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



SDS No. : 153602
V006.0

3609 Chipbonder 10 EFD

Revision: 03.04.2018
printing date: 26.01.2021
Replaces version from: 25.10.2016

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

**1.1. Product identifier**
3609 Chipbonder 10 EFD

**Contains:**
Epichlorohyd.-bisphenol A resin MW<=700
Dipropylene glycol diglycidyl ether
Diethylenetriamine

**1.2. Relevant identified uses of the substance or mixture and uses advised against**
Intended use:
Epoxy 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 irritation | Category 2 |
| H315 Causes skin irritation. | |
| Serious eye irritation | Category 2 |
| H319 Causes serious eye irritation. | |
| Skin sensitizer | Category 1 |
| H317 May cause an allergic skin reaction. | |
| Chronic hazards to the aquatic environment | Category 2 |
| H411 Toxic to aquatic life with long lasting effects. | |

**2.2. Label elements**

**Label elements (CLP):**

| | |
|---|---|
| **Hazard pictogram:** |  |
| **Signal word:** | Warning |
| **Hazard statement:** | H319 Causes serious eye irritation.<br>H315 Causes skin irritation.<br>H317 May cause an allergic skin reaction.<br>H411 Toxic to aquatic life with long lasting effects. |
| **Precautionary statement: Prevention** | P273 Avoid release to the environment.<br>P280 Wear protective gloves. |
| **Precautionary statement: Response** | P337+P313 If eye irritation persists: Get medical advice/attention.<br>P302+P352 IF ON SKIN: Wash with plenty of soap and water.<br>P333+P313 If skin irritation or rash occurs: Get medical advice/attention. |

**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**

**General chemical description:**
Epoxy resin

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

| Hazardous components<br>CAS-No. | EC Number<br>REACH-Reg No. | content | Classification |
|---|---|---|---|
| Epichlorohyd.-bisphenol A resin<br>MW<=700<br>25068-38-6 | 500-033-5<br>500-033-5<br>01-2119456619-26 | 25- 50 % | Skin Irrit. 2<br>H315<br>Skin Sens. 1<br>H317<br>Eye Irrit. 2<br>H319<br>Aquatic Chronic 2<br>H411 |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine<br>90412-31-0 | 01-2120096580-52 | 20- 40 % | Acute Tox. 4; Oral<br>H302<br>Aquatic Chronic 2<br>H411 |
| Dipropylene glycol diglycidyl ether<br>41638-13-5 | | 25- 50 % | Skin Irrit. 2; Dermal<br>H315<br>Skin Sens. 1; Dermal<br>H317<br>Eye Irrit. 2<br>H319<br>Aquatic Chronic 3<br>H412 |
| Diethylenetriamine<br>111-40-0 | 203-865-4<br>01-2119473793-27<br>01-2119969287-21 | 1- < 3 % | Acute Tox. 4; Oral<br>H302<br>Acute Tox. 4; Dermal<br>H312<br>Skin Corr. 1B<br>H314<br>Skin Sens. 1<br>H317<br>Acute Tox. 2; Inhalation<br>H330<br>STOT SE 3<br>H335 |

**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**
EYE: Irritation, conjunctivitis.

SKIN: Redness, inflammation.

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:**
Carbon dioxide, foam, powder

**Extinguishing media which must not be used for safety reasons:**
None known

**5.2. Special hazards arising from the substance or mixture**
In the event of a fire, carbon monoxide (CO), carbon dioxide (CO2) and nitrogen oxides (NOx) can be released.

**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.
Wash spillage site thoroughly with soap and water or detergent solution.
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**
Use only in well-ventilated areas.
Avoid skin and eye contact.
Prolonged or repeated skin contact should be avoided to minimise any risk of sensitisation.
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**
Refer to Technical Data Sheet

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

## SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**

**Occupational Exposure Limits**

Valid for
Great Britain

| Ingredient [Regulated substance] | ppm | mg/m$^3$ | Value type | Short term exposure limit category / Remarks | Regulatory list |
|---|---|---|---|---|---|
| 2,2'-Iminodi(ethylamine)<br>111-40-0<br>[2,2'-IMINODI(ETHYLAMINE)] | | | Skin designation: | Can be absorbed through the skin. | EH40 WEL |
| 2,2'-Iminodi(ethylamine)<br>111-40-0<br>[2,2'-IMINODI(ETHYLAMINE)] | 1 | 4,3 | Time Weighted Average (TWA): | | EH40 WEL |

