



Safety Data Sheet according to (EC) No 1907/2006 as amended

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BONDERITE L-MR 77-4 DR190 WENS

SDS No. : 665349
V006.0

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

1.1. Product identifier

BONDERITE L-MR 77-4 DR190 WENS

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

Intended use:

Water Soluble Cooling Lubricants for Metal Working

1.3. Details of the supplier of the safety data sheet

Henkel Ltd

Adhesives

Wood Lane End

HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 (1442) 278000

SDSinfo.Adhesive@henkel.com

For Safety Data Sheet updates please visit our website <https://mysds.henkel.com/index.html#/appSelection> or www.henkel-adhesives.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 damage

Category 1

H318 Causes serious eye damage.

Toxic to reproduction

Category 1B

H360FD May damage fertility. May damage the unborn child.

Chronic hazards to the aquatic environment

Category 3

H412 Harmful to aquatic life with long lasting effects.

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Contains

(C12-C13) Alkyl alcohols, phosphated, ethoxylated, monoethanolamine salt

boric acid

Boric acid compound with dicyclohexylamine (1:1)

Boric acid, compd. with 2-aminoethanol

Signal word:

Danger

Hazard statement:

H360FD May damage fertility. May damage the unborn child.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H412 Harmful to aquatic life with long lasting effects.

Supplemental information

Contains: 3-iodo-2-propynyl butylcarbamate May produce an allergic reaction.
Restricted to professional users.

**Precautionary statement:
Prevention**

P201 Obtain special instructions before use.

P280 Wear protective gloves/eye protection.

**Precautionary statement:
Response**

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P310 Immediately call a POISON CENTER or doctor.

2.3. Other hazards

None if used properly.

Following substances are present in a concentration \geq the concentration limit for depiction in Section 3 and fulfill the criteria for PBT/vPvB, or were identified as endocrine disruptor (ED):

This mixture does not contain any substances in a concentration \geq the concentration limit for depiction in Section 3 that are assessed to be a PBT, vPvB or ED.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

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

| Hazardous components CAS-No. EC Number REACH-Reg No. | Concentration | Classification | Specific Conc. Limits, M-factors and ATEs | Add. Information |
|---|---------------|--|---|------------------|
| 3,5,5-trimethylhexanoic acid, compound with 2-aminoethanol (1:1) 93894-11-2 299-706-1 | 10- 20 % | Aquatic Chronic 3, H412 | | |
| Fatty alcohol, C12-14, EO/PO 68439-51-0 | 5- < 10 % | Aquatic Chronic 3, H412 | | |
| Boric acid compound with dicyclohexylamine (1:1) 860382-11-2 | 5- < 10 % | Repr. 2, H361 | | |
| (C12-C13) Alkyl alcohols, phosphated, ethoxylated, monoethanolamine salt 71549-82-1 | 1- < 5 % | Skin Irrit. 2, H315 Eye Dam. 1, H318 | | |
| Boric acid, compd. with 2-aminoethanol 68425-67-2 270-367-1 | 1- < 5 % | Repr. 2, H361 | | |
| 2-aminoethanol 141-43-5 205-483-3 01-2119486455-28 | 1- < 3 % | Acute Tox. 4, Oral, H302 Acute Tox. 4, Dermal, H312 Skin Corr. 1B, H314 Eye Dam. 1, H318 Acute Tox. 4, Inhalation, H332 STOT SE 3, H335 Aquatic Chronic 3, H412 | STOT SE 3; H335; C >= 5 % ===== inhalation:ATE = 1,5 mg/l;dust/mist | EU OEL |
| Fatty alcohol, C12-18, ethoxylate BU ether 146340-16-1 | 0,1- < 1 % | Skin Irrit. 2, H315 Aquatic Acute 1, H400 Aquatic Chronic 3, H412 | M acute = 1 | |
| boric acid 10043-35-3 233-139-2 01-2119486683-25 | 0,1- < 1 % | Repr. 1B, H360FD | | SVHC |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 259-627-5 01-2120762115-60 | 0,1- < 1 % | Aquatic Chronic 1, H410 STOT RE 1, H372 Acute Tox. 3, Inhalation, H331 Skin Sens. 1, H317 Eye Dam. 1, H318 Aquatic Acute 1, H400 Acute Tox. 4, Oral, H302 STOT SE 3, H335 | M acute = 10 M chronic = 1 | |

If no ATE values are displayed, please refer to LD/LC50 values in Section 11.
For full text of the H - statements and other abbreviations see section 16 "Other information".

