Time Weighted Average (TWA): |  | IR_OEL          |

**Predicted No-Effect Concentration (PNEC):**

| Name on list  | Environmental<br>Compartment       | Exposure<br>period | Value           |     |                 |        | Remarks |
|---|------------------------------------|--------------------|-----------------|-----|-----------------|--------|---------|
|   |                                    |                    | mg/l            | ppm | mg/kg           | others |         |
| Silver >= 99,9 % Ag as powder<br>(>100nm<1mm ) classified for environment<br>7440-22-4                                  | aqua<br>(freshwater)               |                    | 0,00004<br>mg/l |     |                 |        |         |
| Silver >= 99,9 % Ag as powder<br>(>100nm<1mm ) classified for environment<br>7440-22-4                                  | aqua (marine<br>water)             |                    | 0,00086<br>mg/l |     |                 |        |         |
| Silver >= 99,9 % Ag as powder<br>(>100nm<1mm ) classified for environment<br>7440-22-4                                  | sewage<br>treatment plant<br>(STP) |                    | 0,025 mg/l      |     |                 |        |         |
| Silver >= 99,9 % Ag as powder<br>(>100nm<1mm ) classified for environment<br>7440-22-4                                  | sediment<br>(freshwater)           |                    |                 |     | 438,13<br>mg/kg |        |         |
| Silver >= 99,9 % Ag as powder<br>(>100nm<1mm ) classified for environment<br>7440-22-4                                  | sediment<br>(marine water)         |                    |                 |     | 438,13<br>mg/kg |        |         |
| Silver >= 99,9 % Ag as powder<br>(>100nm<1mm ) classified for environment<br>7440-22-4                                  | Air                                |                    |                 |     |                 |        |         |
| Silver >= 99,9 % Ag as powder<br>(>100nm<1mm ) classified for environment<br>7440-22-4                                  | Soil                               |                    |                 |     | 1,41 mg/kg      |        |         |
| Copper<br>7440-50-8   | Soil                               |                    |                 |     | 65 mg/kg        |        |         |
| Copper<br>7440-50-8   | sewage<br>treatment plant<br>(STP) |                    | 230 µg/l        |     |                 |        |         |
| Copper<br>7440-50-8   | sediment<br>(marine water)         |                    |                 |     | 676 mg/kg       |        |         |
| Copper<br>7440-50-8   | aqua<br>(freshwater)               |                    | 7,8 µg/l        |     |                 |        |         |
| Copper<br>7440-50-8   | aqua (marine<br>water)             |                    | 5,2 µg/l        |     |                 |        |         |
| Copper<br>7440-50-8   | sediment<br>(freshwater)           |                    |                 |     | 87 mg/kg        |        |         |
| 2,3-Epoxypropyl neodecanoate<br>26761-45-5  | aqua<br>(freshwater)               |                    | 0,0035<br>mg/l  |     |                 |        |         |
| 2,3-Epoxypropyl neodecanoate<br>26761-45-5  | aqua (marine<br>water)             |                    | 0,00035<br>mg/l |     |                 |        |         |
| 2,3-Epoxypropyl neodecanoate<br>26761-45-5  | sewage<br>treatment plant<br>(STP) |                    | 50 mg/l         |     |                 |        |         |
| 2,3-Epoxypropyl neodecanoate<br>26761-45-5  | aqua<br>(intermittent<br>releases) |                    | 0,035 mg/l      |     |                 |        |         |
| Reaction product: bisphenol-F-<br>(epichlorhydrin); epoxy resin (number<br>average molecular weight ≤ 700)<br>9003-36-5 | aqua<br>(freshwater)               |                    | 0,003 mg/l      |     |                 |        |         |
| Reaction product: bisphenol-F-<br>(epichlorhydrin); epoxy resin (number<br>average molecular weight ≤ 700)<br>9003-36-5 | aqua (marine<br>water)             |                    | 0,0003<br>mg/l  |     |                 |        |         |
| Reaction product: bisphenol-F-<br>(epichlorhydrin); epoxy resin (number<br>average molecular weight ≤ 700)<br>9003-36-5 | sewage<br>treatment plant<br>(STP) |                    | 10 mg/l         |     |                 |        |         |
| Reaction product: bisphenol-F-<br>(epichlorhydrin); epoxy resin (number<br>average molecular weight ≤ 700)<br>9003-36-5 | sediment<br>(freshwater)           |                    |                 |     | 0,294<br>mg/kg  |        |         |
| Reaction product: bisphenol-F-<br>(epichlorhydrin); epoxy resin (number<br>average molecular weight ≤ 700)<br>9003-36-5 | sediment<br>(marine water)         |                    |                 |     | 0,0294<br>mg/kg |        |         |
| Reaction product: bisphenol-F-<br>(epichlorhydrin); epoxy resin (number<br>average molecular weight ≤ 700)<br>9003-36-5 | Soil                               |                    |                 |     | 0,237<br>mg/kg  |        |         |
| Reaction product: bisphenol-F-<br>(epichlorhydrin); epoxy resin (number   | aqua<br>(intermittent              |                    | 0,0254<br>mg/l  |     |                 |        |         |