**Occupational Exposure Limits**

Valid for
Ireland

| Ingredient [Regulated substance] | ppm | mg/m$^3$ | Value type | Short term exposure limit category / Remarks | Regulatory list |
|---|---|---|---|---|---|
| 2,2'-Iminodi(ethylamine)<br>111-40-0<br>[DIETHYLENE TRIAMINE] | 1 | 4 | Time Weighted Average (TWA): | | IR_OEL |
| 2,2'-Iminodi(ethylamine)<br>111-40-0<br>[DIETHYLENE TRIAMINE] | | | Skin designation: | Can be absorbed through the skin. | IR_OEL |

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

| Name on list | Environmental Compartment | Exposure period | Value | | | | Remarks |
|---|---|---|---|---|---|---|---|
| | | | mg/l | ppm | mg/kg | others | |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6 | aqua (freshwater) | | 0,006 mg/l | | | | |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6 | aqua (marine water) | | 0,001 mg/l | | | | |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6 | sewage treatment plant (STP) | | 10 mg/l | | | | |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6 | sediment (freshwater) | | | | 0,996 mg/kg | | |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6 | sediment (marine water) | | | | 0,1 mg/kg | | |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6 | soil | | | | 0,196 mg/kg | | |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6 | oral | | | | 11 mg/kg | | |
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 25068-38-6 | aqua (intermittent releases) | | 0,018 mg/l | | | | |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine 90412-31-0 | aqua (freshwater) | | 0,0026 mg/l | | | | |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine 90412-31-0 | aqua (marine water) | | 0,00026 mg/l | | | | |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine 90412-31-0 | aqua (intermittent releases) | | 0,026 mg/l | | | | |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine 90412-31-0 | sewage treatment plant (STP) | | 10 mg/l | | | | |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine 90412-31-0 | sediment (freshwater) | | | | 0,014 mg/kg | | |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine 90412-31-0 | sediment (marine water) | | | | 0,0014 mg/kg | | |
| 2,2'-Iminodi(ethylamine) 111-40-0 | aqua (freshwater) | | 0,56 mg/l | | | | |
| 2,2'-Iminodi(ethylamine) 111-40-0 | aqua (marine water) | | 0,056 mg/l | | | | |
| 2,2'-Iminodi(ethylamine) 111-40-0 | aqua (intermittent releases) | | 0,32 mg/l | | | | |
| 2,2'-Iminodi(ethylamine) 111-40-0 | sediment (freshwater) | | | | 1072 mg/kg | | |
| 2,2'-Iminodi(ethylamine) 111-40-0 | sediment (marine water) | | | | 107,2 mg/kg | | |
| 2,2'-Iminodi(ethylamine) 111-40-0 | sewage treatment plant (STP) | | 6 mg/l | | | | |
| 2,2'-Iminodi(ethylamine) 111-40-0 | soil | | | | 7,97 mg/kg | | |
| 2,2'-Iminodi(ethylamine) 111-40-0 | Air | | | | | | |

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

| Name on list | Application Area | Route of Exposure | Health Effect | Exposure Time | Value | Remarks |
|---|---|---|---|---|---|---|
| Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 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) 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) 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) 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) 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) 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) 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) 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) 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) 25068-38-6 | General population | inhalation | Long term exposure - systemic effects | | 0,75 mg/m3 | |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine 90412-31-0 | Workers | inhalation | Long term exposure - systemic effects | | 11,7 mg/m3 | |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine 90412-31-0 | Workers | dermal | Long term exposure - systemic effects | | 33,3 mg/kg | |
| 2,2'-Iminodi(ethylamine) 111-40-0 | Workers | dermal | Long term exposure - systemic effects | | 11,4 mg/kg | |
| 2,2'-Iminodi(ethylamine) 111-40-0 | Workers | dermal | Long term exposure - local effects | | 1,1 mg/kg | |
| 2,2'-Iminodi(ethylamine) 111-40-0 | Workers | Inhalation | Acute/short term exposure - systemic effects | | 92,1 mg/m3 | |
| 2,2'-Iminodi(ethylamine) 111-40-0 | Workers | Inhalation | Acute/short term exposure - local effects | | 2,6 mg/m3 | |
| 2,2'-Iminodi(ethylamine) 111-40-0 | Workers | Inhalation | Long term exposure - systemic effects | | 15,4 mg/m3 | |
| 2,2'-Iminodi(ethylamine) 111-40-0 | Workers | Inhalation | Long term exposure - local effects | | 0,87 mg/m3 | |
| 2,2'-Iminodi(ethylamine) 111-40-0 | General population | dermal | Acute/short term exposure - local effects | | 4,88 mg/kg | |
| 2,2'-Iminodi(ethylamine) 111-40-0 | General population | Inhalation | Acute/short term exposure - systemic effects | | 27,5 mg/m3 | |
| 2,2'-Iminodi(ethylamine) | General | dermal | Long term | | 4,88 mg/kg | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 111-40-0 | population | | exposure - systemic effects | | | |
| 2,2'-Iminodi(ethylamine)<br>111-40-0 | General population | Inhalation | Long term exposure - systemic effects | | 4,6 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; >= 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; >= 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:
Wear protective glasses.
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 | gel<br>viscous<br>dark red |
| 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 | > 93 °C (> 199.4 °F) |
| Flash point | > 93 °C (> 199.4 °F); Tagliabue closed cup |
| Evaporation rate | No data available / Not applicable |