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Move to fresh air, consult doctor if complaint persists.

Skin contact:

IF ON SKIN: Wash with plenty of soap and water.

In case of adverse health effects seek medical advice.

Eye contact:

Immediately flush eyes with soft jet of water or eye rinse solution for at least 5 minutes. If pains remain (intensive smarting, sensitivity to light, visual disturbance) continue flushing and contact/seek doctor or hospital.

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: Redness, inflammation.

After eye contact: Corrosive, may cause permanent damage to eyes (impairment of vision).

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:

All common extinguishing agents are suitable.

Extinguishing media which must not be used for safety reasons:

None known

5.2. Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in fires.

5.3. Advice for firefighters

Wear protective equipment.

Wear self-contained breathing apparatus.

Additional information:

Cool endangered containers with water spray jet.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Dispose of contaminated material as waste according to Section 13.

Remove with liquid-absorbing material (sand, peat, sawdust).

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.

Ensure that workrooms are adequately ventilated.

See advice in section 8

Hygiene measures:

Wash hands before work breaks and after finishing work.

Do not eat, drink or smoke while working.

Take off contaminated clothing and wash before reuse.

The workplace should be equipped with an emergency shower and eye-rinsing facility.

7.2. Conditions for safe storage, including any incompatibilities

Store in sealed original container.

Store frost-free.

Keep away from heat and direct sunlight.

Temperatures between + 5 °C and + 40 °C

7.3. Specific end use(s)

Water Soluble Cooling Lubricants for Metal Working

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-Aminoethanol 141-43-5 [2-AMINOETHANOL] | | | Skin designation: | Can be absorbed through the skin. | EH40 WEL |
| 2-Aminoethanol 141-43-5 [2-AMINOETHANOL] | 1 | 2,5 | Time Weighted Average (TWA): | | EH40 WEL |
| 2-Aminoethanol 141-43-5 [2-AMINOETHANOL] | 3 | 7,6 | Short Term Exposure Limit (STEL): | Indicative | ECTLV |
| 2-Aminoethanol 141-43-5 [2-AMINOETHANOL] | 1 | 2,5 | Time Weighted Average (TWA): | Indicative | ECTLV |
| 2-Aminoethanol 141-43-5 [2-AMINOETHANOL] | 3 | 7,6 | Short Term Exposure Limit (STEL): | 15 minutes | 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 |
|--|-----|-------------------|-----------------------------------|--|-----------------|
| Distillates (petroleum), solvent-refined light paraffinic 64741-89-5 [MINERAL OIL PURE, HIGHLY & SEVERELY REFINED] | | 5 | Time Weighted Average (TWA): | | IR_OEL |
| Boric acid, compd. with 2-aminoethanol 68425-67-2 [BORATE COMPOUNDS INORGANIC] | | 2 | Time Weighted Average (TWA): | | IR_OEL |
| 2,2',2''-Nitrilotriethanol 102-71-6 [TRIETHANOLAMINE] | | 5 | Time Weighted Average (TWA): | | IR_OEL |
| 2-Aminoethanol 141-43-5 [2-AMINOETHANOL] | 1 | 2,5 | Time Weighted Average (TWA): | Indicative OELV | IR_OEL |
| 2-Aminoethanol 141-43-5 [2-AMINOETHANOL] | 3 | 7,6 | Short Term Exposure Limit (STEL): | Indicative | ECTLV |
| 2-Aminoethanol 141-43-5 [2-AMINOETHANOL] | 1 | 2,5 | Time Weighted Average (TWA): | Indicative | ECTLV |
| 2-Aminoethanol 141-43-5 [2-AMINOETHANOL] | | | Skin designation: | Can be absorbed through the skin. | IR_OEL |
| 2-Aminoethanol 141-43-5 [2-AMINOETHANOL] | 3 | 7,6 | Short Term Exposure Limit (STEL): | 15 minutes Indicative OELV | IR_OEL |
| Boric acid 10043-35-3 [BORIC ACID] | | 2 | Time Weighted Average (TWA): | | IR_OEL |