|   |                              |  |             |  |              |  |  |
|---|------------------------------|--|-------------|--|--------------|--|--|
| average molecular weight ≤ 700)<br>9003-36-5  | releases)                    |  |             |  |              |  |  |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)<br>9003-36-5  | Air                          |  |             |  |              |  |  |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)<br>9003-36-5  | Predator                     |  |             |  |              |  |  |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate<br>2386-87-0                          | aqua (freshwater)            |  | 0,024 mg/l  |  |              |  |  |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate<br>2386-87-0                          | aqua (marine water)          |  | 0,0024 mg/l |  |              |  |  |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate<br>2386-87-0                          | aqua (intermittent releases) |  | 0,24 mg/l   |  |              |  |  |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate<br>2386-87-0                          | sewage treatment plant (STP) |  | 19,5 mg/l   |  |              |  |  |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate<br>2386-87-0                          | sediment (freshwater)        |  |             |  | 0,211 mg/kg  |  |  |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate<br>2386-87-0                          | sediment (marine water)      |  |             |  | 0,0211 mg/kg |  |  |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate<br>2386-87-0                          | Soil                         |  |             |  | 0,0282 mg/kg |  |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)<br>25068-38-6 | aqua (freshwater)            |  | 0,006 mg/l  |  |              |  |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)<br>25068-38-6 | aqua (marine water)          |  | 0,001 mg/l  |  |              |  |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)<br>25068-38-6 | sewage treatment plant (STP) |  | 10 mg/l     |  |              |  |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)<br>25068-38-6 | sediment (freshwater)        |  |             |  | 0,996 mg/kg  |  |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)<br>25068-38-6 | sediment (marine water)      |  |             |  | 0,1 mg/kg    |  |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)<br>25068-38-6 | Soil                         |  |             |  | 0,196 mg/kg  |  |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)<br>25068-38-6 | oral                         |  |             |  | 11 mg/kg     |  |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)<br>25068-38-6 | aqua (intermittent releases) |  | 0,018 mg/l  |  |              |  |  |

**Derived No-Effect Level (DNEL):**

| Name on list  | Application Area   | Route of Exposure | Health Effect                                | Exposure Time | Value        | Remarks |
|---|--------------------|-------------------|--|---------------|--------------|---------|
| Silver >= 99,9 % Ag as powder (>100nm<1mm ) classified for environment 7440-22-4                              | Workers            | inhalation        | Long term exposure - systemic effects        |               | 0,1 mg/m3    |         |
| Silver >= 99,9 % Ag as powder (>100nm<1mm ) classified for environment 7440-22-4                              | General population | inhalation        | Long term exposure - systemic effects        |               | 0,04 mg/m3   |         |
| Silver >= 99,9 % Ag as powder (>100nm<1mm ) classified for environment 7440-22-4                              | General population | oral              | Long term exposure - systemic effects        |               | 1,2 mg/kg    |         |
| Copper 7440-50-8  | Workers            | dermal            | Acute/short term exposure - systemic effects |               | 273 mg/kg    |         |
| Copper 7440-50-8  | General population | inhalation        | Acute/short term exposure - local effects    |               | 1 mg/m3      |         |
| Copper 7440-50-8  | General population | inhalation        | Long term exposure - local effects           |               | 1 mg/m3      |         |
| Copper 7440-50-8  | General population | dermal            | Acute/short term exposure - systemic effects |               | 273 mg/kg    |         |
| Copper 7440-50-8  | Workers            | dermal            | Long term exposure - systemic effects        |               | 137 mg/kg    |         |
| Copper 7440-50-8  | General population | dermal            | Long term exposure - systemic effects        |               | 137 mg/kg    |         |
| Copper 7440-50-8  | General population | oral              | Long term exposure - systemic effects        |               | 0,041 mg/kg  |         |
| 2,3-Epoxypropyl neodecanoate 26761-45-5   | Workers            | dermal            | Long term exposure - systemic effects        |               | 1,4 mg/kg    |         |
| 2,3-Epoxypropyl neodecanoate 26761-45-5   | Workers            | Inhalation        | Long term exposure - systemic effects        |               | 1,965 mg/m3  |         |
| 2,3-Epoxypropyl neodecanoate 26761-45-5   | General population | dermal            | Long term exposure - systemic effects        |               | 0,7 mg/kg    |         |
| 2,3-Epoxypropyl neodecanoate 26761-45-5   | General population | Inhalation        | Long term exposure - systemic effects        |               | 1 mg/m3      |         |
| 2,3-Epoxypropyl neodecanoate 26761-45-5   | General population | oral              | Long term exposure - systemic effects        |               | 1,1 mg/kg    |         |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) 9003-36-5 | Workers            | dermal            | Long term exposure - systemic effects        |               | 104,15 mg/kg |         |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) 9003-36-5 | Workers            | Inhalation        | Long term exposure - systemic effects        |               | 29,39 mg/m3  |         |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) 9003-36-5 | General population | dermal            | Long term exposure - systemic effects        |               | 62,5 mg/kg   |         |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) 9003-36-5 | General population | Inhalation        | Long term exposure - systemic effects        |               | 8,7 mg/m3    |         |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) 9003-36-5 | General population | oral              | Long term exposure - systemic effects        |               | 6,25 mg/kg   |         |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) 9003-36-5 | Workers            | dermal            | Acute/short term exposure - local effects    |               | 8,3 µg/cm2   |         |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate                                   | Workers            | inhalation        | Long term exposure -                         |               | 0,18 mg/m3   |         |