| | |
|---|---|
| Flammability | No data available / Not applicable |
| Explosive limits | No data available / Not applicable |
| Vapour pressure (20 °C (68 °F)) | 6,67 mbar |
| Relative vapour density: | No data available / Not applicable |
| Density () | 1,1 g/cm3 |
| Bulk density | No data available / Not applicable |
| Solubility | No data available / Not applicable |
| Solubility (qualitative) (Solvent: Water) | Not miscible |
| 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 | No data available / Not applicable |
| 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.
Protect from direct sunlight.

**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 CAS-No. | Value type | Value | Species | Method |
|---|---|---|---|---|
| Epichlorohyd.-bisphenol A resin MW<=700 25068-38-6 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 420 (Acute Oral Toxicity) |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine 90412-31-0 | LD50 | > 1.000 - < 3.000 mg/kg | rat | not specified |
| Dipropylene glycol diglycidyl ether 41638-13-5 | LD50 | > 2.000 mg/kg | rat | |
| Diethylenetriamine 111-40-0 | LD50 | 1.553 mg/kg | rat | not specified |

**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 type | Value | Species | Method |
|---|---|---|---|---|
| Epichlorohyd.-bisphenol A resin MW<=700<br>25068-38-6 | LD50 | > 2.000 mg/kg | rat | not specified |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine<br>90412-31-0 | LD50 | > 3.000 mg/kg | rabbit | OECD Guideline 402 (Acute Dermal Toxicity) |
| Dipropylene glycol diglycidyl ether<br>41638-13-5 | LD50 | > 2.000 mg/kg | rabbit | |
| Diethylenetriamine<br>111-40-0 | LD50 | 1.045 mg/kg | rabbit | not specified |

**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 type | Value | Test atmosphere | Exposure time | Species | Method |
|---|---|---|---|---|---|---|
| Diethylenetriamine<br>111-40-0 | NOEL | 0,07 mg/l | | | rat | OECD Guideline 403 (Acute Inhalation Toxicity) |
| Diethylenetriamine<br>111-40-0 | Acute toxicity estimate (ATE) | 0,07 mg/l | dust/mist | | | Expert judgement |

**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 time | Species | Method |
|---|---|---|---|---|
| Epichlorohyd.-bisphenol A resin MW<=700<br>25068-38-6 | moderately irritating | 24 h | rabbit | Draize Test |
| Diethylenetriamine<br>111-40-0 | corrosive | 15 min | rabbit | BASF 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 time | Species | Method |
|---|---|---|---|---|
| Epichlorohyd.-bisphenol A resin MW<=700<br>25068-38-6 | not irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| Diethylenetriamine<br>111-40-0 | corrosive | 30 s | rabbit | not specified |

**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 |
|---|---|---|---|---|
| Epichlorohyd.-bisphenol A resin MW<=700<br>25068-38-6 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| Diethylenetriamine<br>111-40-0 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |

**Germ cell mutagenicity:**

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

| Hazardous substances CAS-No. | Result | Type of study / Route of administration | Metabolic activation / Exposure time | Species | Method |
|---|---|---|---|---|---|
| Epichlorohyd.-bisphenol A resin MW<=700 25068-38-6 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 472 (Genetic Toxicology: Escherichia coli, Reverse Mutation Assay) |
| Diethylenetriamine 111-40-0 | positive | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Diethylenetriamine 111-40-0 | negative | in vitro mammalian chromosome aberration test | with and without | | Chromosome Aberration Test |
| Epichlorohyd.-bisphenol A resin MW<=700 25068-38-6 | negative | oral: gavage | | mouse | not specified |
| Diethylenetriamine 111-40-0 | negative | oral: gavage | | mouse | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| Diethylenetriamine 111-40-0 | negative | oral: gavage | | mouse | not specified |

**Carcinogenicity**

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

| Hazardous components CAS-No. | Result | Route of application | Exposure time / Frequency of treatment | Species | Sex | Method |
|---|---|---|---|---|---|---|
| Epichlorohyd.-bisphenol A resin MW<=700 25068-38-6 | not carcinogenic | dermal | 2 y daily | mouse | male | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |
| Epichlorohyd.-bisphenol A resin MW<=700 25068-38-6 | not carcinogenic | oral: gavage | 2 y daily | rat | male/female | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |
| Diethylenetriamine 111-40-0 | not carcinogenic | dermal | lifetime (appr. 587 d) 3 d/w | mouse | male | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |

**Reproductive toxicity:**

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

| Hazardous substances CAS-No. | Result / Value | Test type | Route of application | Species | Method |
|---|---|---|---|---|---|
| Epichlorohyd.-bisphenol A resin MW<=700 25068-38-6 | NOAEL P >= 50 mg/kg<br><br>NOAEL F1 >= 750 mg/kg<br><br>NOAEL F2 >= 750 mg/kg | Two generation study | oral: gavage | rat | OECD Guideline 416 (Two-Generation Reproduction Toxicity Study) |
| Diethylenetriamine 111-40-0 | NOAEL P 100 mg/kg<br><br>NOAEL F1 30 mg/kg | screening | oral: gavage | rat | OECD Guideline 421 (Reproduction / Developmental Toxicity Screening Test) |

**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.

| Hazardous substances<br>CAS-No. | Result / Value | Route of application | Exposure time / Frequency of treatment | Species | Method |
|---|---|---|---|---|---|
| Epichlorohyd.-bisphenol A resin MW<=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) |
| Diethylenetriamine<br>111-40-0 | NOAEL 70 - 80 mg/kg | oral: feed | 90 d<br>daily | rat | not specified |
| Diethylenetriamine<br>111-40-0 | NOAEL 0,55 mg/l | inhalation: vapour | 15 d<br>6 h/d | rat | not specified |

**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 type | Value | Exposure time | Species | Method |
|---|---|---|---|---|---|
| Epichlorohyd.-bisphenol A resin MW<=700<br>25068-38-6 | LC50 | 1,75 mg/l | 96 h | Oncorhynchus mykiss | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine<br>90412-31-0 | LC50 | 2,7 mg/l | 96 h | Oncorhynchus mykiss | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Dipropylene glycol diglycidyl ether<br>41638-13-5 | LC50 | 67 mg/l | | Leuciscus idus | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Diethylenetriamine<br>111-40-0 | LC50 | 430 mg/l | 96 h | Poecilia reticulata | EU Method C.1 (Acute Toxicity for Fish) |
| Diethylenetriamine<br>111-40-0 | NOEC | > 10 mg/l | 28 d | Gasterosteus aculeatus | OECD Guideline 210 (fish early lite stage 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 type | Value | Exposure time | Species | Method |
|---|---|---|---|---|---|
| Epichlorohyd.-bisphenol A resin MW<=700<br>25068-38-6 | EC50 | 1,7 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine<br>90412-31-0 | EC50 | > 100 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Dipropylene glycol diglycidyl ether<br>41638-13-5 | EC50 | 90 mg/l | | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Diethylenetriamine<br>111-40-0 | EC50 | 64,6 mg/l | 48 h | Daphnia magna | EU Method C.2 (Acute Toxicity for Daphnia) |