Predicted No-Effect Concentration (PNEC):

| Name on list | Environmental Compartment | Exposure period | Value | | | | Remarks |
|--|------------------------------------|--------------------|-------------------|-----|-----------------|--------|---------|
| | | | mg/l | ppm | mg/kg | others | |
| Boric acid, compd. with 2-aminoethanol 68425-67-2 | sewage treatment plant (STP) | | 10,000000 mg/l | | | | |
| Boric acid, compd. with 2-aminoethanol 68425-67-2 | aqua (intermittent releases) | | 0,26 mg/l | | | | |
| Boric acid, compd. with 2-aminoethanol 68425-67-2 | sediment (freshwater) | | | | 0,054 mg/kg | | |
| Boric acid, compd. with 2-aminoethanol 68425-67-2 | sediment (marine water) | | | | 0,0054 mg/kg | | |
| Boric acid, compd. with 2-aminoethanol 68425-67-2 | Soil | | | | 0,014 mg/kg | | |
| Boric acid, compd. with 2-aminoethanol 68425-67-2 | oral | | | | 66,7 mg/kg | | |
| Boric acid, compd. with 2-aminoethanol 68425-67-2 | aqua (freshwater) | | 0,026 mg/l | | | | |
| Boric acid, compd. with 2-aminoethanol 68425-67-2 | aqua (marine water) | | 0,0026 mg/l | | | | |
| 2-Aminoethanol 141-43-5 | aqua (freshwater) | | 0,07 mg/l | | | | |
| 2-Aminoethanol 141-43-5 | aqua (marine water) | | 0,007 mg/l | | | | |
| 2-Aminoethanol 141-43-5 | aqua (intermittent releases) | | 0,028 mg/l | | | | |
| 2-Aminoethanol 141-43-5 | sediment (freshwater) | | | | 0,357 mg/kg | | |
| 2-Aminoethanol 141-43-5 | sediment (marine water) | | | | 0,036 mg/kg | | |
| 2-Aminoethanol 141-43-5 | Soil | | | | 1,29 mg/kg | | |
| 2-Aminoethanol 141-43-5 | sewage treatment plant (STP) | | 100 mg/l | | | | |
| boric acid 10043-35-3 | aqua (freshwater) | | 2,9 mg/l | | | | |
| boric acid 10043-35-3 | aqua (marine water) | | 2,9 mg/l | | | | |
| boric acid 10043-35-3 | Freshwater - intermittent | | 13,7 mg/l | | | | |
| boric acid 10043-35-3 | sewage treatment plant (STP) | | 10 mg/l | | | | |
| boric acid 10043-35-3 | Soil | | | | 5,7 mg/kg | | |
| 3-Iodo-2-propynyl butylcarbamate 55406-53-6 | aqua (freshwater) | | 0,001 mg/l | | | | |
| 3-Iodo-2-propynyl butylcarbamate 55406-53-6 | aqua (marine water) | | 0 mg/l | | | | |
| 3-Iodo-2-propynyl butylcarbamate 55406-53-6 | sewage treatment plant (STP) | | 0,44 mg/l | | | | |
| 3-Iodo-2-propynyl butylcarbamate 55406-53-6 | sediment (freshwater) | | | | 0,017 mg/kg | | |
| 3-Iodo-2-propynyl butylcarbamate 55406-53-6 | sediment (marine water) | | | | 0,002 mg/kg | | |
| 3-Iodo-2-propynyl butylcarbamate 55406-53-6 | Soil | | | | 0,005 mg/kg | | |

Derived No-Effect Level (DNEL):

