

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 18.04.2024

Version number 76 (replaces version 75)

Revision: 18.04.2024

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

· **1.1 Product identifier**

· **Product name: Chloride**

· **Catalog number:** 00515131, 515130BT, 4515130BT, 515131BT, 4515131BT, 00515139BT, 502461, 00512461, 00502461

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

· **Application of the substance / the preparation:** Reagent for water analysis

· **1.3 Details of the supplier of the safety data sheet**

· **Supplier:**

Tintometer GmbH
Schleefstraße 8-12
44287 Dortmund
Made in Germany
www.lovibond.com

phone: +49 (0)231 94510-0
e-mail: sales@lovibond.com

The Tintometer Limited
Lovibond® House
Sun Rise Way
Amesbury
Wiltshire SP4 7GR
United Kingdom

phone : +44 1980 664800
e-mail: SDS@lovibond.uk

· **Informing department:**

e-mail: sds@lovibond.com
Product Safety Department

· **1.4 Emergency telephone number:**

+44 1235 239670
Languages: English

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

Muta. 1B H340 May cause genetic defects.
Carc. 1B H350 May cause cancer.
Repr. 1B H360FD May damage fertility. May damage the unborn child.



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.
Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

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GHS07

Skin Irrit. 2 H315 Causes skin irritation.
 Skin Sens. 1 H317 May cause an allergic skin reaction.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the GB CLP regulation.

Hazard pictograms



GHS05



GHS07



GHS08



GHS09

· **Signal word** Danger

Hazard-determining components of labelling:

boric acid
 potassium chromate
 silver nitrate
 potassium dichromate

Hazard statements

H315 Causes skin irritation.
 H318 Causes serious eye damage.
 H317 May cause an allergic skin reaction.
 H340 May cause genetic defects.
 H350 May cause cancer.
 H360FD May damage fertility. May damage the unborn child.
 H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection.
 P201 Obtain special instructions before use.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P302+P352 IF ON SKIN: Wash with plenty of water.
 P308+P311 IF exposed or concerned: Call a POISON CENTER/doctor.
 P405 Store locked up.

Additional information:

Restricted to professional users.

· **2.3 Other hazards** No further relevant information available.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

Determination of endocrine-disrupting properties

The product does not contain substances with endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

· **Description:** Mixture of organic and inorganic compounds

Dangerous components:

The percent content of the chromium compound mentioned below refers to the amount of chromate ions dissolved in water.

| | | |
|--|--|---------|
| CAS: 10043-35-3 EINECS: 233-139-2 Index No: 005-007-00-2 Reg.nr.: 01-2119486683-25-XXXX | boric acid ⚠ Repr. 1B, H360FD | 50–60% |
| CAS: 7789-00-6 EINECS: 232-140-5 Index No: 024-006-00-8 | potassium chromate ⚠ Muta. 1B, H340; Carc. 1B, H350i; ⚠ Aquatic Acute 1, H400 (M=10); Aquatic Chronic 1, H410 (M=10); ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335 Specific concentration limit: Skin Sens. 1; H317: C ≥ 0.5 % | 10–<20% |

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| | | |
|---|---|----------|
| CAS: 7761-88-8 EINECS: 231-853-9 Index No: 047-001-00-2 Reg.nr.: 01-2119513705-43-XXXX | silver nitrate ⚠ Ox. Sol. 2, H272; ⚠ Skin Corr. 1B, H314; ⚠ Aquatic Acute 1, H400 (M=1000); Aquatic Chronic 1, H410 (M=100); ⚠ Acute Tox. 4, H302 | 2.5--<5% |
| CAS: 7778-50-9 EINECS: 231-906-6 Index No: 024-002-00-6 Reg.nr.: 01-2119454792-32-XXXX | potassium dichromate ⚠ Ox. Sol. 2, H272; ⚠ Acute Tox. 3, H301; Acute Tox. 2, H330; ⚠ Resp. Sens. 1, H334; Muta. 1B, H340; Carc. 1B, H350; Repr. 1B, H360FD; STOT RE 1, H372; ⚠ Skin Corr. 1B, H314; ⚠ Aquatic Acute 1, H400 (M=1); Aquatic Chronic 1, H410 (M=1); ⚠ Acute Tox. 4, H312; Skin Sens. 1, H317 Specific concentration limit: STOT SE 3; H335: C ≥ 5 % | 0.3--<1% |