**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 type | Value | Exposure time | Species | Method |
|---|---|---|---|---|---|
| Epichlorohyd.-bisphenol A resin MW<=700<br>25068-38-6 | NOEC | 0,3 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| Diethylenetriamine<br>111-40-0 | NOEC | 5,6 mg/l | 21 d | Daphnia magna | EU Method C.20 (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 type | Value | Exposure time | Species | Method |
|---|---|---|---|---|---|
| Epichlorohyd.-bisphenol A resin MW<=700<br>25068-38-6 | EC50 | > 11 mg/l | 72 h | Scenedesmus capricornutum | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Epichlorohyd.-bisphenol A resin MW<=700<br>25068-38-6 | NOEC | 4,2 mg/l | 72 h | Scenedesmus capricornutum | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine<br>90412-31-0 | EC50 | 2,6 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine<br>90412-31-0 | NOEC | 1 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Diethylenetriamine<br>111-40-0 | EC50 | 1.164 mg/l | 72 h | Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Diethylenetriamine<br>111-40-0 | NOEC | 10 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 type | Value | Exposure time | Species | Method |
|---|---|---|---|---|---|
| Epichlorohyd.-bisphenol A resin MW<=700<br>25068-38-6 | IC50 | > 100 mg/l | 3 h | activated sludge, industrial | other guideline: |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine<br>90412-31-0 | EC50 | 1.000 mg/l | 3 h | activated sludge of a predominantly domestic sewage | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| Diethylenetriamine<br>111-40-0 | NOEC | 6 mg/l | 3 h | anaerobic bacteria | not specified |

**12.2. Persistence and degradability**

The product is not biodegradable.

| Hazardous substances<br>CAS-No. | Result | Test type | Degradability | Exposure time | Method |
|---|---|---|---|---|---|
| Epichlorohyd.-bisphenol A resin MW<=700<br>25068-38-6 | not readily biodegradable. | aerobic | 5 % | 28 d | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine<br>90412-31-0 | not readily biodegradable. | aerobic | 25 % | 28 d | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine<br>90412-31-0 | inherently biodegradable | aerobic | 91 % | 28 d | OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test) |
| Dipropylene glycol diglycidyl ether<br>41638-13-5 | | | 8 - 27 % | 28 d | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| Diethylenetriamine<br>111-40-0 | inherently biodegradable | aerobic | 83 % | 28 d | EU Method C.9 (Biodegradation: Zahn-Wellens Test) |
| Diethylenetriamine<br>111-40-0 | readily biodegradable | aerobic | 87 % | 21 d | OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test) |

**12.3. Bioaccumulative potential**

No data available.

| Hazardous substances<br>CAS-No. | Bioconcentration factor (BCF) | Exposure time | Temperature | Species | Method |
|---|---|---|---|---|---|
| Diethylenetriamine<br>111-40-0 | > 0,3 - < 6,3 | 42 d | | Cyprinus carpio | OECD Guideline 305 C (Bioaccumulation: Test for the Degree of Bioconcentration in Fish) |

**12.4. Mobility in soil**

Cured adhesives are immobile.

| Hazardous substances<br>CAS-No. | LogPow | Temperature | Method |
|---|---|---|---|
| Epichlorohyd.-bisphenol A resin MW<=700<br>25068-38-6 | 3,242 | 25 °C | EU Method A.8 (Partition Coefficient) |
| Diethylenetriamine<br>111-40-0 | -1,58 | 20 °C | QSAR (Quantitative Structure Activity Relationship) |

**12.5. Results of PBT and vPvB assessment**

| Hazardous substances<br>CAS-No. | PBT / vPvB |
|---|---|
| Epichlorohyd.-bisphenol A resin MW<=700<br>25068-38-6 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| 1,3-Isobenzofurandione, reaction products with diethylenetriamine<br>90412-31-0 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Dipropylene glycol diglycidyl ether<br>41638-13-5 | Not fulfilling PBT (persistent/bioaccummulative/toxic) criteria |
| Diethylenetriamine<br>111-40-0 | 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:
Dispose of in accordance with local and national regulations.
Collection and delivery to recycling enterprise or other registered elimination institution.

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.
Disposal must be made according to official regulations.

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. (Bisphenol-A Epichlorhydrin resin) |
| RID | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-A Epichlorhydrin resin) |
| ADN | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-A Epichlorhydrin resin) |
| IMDG | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bisphenol-A Epichlorhydrin resin) |
| IATA | Environmentally hazardous substance, liquid, n.o.s. (Bisphenol-A Epichlorhydrin resin) |

**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 < 3,00 %
(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:

H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H335 May cause respiratory irritation.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

**Further information:**

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.**