| Name on list | Application Area | Route of Exposure | Health Effect | Exposure Time | Value | Remarks |
|---|--------------------|-------------------|--|---------------|-------------------------|---------|
| Boric acid, compd. with 2-aminoethanol 68425-67-2 | Workers | dermal | Long term exposure - systemic effects | | 3,3 mg/kg | |
| Boric acid, compd. with 2-aminoethanol 68425-67-2 | Workers | Inhalation | Long term exposure - systemic effects | | 5,9 mg/m ³ | |
| Boric acid, compd. with 2-aminoethanol 68425-67-2 | General population | dermal | Long term exposure - systemic effects | | 1,7 mg/kg | |
| Boric acid, compd. with 2-aminoethanol 68425-67-2 | Workers | Inhalation | Long term exposure - systemic effects | | 1,4 mg/m ³ | |
| Boric acid, compd. with 2-aminoethanol 68425-67-2 | General population | oral | Long term exposure - systemic effects | | 1,7 mg/kg | |
| 2-Aminoethanol 141-43-5 | Workers | inhalation | Long term exposure - systemic effects | | 1 mg/m ³ | |
| 2-Aminoethanol 141-43-5 | Workers | inhalation | Long term exposure - local effects | | 0,51 mg/m ³ | |
| 2-Aminoethanol 141-43-5 | Workers | dermal | Long term exposure - systemic effects | | 3 mg/kg | |
| 2-Aminoethanol 141-43-5 | General population | dermal | Long term exposure - systemic effects | | 1,5 mg/kg | |
| 2-Aminoethanol 141-43-5 | General population | oral | Long term exposure - systemic effects | | 1,5 mg/kg | |
| 2-Aminoethanol 141-43-5 | General population | inhalation | Long term exposure - systemic effects | | 0,18 mg/m ³ | |
| 2-Aminoethanol 141-43-5 | General population | inhalation | Long term exposure - local effects | | 0,28 mg/m ³ | |
| boric acid 10043-35-3 | Workers | inhalation | Long term exposure - systemic effects | | 8,3 mg/m ³ | |
| boric acid 10043-35-3 | Workers | dermal | Long term exposure - systemic effects | | 392 mg/kg | |
| boric acid 10043-35-3 | General population | inhalation | Long term exposure - systemic effects | | 4,15 mg/m ³ | |
| boric acid 10043-35-3 | General population | dermal | Long term exposure - systemic effects | | 196 mg/kg | |
| boric acid 10043-35-3 | General population | oral | Long term exposure - systemic effects | | 0,98 mg/kg | |
| boric acid 10043-35-3 | General population | oral | Acute/short term exposure - systemic effects | | 0,98 mg/kg | |
| 3-Iodo-2-propynyl butylcarbamate 55406-53-6 | Workers | inhalation | Long term exposure - systemic effects | | 0,023 mg/m ³ | |
| 3-Iodo-2-propynyl butylcarbamate 55406-53-6 | Workers | inhalation | Acute/short term exposure - systemic effects | | 0,07 mg/m ³ | |
| 3-Iodo-2-propynyl butylcarbamate 55406-53-6 | Workers | inhalation | Long term exposure - local effects | | 1,16 mg/m ³ | |
| 3-Iodo-2-propynyl butylcarbamate 55406-53-6 | Workers | dermal | Long term exposure - systemic effects | | 2 mg/kg | |
| 3-Iodo-2-propynyl butylcarbamate 55406-53-6 | Workers | inhalation | Acute/short term exposure - local | | 1,16 mg/m ³ | |

| | | | | | | |
|--|---------|--------|---|--|--|--|
| | | | effects | | | |
| 3-Iodo-2-propynyl butylcarbamate 55406-53-6 | Workers | dermal | Long term exposure - local effects | | | |
| 3-Iodo-2-propynyl butylcarbamate 55406-53-6 | Workers | dermal | Acute/short term exposure - local effects | | | |

Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/suction at the workplace.

Respiratory protection:

In case of aerosol formation, we recommend wearing of appropriate respiratory protection equipment with ABEK P2 filter (EN 14387).

This recommendation should be matched to local conditions.

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): Polychloroprene (CR; >= 1 mm thickness) or natural rubber (NR; >=1 mm thickness) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Polychloroprene (CR; >= 1 mm thickness) or natural rubber (NR; >=1 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:

Goggles which can be tightly sealed.

Protective eye equipment should conform to EN166.

Skin protection:

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

| | |
|---------------------------------------|---|
| Delivery form | liquid |
| Colour | yellowish |
| Odor | amine-like |
| Physical state | liquid |
| Melting point | Not applicable, Product is a liquid |
| Solidification temperature | < 5 °C (< 41 °F) |
| Initial boiling point | 100 °C (212 °F) |
| Flammability | The product is not flammable. |
| Explosive limits | Not applicable, The product is not flammable. |
| Flash point | > 100 °C (> 212 °F) |
| Auto-ignition temperature | Not applicable, The product is not flammable. |
| Decomposition temperature | Not applicable, Substance/mixture is not self-reactive, no organic peroxide and does not decompose under foreseen conditions of use |
| pH | 9,8 PH-value, potentiometer |
| (20 °C (68 °F); Conc.: 100 % product) | |
| Viscosity (kinematic) | 206 mm ² /s ;. Viscosity and density by Stabinger Viscosimeter |
| (20 °C (68 °F);) | |

| | |
|---|---|
| Solubility (qualitative) (20 °C (68 °F); Solvent: Water) | emulsifiable |
| Partition coefficient: n-octanol/water | Not applicable |
| Vapour pressure (20 °C (68 °F)) | Mixture < 0,1 mbar |
| Density (20 °C (68 °F)) | 0,954 g/cm ³ Viscosity and density by Stabinger Viscosimeter |
| Relative vapour density: (20 °C) | < 1 |
| Particle characteristics | Not applicable Product is a liquid |

9.2. Other information

Other information not applicable for this product

SECTION 10: Stability and reactivity

10.1. Reactivity

Reaction with strong acids.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

No decomposition if used according to specifications.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

None if used for intended purpose.