|  |                    |            |  |  |             |  |
|--|--------------------|------------|--|--|-------------|--|
| 2386-87-0  |                    |            | systemic effects                             |  |             |  |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate<br>2386-87-0                           | Workers            | inhalation | Long term exposure - local effects           |  | 0,18 mg/m3  |  |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate<br>2386-87-0                           | Workers            | dermal     | Long term exposure - systemic effects        |  | 0,05 mg/kg  |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)<br>25068-38-6 | Workers            | dermal     | Acute/short term exposure - systemic effects |  | 8,33 mg/kg  |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)<br>25068-38-6 | Workers            | Inhalation | Acute/short term exposure - systemic effects |  | 12,25 mg/m3 |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)<br>25068-38-6 | Workers            | dermal     | Long term exposure - systemic effects        |  | 8,33 mg/kg  |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)<br>25068-38-6 | Workers            | Inhalation | Long term exposure - systemic effects        |  | 12,25 mg/m3 |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)<br>25068-38-6 | General population | dermal     | Acute/short term exposure - systemic effects |  | 3,571 mg/kg |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)<br>25068-38-6 | General population | dermal     | Long term exposure - systemic effects        |  | 3,571 mg/kg |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)<br>25068-38-6 | General population | oral       | Acute/short term exposure - systemic effects |  | 0,75 mg/kg  |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)<br>25068-38-6 | General population | oral       | Long term exposure - systemic effects        |  | 0,75 mg/kg  |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)<br>25068-38-6 | General population | inhalation | Acute/short term exposure - systemic effects |  | 0,75 mg/m3  |  |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)<br>25068-38-6 | General population | inhalation | Long term exposure - systemic effects        |  | 0,75 mg/m3  |  |

**Biological Exposure Indices:**

None

**8.2. Exposure controls:**

Engineering controls:

Ensure good ventilation/extraction.

Respiratory protection:

Ensure adequate ventilation.

An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area

Filter type: A (EN 14387)

**Hand protection:**

Chemical-resistant protective gloves (EN 374).

Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):

nitrile rubber (NBR;  $\geq 0.4$  mm thickness)

Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):

nitrile rubber (NBR;  $\geq 0.4$  mm thickness)

This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

**Eye protection:**

Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.

Protective eye equipment should conform to EN166.

**Skin protection:**

Wear suitable protective clothing.

Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

**Advices to personal protection equipment:**

The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions.

Personal protective equipment should conform to the relevant EN standard.

## SECTION 9: Physical and chemical properties

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

|  |                                    |
|--|------------------------------------|
| Appearance                             | paste<br>liquid<br>silver          |
| Odor                                   | mild                               |
| Odour threshold                        | No data available / Not applicable |
| pH                                     | No data available / Not applicable |
| Melting point                          | No data available / Not applicable |
| Solidification temperature             | No data available / Not applicable |
| Initial boiling point                  | No data available / Not applicable |
| Flash point                            | > 93 °C (> 199.4 °F)               |
| Evaporation rate                       | No data available / Not applicable |
| Flammability                           | No data available / Not applicable |
| Explosive limits                       | No data available / Not applicable |
| Vapour pressure                        | No data available / Not applicable |
| Relative vapour density:               | No data available / Not applicable |
| Density                                | 4,07 g/cm <sup>3</sup>             |
| ( )                                    |                                    |
| Bulk density                           | No data available / Not applicable |
| Solubility                             | No data available / Not applicable |
| Solubility (qualitative)               | Insoluble                          |
| (Solvent: Water)                       |                                    |
| Partition coefficient: n-octanol/water | No data available / Not applicable |
| Auto-ignition temperature              | No data available / Not applicable |
| Decomposition temperature              | No data available / Not applicable |
| Viscosity                              | 4.800 mPa.s                        |
| ( )                                    |                                    |
| Viscosity (kinematic)                  | No data available / Not applicable |
| Explosive properties                   | No data available / Not applicable |
| Oxidising properties                   | No data available / Not applicable |

**9.2. Other information**

No data available / Not applicable

**SECTION 10: Stability and reactivity****10.1. Reactivity**

Reaction with strong acids.

Reacts with strong oxidants.

**10.2. Chemical stability**

Stable under recommended storage conditions.

**10.3. Possibility of hazardous reactions**

See section reactivity

**10.4. Conditions to avoid**

Stable under normal conditions of storage and use.

**10.5. Incompatible materials**

See section reactivity.

**10.6. Hazardous decomposition products**

carbon oxides.