· SVHC

| | |
|-----------------|----------------------|
| CAS: 10043-35-3 | boric acid |
| CAS: 7789-00-6 | potassium chromate |
| CAS: 7778-50-9 | potassium dichromate |

· SVHC (UK)

| | |
|-----------------|----------------------|
| CAS: 10043-35-3 | boric acid |
| CAS: 7789-00-6 | potassium chromate |
| CAS: 7778-50-9 | potassium dichromate |

· **Additional information** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· 4.1 Description of first aid measures**· General information**

Personal protection for the First Aider!
Instantly remove any clothing soiled by the product.

· After inhalation

Supply fresh air or oxygen.
Call a doctor immediately.

· After skin contact

In case of persistent symptoms consult doctor.
Clean contaminated small wounds very thoroughly immediately.
Seek medical treatment.

· After eye contact

Rinse opened eye for several minutes (at least 15 min) under running water.
Call a doctor immediately.

· After swallowing

Rinse out mouth and then drink 1-2 glasses of water.
Do not induce vomiting; instantly call for medical help.

· 4.2 Most important symptoms and effects, both acute and delayed:

burns
absorption
allergic reactions
after inhalation:
mucosal irritations, cough, shortness of breath
Irritation and corrosion
after swallowing:
sickness
vomiting
diarrhoea
cramps
cardiovascular disorders
dizziness
after absorption of large amounts:
fatigue
CNS disorders
ataxia (impaired locomotor coordination)
drop in temperature
methaemoglobinaemia
unconsciousness

· Danger

risk of airways sensitization

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risk of skin sensitization
 Danger of system failure.
 Risk of corneal clouding.

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

If swallowed or in case of vomiting, danger of entering the lungs
 Subsequent observation for pneumonia and pulmonary oedema

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**

· **Suitable extinguishing agents** Use fire fighting measures that suit the environment.

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

The product is not combustible.
 Formation of toxic gases is possible during heating or in case of fire.
 Can be released in case of fire:

Nitrogen oxides (NO_x)
 chromium trioxide
 Dipotassium oxide
 Carbon monoxide (CO) and carbon dioxide (CO₂)

· **5.3 Advice for firefighters**

· **Protective equipment:**

Wear self-contained breathing apparatus.
 Wear full protective suit.

· **Additional information**

Collect contaminated fire fighting water separately. It must not enter drains.
 Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
 Ambient fire may liberate hazardous vapours.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**

· **Advice for non-emergency personnel:**

Wear protective equipment. Keep unprotected persons away.
 Avoid substance contact.
 Ensure adequate ventilation

Use breathing protection against the effects of fumes/dust/aerosol.

· **Advice for emergency responders:** Protective equipment: see section 8

· **6.2 Environmental precautions:**

Do not allow product to reach sewage system or water bodies.
 Inform respective authorities in case product reaches water or sewage system.

· **6.3 Methods and material for containment and cleaning up:**

Ensure adequate ventilation.
 Collect mechanically.
 Dispose of contaminated material as waste according to item 13.

· **6.4 Reference to other sections**

See Section 8 for information on personal protection equipment.
 See Section 13 for information on disposal.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**

· **Advice on safe handling:** Provide suction extractors if dust is formed.

· **Hygiene measures:**

Do not get in eyes, on skin, or on clothing.
 Take off immediately all contaminated clothing.
 Store protective clothing separately.
 Wash hands during breaks and at the end of the work.
 Do not eat, drink or smoke when using this product.

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

· **Requirements to be met by storerooms and containers:** Store in cool location.

· **Information about storage in one common storage facility:** Store away from flammable substances.

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Further information about storage conditions:

Store in a locked cabinet or with access restricted to technical experts or their assistants.

Store in cool, dry conditions in well sealed containers.

Protect from heat and direct sunlight.

Store in the dark.

Protect from humidity and keep away from water.

This product is hygroscopic.