In case of fire toxic gases can be released.

SECTION 11: Toxicological information

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

Acute oral toxicity:

| Hazardous substances CAS-No. | Value type | Value | Species | Method |
|--|---------------|---------------|---------|---|
| Fatty alcohol, C12-14, EO/PO 68439-51-0 | LD50 | > 2.000 mg/kg | rat | EU Method B.1 (Acute Toxicity (Oral)) |
| 2-aminoethanol 141-43-5 | LD50 | 1.089 mg/kg | rat | equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity) |
| Fatty alcohol, C12-18, ethoxylate BU ether 146340-16-1 | LD50 | > 2.000 mg/kg | rat | OECD Guideline 401 (Acute Oral Toxicity) |
| boric acid 10043-35-3 | LD50 | 3.450 mg/kg | rat | not specified |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | LD50 | 1.470 mg/kg | rat | OECD Guideline 401 (Acute Oral Toxicity) |

Acute dermal toxicity:

| Hazardous substances CAS-No. | Value type | Value | Species | Method |
|---|---------------|---------------|---------|--|
| Fatty alcohol, C12-14, EO/PO 68439-51-0 | LD50 | > 5.000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| 2-aminoethanol 141-43-5 | LD50 | 1.025 mg/kg | rabbit | not specified |
| boric acid 10043-35-3 | LD50 | > 2.000 mg/kg | rabbit | not specified |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | LD50 | > 2.000 mg/kg | rabbit | EPA OPP 81-2 (Acute Dermal Toxicity) |

Acute inhalative toxicity:

| Hazardous substances CAS-No. | Value type | Value | Test atmosphere | Exposure time | Species | Method |
|---|--|------------|-----------------|------------------|---------|---|
| 2-aminoethanol 141-43-5 | Acute toxicity estimate (ATE) | 1,5 mg/l | dust/mist | | | Expert judgement |
| 2-aminoethanol 141-43-5 | LC50 | 1 - 5 mg/l | | 4 h | rat | not specified |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | LC50 | 0,68 mg/l | dust/mist | 4 h | rat | equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity) |

Skin corrosion/irritation:

| Hazardous substances CAS-No. | Result | Exposure time | Species | Method |
|---|--------------------------|------------------|---------|--|
| Fatty alcohol, C12-14, EO/PO 68439-51-0 | slightly irritating | 4 h | rabbit | EU Method B.4 (Acute Toxicity: Dermal Irritation / Corrosion) |
| Fatty alcohol, C12-14, EO/PO 68439-51-0 | moderately irritating | 4 h | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| 2-aminoethanol 141-43-5 | corrosive | 4 h | rabbit | equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| boric acid 10043-35-3 | not irritating | | rabbit | not specified |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | slightly irritating | 4 h | rabbit | EPA OPP 81-5 (Acute Dermal Irritation) |

Serious eye damage/irritation:

| Hazardous substances CAS-No. | Result | Exposure time | Species | Method |
|---|---|------------------|---------|---|
| Fatty alcohol, C12-14, EO/PO 68439-51-0 | slightly irritating | 24 h | rabbit | EU Method B.5 (Acute Toxicity: Eye Irritation / Corrosion) |
| Fatty alcohol, C12-14, EO/PO 68439-51-0 | slightly irritating | 24 h | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| Boric acid, compd. with 2-aminoethanol 68425-67-2 | not irritating | | rabbit | EPA OPPTS 870.2400 (Acute Eye Irritation) |
| 2-aminoethanol 141-43-5 | corrosive | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| boric acid 10043-35-3 | not irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | Category 1 (irreversible effects on the eye) | | rabbit | EPA OPP 81-4 (Acute Eye Irritation) |