**SECTION 11: Toxicological information****11.1. Information on toxicological effects****Acute oral toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No.  | Value<br>type | Value         | Species | Method                                   |
|--|---------------|---------------|---------|--|
| Silver >= 99,9 % Ag in<br>powder (>100nm<1mm )<br>7440-22-4  | LD50          | > 2.000 mg/kg | rat     | OECD Guideline 401 (Acute Oral Toxicity) |
| Copper<br>7440-50-8  | LD50          | > 2.500 mg/kg | rat     | OECD Guideline 423 (Acute Oral toxicity) |
| Neodecanoic acid,<br>oxiranylmethyl ester<br>26761-45-5  | LD50          | > 2.000 mg/kg | rat     | OECD Guideline 420 (Acute Oral Toxicity) |
| Bisphenol-F<br>epichlorhydrin resin;<br>MW<700<br>9003-36-5  | LD50          | > 5.000 mg/kg | rat     | OECD Guideline 401 (Acute Oral Toxicity) |
| 3,4-Epoxy cyclohexyl<br>methyl-3,4-epoxy<br>cyclohexyl carboxylate<br>2386-87-0  | LD50          | 5.000 mg/kg   | rat     | OECD Guideline 401 (Acute Oral Toxicity) |
| reaction product:<br>bisphenol-A-<br>(epichlorhydrin); epoxy<br>resin (number average<br>molecular weight≤700)<br>25068-38-6 | LD50          | > 2.000 mg/kg | rat     | OECD Guideline 420 (Acute Oral Toxicity) |
| Epoxy cyclohexylethyltri<br>methoxysilane<br>3388-04-3   | LD50          | 13.000 mg/kg  | rat     |  |

**Acute dermal toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No.  | Value<br>type | Value         | Species | Method                                     |
|--|---------------|---------------|---------|--|
| Silver >= 99,9 % Ag in powder (>100nm<1mm )<br>7440-22-4   | LD50          | > 2.000 mg/kg | rat     | OECD Guideline 402 (Acute Dermal Toxicity) |
| Copper<br>7440-50-8  | LD50          | > 2.000 mg/kg | rat     | OECD Guideline 402 (Acute Dermal Toxicity) |
| Neodecanoic acid,<br>oxiranylmethyl ester<br>26761-45-5  | LD50          | > 2.000 mg/kg | rat     | OECD Guideline 402 (Acute Dermal Toxicity) |
| Bisphenol-F<br>epichlorhydrin resin;<br>MW<700<br>9003-36-5  | LD50          | > 2.000 mg/kg | rat     | OECD Guideline 402 (Acute Dermal Toxicity) |
| 3,4-Epoxy cyclohexyl<br>methyl-3,4-epoxy<br>cyclohexyl carboxylate<br>2386-87-0  | LD50          | > 2.000 mg/kg | rat     | OECD Guideline 402 (Acute Dermal Toxicity) |
| reaction product:<br>bisphenol-A-<br>(epichlorhydrin); epoxy<br>resin (number average<br>molecular weight≤700)<br>25068-38-6 | LD50          | > 2.000 mg/kg | rat     | OECD Guideline 402 (Acute Dermal Toxicity) |
| Epoxy cyclohexylethyltri<br>methoxysilane<br>3388-04-3   | LD50          | 6.700 mg/kg   | rabbit  |  |

**Acute inhalative toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No.   | Value<br>type | Value       | Test atmosphere | Exposure<br>time | Species | Method   |
|---|---------------|-------------|-----------------|------------------|---------|--|
| Copper<br>7440-50-8   | LC50          | > 5,11 mg/l | dust/mist       | 4 h              | rat     | OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class (ATC) Method) |
| 3,4-Epoxy cyclohexyl<br>methyl-3,4-epoxy<br>cyclohexyl carboxylate<br>2386-87-0 | LC50          | > 5,19 mg/l | dust/mist       | 4 h              | rat     | OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class (ATC) Method) |

**Skin corrosion/irritation:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No.  | Result                   | Exposure<br>time | Species | Method  |
|--|--------------------------|------------------|---------|---|
| Copper<br>7440-50-8  | not irritating           |                  | rabbit  | EU Method B.4 (Acute Toxicity: Dermal Irritation / Corrosion) |
| Bisphenol-F<br>epichlorhydrin resin;<br>MW<700<br>9003-36-5  | irritating               | 4 h              | rabbit  | OECD Guideline 404 (Acute Dermal Irritation / Corrosion)      |
| reaction product:<br>bisphenol-A-<br>(epichlorhydrin); epoxy<br>resin (number average<br>molecular weight≤700)<br>25068-38-6 | moderately<br>irritating | 24 h             | rabbit  | Draize Test   |

**Serious eye damage/irritation:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No.  | Result         | Exposure<br>time | Species | Method  |
|--|----------------|------------------|---------|---|
| Copper<br>7440-50-8  | not irritating |                  | rabbit  | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| Bisphenol-F<br>epichlorhydrin resin;<br>MW<700<br>9003-36-5  | not irritating |                  | rabbit  | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| reaction product:<br>bisphenol-A-<br>(epichlorhydrin); epoxy<br>resin (number average<br>molecular weight≤700)<br>25068-38-6 | not irritating |                  | rabbit  | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |

**Respiratory or skin sensitization:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No.  | Result          | Test type                             | Species    | Method   |
|--|-----------------|---------------------------------------|------------|--|
| Copper<br>7440-50-8  | not sensitising | Guinea pig maximisation<br>test       | guinea pig | EU Method B.6 (Skin Sensitisation)                                 |
| Neodecanoic acid,<br>oxiranylmethyl ester<br>26761-45-5  | sensitising     | Guinea pig maximisation<br>test       | guinea pig | OECD Guideline 406 (Skin Sensitisation)                            |
| Bisphenol-F<br>epichlorhydrin resin;<br>MW<700<br>9003-36-5  | sensitising     | Mouse local lymphnode<br>assay (LLNA) | mouse      | OECD Guideline 429 (Skin Sensitisation:<br>Local Lymph Node Assay) |
| 3,4-Epoxy cyclohexyl<br>methyl-3,4-epoxy<br>cyclohexyl carboxylate<br>2386-87-0  | sensitising     | Guinea pig maximisation<br>test       | guinea pig | OECD Guideline 406 (Skin Sensitisation)                            |
| reaction product:<br>bisphenol-A-<br>(epichlorhydrin); epoxy<br>resin (number average<br>molecular weight≤700)<br>25068-38-6 | sensitising     | Mouse local lymphnode<br>assay (LLNA) | mouse      | OECD Guideline 429 (Skin Sensitisation:<br>Local Lymph Node Assay) |
| Epoxycyclohexylethyltri<br>methoxysilane<br>3388-04-3  | sensitising     | Buehler test                          | guinea pig | OECD Guideline 406 (Skin Sensitisation)                            |

**Germ cell mutagenicity:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No.  | Result   | Type of study /<br>Route of<br>administration          | Metabolic<br>activation /<br>Exposure time | Species | Method  |
|--|----------|--|--|---------|---|
| Silver >= 99,9 % Ag in<br>powder (>100nm<1mm )<br>7440-22-4  | negative | in vitro mammalian<br>cell micronucleus<br>test        | with and without                           |         | OECD Guideline 487 (In vitro<br>Mammalian Cell<br>Micronucleus Test)                    |
| Copper<br>7440-50-8  | negative | bacterial reverse<br>mutation assay (e.g<br>Ames test) | with and without                           |         | OECD Guideline 471<br>(Bacterial Reverse Mutation<br>Assay)                             |
| Bisphenol-F<br>epichlorhydrin resin;<br>MW<700<br>9003-36-5  | positive | bacterial reverse<br>mutation assay (e.g<br>Ames test) | with and without                           |         | OECD Guideline 471<br>(Bacterial Reverse Mutation<br>Assay)                             |
| reaction product:<br>bisphenol-A-<br>(epichlorhydrin); epoxy<br>resin (number average<br>molecular weight≤700)<br>25068-38-6 | negative | bacterial reverse<br>mutation assay (e.g<br>Ames test) | with and without                           |         | OECD Guideline 472 (Genetic<br>Toxicology: Escherichia coli,<br>Reverse Mutation Assay) |

**Carcinogenicity**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous components<br>CAS-No.  | Result           | Route of<br>application | Exposure<br>time /<br>Frequency<br>of treatment | Species | Sex         | Method   |
|--|------------------|-------------------------|---|---------|-------------|--|
| reaction product:<br>bisphenol-A-<br>(epichlorhydrin); epoxy<br>resin (number average<br>molecular weight≤700)<br>25068-38-6 | not carcinogenic | dermal                  | 2 y<br>daily                                    | mouse   | male        | OECD Guideline 453<br>(Combined Chronic<br>Toxicity /<br>Carcinogenicity<br>Studies) |
| reaction product:<br>bisphenol-A-<br>(epichlorhydrin); epoxy<br>resin (number average<br>molecular weight≤700)<br>25068-38-6 | not carcinogenic | oral: gavage            | 2 y<br>daily                                    | rat     | male/female | OECD Guideline 453<br>(Combined Chronic<br>Toxicity /<br>Carcinogenicity<br>Studies) |

**Reproductive toxicity:**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No.  | Result / Value  | Test type                   | Route of<br>application | Species | Method   |
|--|---|-----------------------------|-------------------------|---------|--|
| Copper<br>7440-50-8  | NOAEL P 1500 ppm<br>NOAEL F1 1000 ppm<br>NOAEL F2 1000 ppm            | two-<br>generation<br>study | oral: feed              | rat     | OECD Guideline 416 (Two-<br>Generation Reproduction<br>Toxicity Study) |
| Copper<br>7440-50-8  | NOAEL P 1000 ppm<br>NOAEL F1 1000 ppm<br>NOAEL F2 1000 ppm            | two-<br>generation<br>study | oral: feed              | rat     | OECD Guideline 416 (Two-<br>Generation Reproduction<br>Toxicity Study) |
| Bisphenol-F<br>epichlorhydrin resin;<br>MW<700<br>9003-36-5  | NOAEL P > 750 mg/kg<br>NOAEL F1 750 mg/kg<br>NOAEL F2 750 mg/kg       | two-<br>generation<br>study | oral: gavage            | rat     | OECD Guideline 416 (Two-<br>Generation Reproduction<br>Toxicity Study) |
| reaction product:<br>bisphenol-A-<br>(epichlorhydrin); epoxy<br>resin (number average<br>molecular weight≤700)<br>25068-38-6 | NOAEL P >= 50 mg/kg<br>NOAEL F1 >= 750 mg/kg<br>NOAEL F2 >= 750 mg/kg | Two<br>generation<br>study  | oral: gavage            | rat     | OECD Guideline 416 (Two-<br>Generation Reproduction<br>Toxicity Study) |

**STOT-single exposure:**

No data available.