Recommended storage temperature: 20°C +/- 5°C**7.3 Specific end use(s)** No further relevant information available.**SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Components with limit values that require monitoring at the workplace:****CAS: 9004-34-6 cellulose**

| | |
|---------------------|---|
| WEL (Great Britain) | Short-term value: 20* mg/m ³ Long-term value: 10* 4** mg/m ³ *inhalable dust **respirable |
|---------------------|---|

CAS: 7789-00-6 potassium chromate

| | |
|------------------------|--|
| WEL (Great Britain) | Long-term value: 0.01 0.025* mg/m ³ as Cr; Carc, Sen, BMGV; *process generated |
| BOELV (European Union) | Long-term value: 0.005; 0.01*; 0.025** mg/m ³ as Cr;*until 01/17/2025**processes generating fume |

CAS: 7761-88-8 silver nitrate

| | |
|------------------------|--|
| WEL (Great Britain) | Long-term value: 0.01 mg/m ³ as Ag |
| IOELV (European Union) | Long-term value: 0.01 mg/m ³ as Ag |

CAS: 7778-50-9 potassium dichromate

| | |
|------------------------|--|
| WEL (Great Britain) | Long-term value: 0.01 0.025* mg/m ³ as Cr; Carc, Sen, BMGV; *process generated |
| BOELV (European Union) | Long-term value: 0.005; 0.01*; 0.025** mg/m ³ as Cr;*until 01/17/2025**processes generating fume |

Regulatory information

WEL (Great Britain): EH40/2020

BOELV (European Union): EU 2022/431

IOELV (European Union): (EU) 2019/1831

DNELs

Derived No Effect Level (DNEL)

CAS: 10043-35-3 boric acid

| | | |
|------------|------|--|
| Oral | DNEL | 0.98 mg/kg (Consumer / acute / systemic effects) |
| | | 0.98 mg/kg (Consumer / long-term / systemic effects) |
| Dermal | DNEL | 392 mg/kg (Worker / long-term /systemic effects) |
| | | 196 mg/kg (Consumer / long-term / systemic effects) |
| Inhalative | DNEL | 8.3 mg/m ³ (Worker / long-term /systemic effects) |
| | | 4.15 mg/m ³ (Consumer / long-term / systemic effects) |

CAS: 7761-88-8 silver nitrate

| | | |
|------------|------|--|
| Inhalative | DNEL | 0.016 mg/m ³ (Worker / long-term /systemic effects) |
|------------|------|--|

Recommended monitoring procedures:

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

PNECs

Predicted No Effect Concentration (PNEC)

CAS: 10043-35-3 boric acid

| | |
|------|----------------------------------|
| PNEC | 10 mg/l (Sewage treatment plant) |
| | 2.02 mg/l (Marine water) |

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| | |
|------|--|
| | 13.7 mg/l (Aquatic intermittent release) |
| | 2.02 mg/l (Fresh water) |
| PNEC | 5.4 mg/kg (Soil) |

| | |
|--|---|
| Ingredients with biological limit values: | |
| CAS: 7789-00-6 potassium chromate | |
| BMGV (Great Britain) | 10 µmol/mol creatinine Medium: urine Sampling time: post shift Parameter: chromium |
| CAS: 7778-50-9 potassium dichromate | |
| BMGV (Great Britain) | 10 µmol/mol creatinine Medium: urine Sampling time: post shift Parameter: chromium |

· **Regulatory information** BMGV (Great Britain): EH40/2011

· **Additional information:** The lists that were valid during the compilation were used as basis.

· 8.2 Exposure controls

· Engineering measures:

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.

· Individual protection measures, such as personal protective equipment

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.

· Eye/face protection

Tightly sealed safety glasses.

Use safety glasses that have been tested and approved in accordance with government standards such as EN 166.

· Hand protection

Protective gloves.

Preventive skin protection by use of skin-protecting agents is recommended.

After use of gloves apply skin-cleaning agents and skin cosmetics.

· Material of gloves

nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.11 mm

· Penetration time of glove material

Value for the permeation: Level = 1 (< 10 min)

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Other skin protection (body protection): Protective work clothing.

· Breathing equipment:

In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.