Respiratory or skin sensitization:

| Hazardous substances CAS-No. | Result | Test type | Species | Method |
|---|-----------------|---------------------------------|------------|---|
| Fatty alcohol, C12-14, EO/PO 68439-51-0 | not sensitising | Guinea pig maximisation test | guinea pig | EU Method B.6 (Skin Sensitisation) |
| Fatty alcohol, C12-14, EO/PO 68439-51-0 | not sensitising | Guinea pig maximisation test | guinea pig | Magnusson and Kligman Method |
| 2-aminoethanol 141-43-5 | not sensitising | Guinea pig maximisation test | guinea pig | not specified |
| boric acid 10043-35-3 | not sensitising | Buehler test | guinea pig | OECD Guideline 406 (Skin Sensitisation) |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | sensitising | Guinea pig maximisation test | guinea pig | OECD Guideline 406 (Skin Sensitisation) |

Germ cell mutagenicity:

| Hazardous substances CAS-No. | Result | Type of study / Route of administration | Metabolic activation / Exposure time | Species | Method |
|---|----------|--|--|---------|--|
| Fatty alcohol, C12-14, EO/PO 68439-51-0 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| 2-aminoethanol 141-43-5 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| 2-aminoethanol 141-43-5 | negative | in vitro mammalian chromosome aberration test | without | | equivalent or similar to OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) |
| 2-aminoethanol 141-43-5 | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| boric acid 10043-35-3 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| boric acid 10043-35-3 | negative | sister chromatid exchange assay in mammalian cells | with and without | | not specified |
| boric acid 10043-35-3 | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | EPA OPP 84-2 (Mutagenicity Testing) |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| 2-aminoethanol 141-43-5 | negative | oral: gavage | | mouse | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| boric acid 10043-35-3 | negative | oral: gavage | | mouse | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | negative | oral: gavage | | mouse | equivalent or similar to OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |

Carcinogenicity

| Hazardous components CAS-No. | Result | Route of application | Exposure time / Frequency of treatment | Species | Sex | Method |
|--|------------------|----------------------|--|---------|-------------|--|
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | not carcinogenic | oral: unspecified | 104 w daily | rat | male/female | equivalent or similar OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |

Reproductive toxicity:

| Hazardous substances CAS-No. | Result / Value | Test type | Route of application | Species | Method |
|--|---|------------------------|----------------------|---------|--|
| 2-aminoethanol 141-43-5 | NOAEL P 300 mg/kg NOAEL F1 1.000 mg/kg NOAEL F2 1.000 mg/kg | Two generation study | oral: feed | rat | OECD Guideline 416 (Two-Generation Reproduction Toxicity Study) |
| boric acid 10043-35-3 | NOAEL P 100 mg/kg NOAEL F1 100 mg/kg NOAEL F2 100 mg/kg | three-generation study | oral: feed | rat | not specified |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | NOAEL P 300 ppm NOAEL F1 > 750 ppm NOAEL F2 > 750 ppm | two-generation study | oral: gavage | rat | equivalent or similar to OECD Guideline 416 (Two-Generation Reproduction Toxicity Study) |

STOT-single exposure:

No data available.

STOT-repeated exposure:

| Hazardous substances CAS-No. | Result / Value | Route of application | Exposure time / Frequency of treatment | Species | Method |
|--|--------------------|----------------------|--|---------|---|
| 2-aminoethanol 141-43-5 | NOAEL 300 mg/kg | oral: feed | > 75 d daily | rat | other guideline: |
| boric acid 10043-35-3 | NOAEL 100 mg/kg | oral: feed | 2 y daily | rat | not specified |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | NOAEL 0,00116 mg/l | inhalation: dust | 90 d 6 h/d, 5 d/w | rat | equivalent or similar to OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day) |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | NOAEL 20 mg/kg | oral: feed | 104 w daily | rat | equivalent or similar to OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | NOAEL 200 mg/kg | dermal | 91 d 6 h/d, 5 d/w | rat | OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study) |

Aspiration hazard:

No data available.