**STOT-repeated exposure::**

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| <b>Hazardous substances<br/>CAS-No.</b>  | <b>Result / Value</b> | <b>Route of<br/>application</b> | <b>Exposure time /<br/>Frequency of<br/>treatment</b> | <b>Species</b> | <b>Method</b>  |
|--|-----------------------|---------------------------------|---|----------------|--|
| Copper<br>7440-50-8  | NOAEL 1000 ppm        | oral: feed                      | 92 d<br>7 d/w   | rat            | EU Method B.26 (Sub-Chronic Oral Toxicity Test: Repeated Dose 90-Day Oral Toxicity Study in Rodents) |
| Bisphenol-F<br>epichlorhydrin resin;<br>MW<700<br>9003-36-5  | NOAEL 250 mg/kg       | oral: gavage                    | 13 w<br>daily   | rat            | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)                                   |
| 3,4-Epoxy cyclohexyl<br>methyl-3,4-epoxy<br>cyclohexyl carboxylate<br>2386-87-0  | NOAEL 5 mg/kg         | oral: gavage                    | 91 d<br>daily   | rat            | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)                                   |
| reaction product:<br>bisphenol-A-<br>(epichlorhydrin); epoxy<br>resin (number average<br>molecular weight≤700)<br>25068-38-6 | NOAEL 50 mg/kg        | oral: gavage                    | 14 w<br>daily   | rat            | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)                                   |

**Aspiration hazard:**

No data available.

## SECTION 12: Ecological information

### General ecological information:

Do not empty into drains / surface water / ground water.

### 12.1. Toxicity

#### Toxicity (Fish):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No.   | Value<br>type | Value          | Exposure time | Species             | Method   |
|---|---------------|----------------|---------------|---------------------|--|
| Silver >= 99,9 % Ag in powder (>100nm<1mm )<br>7440-22-4  | LC50          | 0,0012 mg/l    | 96 h          | Pimephales promelas | other guideline:   |
| Silver >= 99,9 % Ag in powder (>100nm<1mm )<br>7440-22-4  | EC10          | 0,00019 mg/l   | 217 d         | Salmo trutta        | OECD Guideline 210 (fish early lite stage toxicity test) |
| Copper<br>7440-50-8   | LC 50         | > 0,1 - 1 mg/l | 96 h          | not specified       | OECD Guideline 203 (Fish, Acute Toxicity Test)           |
| Copper<br>7440-50-8   | NOEC          | > 0,1 - 1 mg/l | 28 d          | not specified       | OECD Guideline 210 (fish early lite stage toxicity test) |
| Neodecanoic acid, oxiranylmethyl ester<br>26761-45-5  | LC50          | 9,61 mg/l      | 96 h          | Oncorhynchus mykiss | EPA OTS 797.1400 (Fish Acute Toxicity Test)              |
| Bisphenol-F epichlorhydrin resin; MW<700<br>9003-36-5   | LC50          | 5,7 mg/l       | 96 h          | Leuciscus idus      | OECD Guideline 203 (Fish, Acute Toxicity Test)           |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate<br>2386-87-0                                       | LC50          | 24 mg/l        | 96 h          | Oncorhynchus mykiss | OECD Guideline 203 (Fish, Acute Toxicity Test)           |
| reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700)<br>25068-38-6 | LC50          | 1,75 mg/l      | 96 h          | Oncorhynchus mykiss | OECD Guideline 203 (Fish, Acute Toxicity Test)           |
| Epoxycyclohexylethyltrimethoxysilane<br>3388-04-3   | LC50          | 42,3 mg/l      | 96 h          | Cyprinus carpio     | OECD Guideline 203 (Fish, Acute Toxicity Test)           |

#### Toxicity (Daphnia):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No.   | Value<br>type | Value          | Exposure time | Species       | Method   |
|---|---------------|----------------|---------------|---------------|--|
| Silver >= 99,9 % Ag in powder (>100nm<1mm )<br>7440-22-4  | EC50          | 0,00022 mg/l   | 48 h          | Daphnia magna | other guideline:   |
| Copper<br>7440-50-8   | EC50          | > 0,1 - 1 mg/l | 48 h          | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Neodecanoic acid, oxiranylmethyl ester<br>26761-45-5  | EC50          | 4,8 mg/l       | 48 h          | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Bisphenol-F epichlorhydrin resin; MW<700<br>9003-36-5   | EC50          | 2,55 mg/l      | 48 h          | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate<br>2386-87-0                                       | EC50          | 40 mg/l        | 48 h          | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700)<br>25068-38-6 | EC50          | 1,7 mg/l       | 48 h          | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Epoxycyclohexylethyltrimethoxysilane<br>3388-04-3   | EC50          | 58 mg/l        | 48 h          | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |



**Chronic toxicity to aquatic invertebrates**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No.   | Value<br>type | Value          | Exposure time | Species       | Method   |
|---|---------------|----------------|---------------|---------------|--|
| Silver >= 99,9 % Ag in powder (>100nm<1mm )<br>7440-22-4  | NOEC          | 0,00032 mg/l   | 21 d          | Daphnia magna | EPA OPPTS 850.1300 (Daphnid Chronic Toxicity Test) |
| Copper<br>7440-50-8   | NOEC          | > 0,1 - 1 mg/l | 21 d          | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test)        |
| Bisphenol-F epichlorhydrin resin; MW<700<br>9003-36-5   | NOEC          | 0,3 mg/l       | 21 d          | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test)        |
| reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700)<br>25068-38-6 | NOEC          | 0,3 mg/l       | 21 d          | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test)        |
| Epoxycyclohexylethyltrimethoxysilane<br>3388-04-3   | NOEC          | 16 mg/l        | 21 d          | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test)        |

**Toxicity (Algae):**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No.   | Value<br>type | Value          | Exposure time | Species   | Method  |
|---|---------------|----------------|---------------|---|---|
| Silver >= 99,9 % Ag in powder (>100nm<1mm )<br>7440-22-4  | EC10          | 0,00016 mg/l   | 15 d          | other:  | other guideline:                                  |
| Copper<br>7440-50-8   | EC50          | > 0,1 - 1 mg/l | 72 h          | not specified   | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Copper<br>7440-50-8   | NOEC          | > 0,1 - 1 mg/l | 72 h          | not specified   | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Neodecanoic acid, oxiranylmethyl ester<br>26761-45-5  | NOEC          | 1 mg/l         | 96 h          | Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Bisphenol-F epichlorhydrin resin; MW<700<br>9003-36-5   | EC50          | 1,8 mg/l       | 72 h          | Pseudokirchneriella subcapitata                                       | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate<br>2386-87-0                                       | EC50          | > 110 mg/l     | 72 h          | Pseudokirchneriella subcapitata                                       | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate<br>2386-87-0                                       | NOEC          | 30 mg/l        | 72 h          | Pseudokirchneriella subcapitata                                       | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700)<br>25068-38-6 | EC50          | > 11 mg/l      | 72 h          | Scenedesmus capricornutum   | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700)<br>25068-38-6 | NOEC          | 4,2 mg/l       | 72 h          | Scenedesmus capricornutum   | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Epoxycyclohexylethyltrimethoxysilane<br>3388-04-3   | NOEC          | 6 mg/l         | 72 h          | Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Epoxycyclohexylethyltrimethoxysilane<br>3388-04-3   | EC50          | 90 mg/l        | 72 h          | Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |

### Toxicity to microorganisms

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances<br>CAS-No.   | Value<br>type | Value          | Exposure time | Species   | Method   |
|---|---------------|----------------|---------------|---|--|
| Copper<br>7440-50-8   | EC50          | > 0,1 - 1 mg/l | 3 h           | activated sludge                                    | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| Neodecanoic acid, oxiranylmethyl ester<br>26761-45-5  | EC 50         | > 100 mg/l     |               |   | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| Bisphenol-F epichlorhydrin resin; MW<700<br>9003-36-5   | IC50          | > 100 mg/l     | 3 h           | activated sludge, industrial                        | other guideline:   |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate<br>2386-87-0                                       | EC10          | 409 mg/l       | 3 h           | activated sludge of a predominantly domestic sewage | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700)<br>25068-38-6 | IC50          | > 100 mg/l     | 3 h           | activated sludge, industrial                        | other guideline:   |
| Epoxycyclohexylethyltrimethoxysilane<br>3388-04-3   | EC 50         | > 100 mg/l     | 30 min        |   | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |

### 12.2. Persistence and degradability

| Hazardous substances<br>CAS-No.   | Result  | Test type     | Degradability | Exposure<br>time | Method  |
|---|---|---------------|---------------|------------------|---|
| Copper<br>7440-50-8   | Rapidly degradable                                  | not specified | > 60 %        | 28 d             | OECD 301 A - F  |
| Neodecanoic acid,<br>oxiranylmethyl ester<br>26761-45-5   | under test conditions no<br>biodegradation observed | aerobic       | 7 - 8 %       | 28 d             | OECD Guideline 301 D (Ready<br>Biodegradability: Closed Bottle<br>Test)           |
| Bisphenol-F epichlorhydrin<br>resin; MW<700<br>9003-36-5  | not readily biodegradable.                          | aerobic       | 0 %           | 28 d             | OECD Guideline 301 D (Ready<br>Biodegradability: Closed Bottle<br>Test)           |
| 3,4-Epoxy cyclohexyl methyl-<br>3,4-epoxy cyclohexyl<br>carboxylate<br>2386-87-0  | not readily biodegradable.                          | aerobic       | 71 %          | 28 d             | OECD Guideline 301 B (Ready<br>Biodegradability: CO2 Evolution<br>Test)           |
| reaction product: bisphenol-A-<br>(epichlorhydrin); epoxy resin<br>(number average molecular<br>weight≤700)<br>25068-38-6 | not readily biodegradable.                          | aerobic       | 5 %           | 28 d             | OECD Guideline 301 F (Ready<br>Biodegradability: Manometric<br>Respirometry Test) |
| Epoxycyclohexylethyltrimetho<br>xysilane<br>3388-04-3   |   | aerobic       | 28 %          | 28 d             | OECD Guideline 301 D (Ready<br>Biodegradability: Closed Bottle<br>Test)           |