11.2 Information on other hazards

not applicable

SECTION 12: Ecological information**General ecological information:**

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

12.1. Toxicity**Toxicity (Fish):**

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|--|---------------|----------------|---------------|--|--|
| 3,5,5-trimethylhexanoic acid, compound with 2- aminoethanol (1:1) 93894-11-2 | LC50 | > 100 mg/l | 96 h | not specified | Weight of evidence |
| Fatty alcohol, C12-14, EO/PO 68439-51-0 | LC50 | > 1 - 10 mg/l | 96 h | Brachydanio rerio (new name: Danio rerio) | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| (C12-C13) Alkyl alcohols, phosphated, ethoxylated, monoethanolamine salt 71549-82-1 | LC50 | > 1 - 10 mg/l | 96 h | not specified | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| 2-aminoethanol 141-43-5 | LC50 | 349 mg/l | 96 h | Cyprinus carpio | EU Method C.1 (Acute Toxicity for Fish) |
| 2-aminoethanol 141-43-5 | NOEC | 1,24 mg/l | 41 d | Oryzias latipes | OECD Guideline 210 (fish early life stage toxicity test) |
| Fatty alcohol, C12-18, ethoxylate BU ether 146340-16-1 | LC50 | > 0,1 - 1 mg/l | 96 h | Brachydanio rerio (new name: Danio rerio) | ISO 7346-1 (Determination of the Acute Lethal Toxicity of Substances to a Freshwater Fish [Brachydanio rerio Hamilton-Buchanan (Teleostei, Cyprinidae)]) |
| boric acid 10043-35-3 | LC50 | 455 mg/l | 96 h | Pimephales promelas | other guideline: |
| boric acid 10043-35-3 | NOEC | 36,6 mg/l | 34 d | Danio rerio (reported as Brachydanio rerio) | OECD Guideline 210 (fish early life stage toxicity test) |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | LC50 | 0,067 mg/l | 96 h | Oncorhynchus mykiss | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | NOEC | 0,0084 mg/l | 35 d | Pimephales promelas | OECD Guideline 210 (fish early life stage toxicity test) |

Toxicity (aquatic invertebrates):

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---------------|-----------------|---------------|--------------------|--|
| 3,5,5-trimethylhexanoic acid, compound with 2- aminoethanol (1:1) 93894-11-2 | EC50 | > 10 - 100 mg/l | 48 h | not specified | Weight of evidence |
| Fatty alcohol, C12-14, EO/PO 68439-51-0 | EC50 | > 10 - 100 mg/l | 24 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| 2-aminoethanol 141-43-5 | EC50 | 27,04 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| boric acid 10043-35-3 | EC50 | 520 mg/l | 48 h | Ceriodaphnia dubia | other guideline: |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | EC50 | 0,65 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |

Chronic toxicity (aquatic invertebrates):

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|--|---------------|----------------|---------------|---------------|---|
| 2-aminoethanol 141-43-5 | NOEC | 0,85 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| Fatty alcohol, C12-18, ethoxylate BU ether 146340-16-1 | NOEC | > 0,1 - 1 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| boric acid 10043-35-3 | NOEC | 61,6 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | NOEC | 0,05 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |

Toxicity (Algae):

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|---|---------------|----------------|---------------|--|--|
| 3,5,5-trimethylhexanoic acid, compound with 2- aminoethanol (1:1) 93894-11-2 | EC50 | > 1 - 10 mg/l | 72 h | not specified | Weight of evidence |
| Fatty alcohol, C12-14, EO/PO 68439-51-0 | EC10 | > 0,1 - 1 mg/l | 72 h | not specified | ISO 8692 (Water Quality) |
| 2-aminoethanol 141-43-5 | EC50 | 2,8 mg/l | 72 h | Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 2-aminoethanol 141-43-5 | EC10 | 0,7 mg/l | 72 h | Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| boric acid 10043-35-3 | EC50 | 299,6 mg/l | 72 h | Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| boric acid 10043-35-3 | EC10 | 200,12 mg/l | 72 h | Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | EC50 | 0,053 mg/l | 72 h | Desmodesmus subspicatus | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | EC10 | 0,013 mg/l | 72 h | Desmodesmus subspicatus | OECD Guideline 201 (Alga, Growth Inhibition Test) |

Toxicity (microorganisms):

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Value type | Value | Exposure time | Species | Method |
|--|---------------|--------------|---------------|----------------------------|--|
| Fatty alcohol, C12-14, EO/PO 68439-51-0 | EC0 | > 100 mg/l | 3 h | activated sludge | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| 2-aminoethanol 141-43-5 | EC10 | > 1.000 mg/l | 3 h | activated sludge, domestic | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| boric acid 10043-35-3 | EC0 | 20 mg/l | 16 h | Pseudomonas putida | DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm- Test) |