### 12.3. Bioaccumulative potential

| Hazardous substances<br>CAS-No.                             | Bioconcentratio<br>n factor (BCF) | Exposure time | Temperature | Species         | Method           |
|---|-----------------------------------|---------------|-------------|-----------------|------------------|
| Silver >= 99,9 % Ag in<br>powder (>100nm<1mm )<br>7440-22-4 | 70                                | 42 d          | 20 °C       | Cyprinus carpio | other guideline: |

### 12.4. Mobility in soil

| Hazardous substances<br>CAS-No.   | LogPow    | Temperature | Method   |
|---|-----------|-------------|--|
| Neodecanoic acid, oxiranylmethyl ester<br>26761-45-5  | 4,4       | 20 °C       | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)        |
| Bisphenol-F epichlorhydrin resin; MW<700<br>9003-36-5   | 2,7 - 3,6 |             | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)        |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate<br>2386-87-0                                       | 1,34      | 20 °C       | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700)<br>25068-38-6 | 3,242     | 25 °C       | EU Method A.8 (Partition Coefficient)  |
| Epoxy cyclohexylethyltrimethoxysilane<br>3388-04-3  | 4,1       | 23 °C       | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)        |

## 12.5. Results of PBT and vPvB assessment

| Hazardous substances<br>CAS-No.   | PBT / vPvB  |
|---|---|
| Silver >= 99,9 % Ag in powder (>100nm<1mm)<br>7440-22-4   | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.           |
| Copper<br>7440-50-8   | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.           |
| Neodecanoic acid, oxiranylmethyl ester<br>26761-45-5  | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.           |
| Bisphenol-F epichlorhydrin resin; MW<700<br>9003-36-5   | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.           |
| 3,4-Epoxy cyclohexyl methyl-3,4-epoxy cyclohexyl carboxylate<br>2386-87-0                                       | According to Annex XIII of regulation (EC) 1907/2006 a PBT and vPvB assessment shall not be conducted for inorganic substances. |
| reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight≤700)<br>25068-38-6 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.           |

## 12.6. Other adverse effects

No data available.

# SECTION 13: Disposal considerations

## 13.1. Waste treatment methods

Product disposal:

Do not empty into drains / surface water / ground water.

Dispose of in accordance with local and national regulations.

Disposal of uncleaned packages:

After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.

Waste code

08 04 09 waste adhesives and sealants containing organic solvents and other dangerous substances

The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

## SECTION 14: Transport information

### 14.1. UN number

|      |      |
|------|------|
| ADR  | 3082 |
| RID  | 3082 |
| ADN  | 3082 |
| IMDG | 3082 |
| IATA | 3082 |

### 14.2. UN proper shipping name

|      |  |
|------|--|
| ADR  | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(Silver,Copper) |
| RID  | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(Silver,Copper) |
| ADN  | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(Silver,Copper) |
| IMDG | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(Silver,Copper) |
| IATA | Environmentally hazardous substance, liquid, n.o.s. (Silver,Copper)    |

### 14.3. Transport hazard class(es)

|      |   |
|------|---|
| ADR  | 9 |
| RID  | 9 |
| ADN  | 9 |
| IMDG | 9 |
| IATA | 9 |

### 14.4. Packing group

|      |     |
|------|-----|
| ADR  | III |
| RID  | III |
| ADN  | III |
| IMDG | III |
| IATA | III |

### 14.5. Environmental hazards

|      |                  |
|------|------------------|
| ADR  | not applicable   |
| RID  | not applicable   |
| ADN  | not applicable   |
| IMDG | Marine pollutant |
| IATA | not applicable   |

### 14.6. Special precautions for user

|      |                               |
|------|-------------------------------|
| ADR  | not applicable<br>Tunnelcode: |
| RID  | not applicable                |
| ADN  | not applicable                |
| IMDG | not applicable                |
| IATA | not applicable                |

The transport classifications in this section apply generally to packed and bulk goods alike. For containers with a net volume of no more than 5 L for liquid substances or a net mass of no more than 5 kg for solid substances per individual or inner package, the exemptions SP 375 (ADR), 197 (IATA), 969 (IMDG) may be applied, which can result in a deviation from the transport classification for packed goods.

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

VOC content 3 %  
(2010/75/EC)

**15.2. Chemical safety assessment**

A chemical safety assessment has not been carried out.

**SECTION 16: Other information**

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H341 Suspected of causing genetic defects.  
H351 Suspected of causing cancer.  
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.  
H411 Toxic to aquatic life with long lasting effects.  
H412 Harmful to aquatic life with long lasting effects.

**Further information:**

This Safety Data Sheet has been produced for sales from Henkel to parties purchasing from Henkel, is based on Regulation (EC) No 1907/2006 and provides information in accordance with applicable regulations of the European Union only. In that respect, no statement, warranty or representation of any kind is given as to compliance with any statutory laws or regulations of any other jurisdiction or territory other than the European Union. When exporting to territories other than the European Union, please consult with the respective Safety Data Sheet of the concerned territory to ensure compliance or liaise with Henkel's Product Safety and Regulatory Affairs Department (ua-productsafety.de@henkel.com) prior to export to other territories than the European Union.

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

**Relevant changes in this safety data sheet are indicated by vertical lines at the left margin in the body of this document. Corresponding text is displayed in a different color on shadowed fields.**