12.2. Persistence and degradability

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Result | Test type | Degradability | Exposure time | Method |
|--|----------------------------|-----------|---------------|------------------|---|
| 3,5,5-trimethylhexanoic acid, compound with 2- aminoethanol (1:1) 93894-11-2 | readily biodegradable | | > 60 % | 28 d | Weight of evidence |
| Fatty alcohol, C12-14, EO/PO 68439-51-0 | readily biodegradable | aerobic | > 60 % | 28 d | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |
| (C12-C13) Alkyl alcohols, phosphated, ethoxylated, monoethanolamine salt 71549-82-1 | readily biodegradable | aerobic | > 60 % | 28 d | OECD 301 A - F |
| 2-aminoethanol 141-43-5 | readily biodegradable | aerobic | > 80 % | 19 d | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | not readily biodegradable. | aerobic | 25 % | 28 d | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |

12.3. Bioaccumulative potential

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | Bioconcentratio n factor (BCF) | Exposure time | Temperature | Species | Method |
|---|-----------------------------------|---------------|-------------|------------------------------|---------------|
| boric acid 10043-35-3 | < 0,1 | 90 d | 12 °C | Oncorhynchus tschawytscha | not specified |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | 3,3 - 4,5 | | | Carassius sp. | not specified |

12.4. Mobility in soil

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | LogPow | Temperature | Method |
|---|--------|-------------|---|
| 3,5,5-trimethylhexanoic acid, compound with 2- aminoethanol (1:1) 93894-11-2 | 0,04 | | QSAR (Quantitative Structure Activity Relationship) |
| 2-aminoethanol 141-43-5 | -1,91 | 25 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| boric acid 10043-35-3 | -1,09 | 22 °C | EU Method A.8 (Partition Coefficient) |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | 2,81 | | not specified |

12.5. Results of PBT and vPvB assessment

The table below presents the data of the classified substances present in the mixture.

| Hazardous substances CAS-No. | PBT / vPvB |
|---|--|
| Fatty alcohol, C12-14, EO/PO 68439-51-0 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Boric acid, compd. with 2-aminoethanol 68425-67-2 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| 2-aminoethanol 141-43-5 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| Fatty alcohol, C12-18, ethoxylate BU ether 146340-16-1 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |
| boric acid 10043-35-3 | According to Annex XIII to Regulation (EC) No 1907/2006, a PBT and vPvB assessment shall not be conducted for inorganic substances. |
| 3-iodo-2-propynyl butylcarbamate 55406-53-6 | Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria. |

12.6. Endocrine disrupting properties

not applicable

12.7. Other adverse effects

If acidic or alkaline products are discharged into wastewater installations care must be taken that the discharged wastewater has a pH in the range pH 6 - 10, as pH variations could cause disorders in wastewater channels and biological sewage treatment plants. The local discharge regulations take precedence.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

In consultation with the responsible local authority, must be subjected to special treatment.

Waste code

120109

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 or ID number**
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.2. UN proper shipping name**
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.3. Transport hazard class(es)**
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.4. Packing group**
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.5. Environmental hazards**
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.6. Special precautions for user**
Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.
- 14.7. Maritime transport in bulk according to IMO instruments**
not applicable

SECTION 15: Regulatory information

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

| | |
|---|----------------|
| Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009): | Not applicable |
| Prior Informed Consent (PIC) (Regulation (EU) No 649/2012): | Not applicable |
| Persistent organic pollutants (Regulation (EU) 2019/1021): | Not applicable |
| VOC content (2010/75/EU) | 2,0 % |

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

National regulations/information (Great Britain):

| | |
|---------|--|
| Remarks | Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, e.g COSHH Essentials. EH40 Occupational Exposure Limits Chemicals (Hazard Information & Packaging for Supply) Regulations. The Personnel Protective Equipment at Work Regulations. The Carriage of Dangerous Goods by Road Regulations. The Health & Safety at Work Act 1974. (Note: Use latest editions/amendments of above referenced documents.) |
|---------|--|

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.
H318 Causes serious eye damage.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H360FD May damage fertility. May damage the unborn child.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

| | |
|-------------|---|
| ED: | Substance identified as having endocrine disrupting properties |
| EU OEL: | Substance with a Union workplace exposure limit |
| EU EXPLD 1: | Substance listed in Annex I, Reg (EC) No. 2019/1148 |
| EU EXPLD 2 | Substance listed in Annex II, Reg (EC) No. 2019/1148 |
| SVHC: | Substance of very high concern (REACH Candidate List) |
| PBT: | Substance fulfilling persistent, bioaccumulative and toxic criteria |
| PBT/vPvB: | Substance fulfilling persistent, bioaccumulative and toxic plus very persistent and very bioaccumulative criteria |
| vPvB: | Substance fulfilling very persistent and very bioaccumulative criteria |

Further information:

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