· Recommended filter device for short term use: Filter P3

· **Environmental exposure controls** Do not allow product to reach sewage system or water bodies.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

| | |
|---|---------------------------------|
| · Physical state | Solid. |
| · Form: | Tablets |
| · Colour: | Yellowish |
| · Odour: | Odourless |
| · Odour threshold: | Not applicable. |
| · Melting point/Freezing point: | Not determined. |
| · Boiling point or initial boiling point and boiling range | Not determined. |
| · Flammability | The product is not combustible. |
| · Explosive properties: | Product is not explosive. |
| · Lower and upper explosion limit | |
| Lower: | Not applicable. |
| Upper: | Not applicable. |

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| | |
|---|---|
| · Flash point: | Not applicable. |
| · Auto-ignition temperature: | Not applicable. |
| · Decomposition temperature: | > 171°C (CAS 10043-35-3) |
| · pH (1.8 g/l) at 20°C | 7.1 |
| · Kinematic viscosity | Not applicable (solid). |
| · Solubility | |
| · Water: | Partially insoluble. |
| · Partition coefficient n-octanol/water (log value) | Not applicable (mixture). |
| · Vapour pressure: | Not applicable. |
| · Density and/or relative density | |
| · Density at 20°C: | 1.84 g/cm ³ |
| · Relative density: | Not determined. |
| · Relative gas density | Not applicable (solid). |
| · Particle characteristics | Not determined. |
| · 9.2 Other information | |
| · Information with regard to physical hazard classes | |
| · Corrosive to metals | Void |
| · Other safety characteristics | |
| · Oxidising properties: | Oxidising potential CAS 7761-88-8: is classified as oxidising. |
| · Additional information | |
| · Solids content: | 100 % |

SECTION 10: Stability and reactivity

- **10.1 Reactivity** see section 10.3
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**
Reacts with alcohols
Reacts with strong alkalis and oxidizing agents.
Reacts with reducing agents
- **10.4 Conditions to avoid** To avoid thermal decomposition do not overheat.
- **10.5 Incompatible materials:**
metals
aluminium
steel
organic substances
combustible substances
- **10.6 Hazardous decomposition products:** see section 5

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.

| | | |
|---|-----------------|--|
| · LD/LC50 values that are relevant for classification: | | |
| CAS: 10043-35-3 boric acid | | |
| Oral | LD50 | 2660 mg/kg (rat) (OECD 401) (GESTIS, ECHA registrant) |
| Dermal | LD50. | >2000 mg/kg (rat) (ECHA, registrant: no deaths occurred.) |
| | LD ₀ | 1500 mg/kg (child) (MERCK) |
| | NOAEL | 9.6 mg/kg (rat) (NTP) |
| CAS: 7789-00-6 potassium chromate | | |
| Oral | LD50. | 180 mg/kg (mouse) |

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| CAS: 7761-88-8 silver nitrate | | |
|--|----------|---|
| Oral | LD50 | 1173 mg/kg (rat) (RTECS) |
| CAS: 7778-50-9 potassium dichromate | | |
| Oral | LD50 | 90.5 mg/kg (rat) (OECD 401) (ECHA, registrant: LD50 = 90.5 mg/kg female to 168.0 mg/kg male) |
| | LDLo | 26 mg/kg (child) 143 mg/kg (man) |
| Dermal | LD50 | 1170 mg/kg (rat) (IUCLID) |
| Inhalative | LC50/4h | 0.094 mg/l (rat) (OECD 403, Aerosol) |
| | LD50 IPR | 28 mg/kg (rat) |

- **Skin corrosion/irritation** Causes skin irritation.
- **Serious eye damage/irritation**
Causes serious eye damage.
Risk of corneal clouding.

Information on components:

| CAS: 10043-35-3 boric acid | | |
|--|----------|---|
| Irritation of skin | OECD 404 | (rabbit: no irritation) (Registrant, ECHA) |
| Irritation of eyes | OECD 405 | (rabbit: slight irritation) |
| CAS: 7778-50-9 potassium dichromate | | |
| Irritation of skin | OECD 404 | (rabbit: irritation) |

- **Respiratory or skin sensitisation** May cause an allergic skin reaction.
- **Information on components:**
CAS 7778-50-9: Sensitizing effect by inhalation and skin contact is possible by prolonged exposure.

| CAS: 10043-35-3 boric acid | | |
|--|--------------------|------------------------|
| Sensitisation | OECD 406 | (guinea pig: negative) |
| CAS: 7778-50-9 potassium dichromate | | |
| Sensitisation | Patch test (human) | (positive) (IUCLID) |

- **Germ cell mutagenicity** May cause genetic defects.
- **Carcinogenicity** May cause cancer.
- **Reproductive toxicity** May damage fertility. May damage the unborn child.
- **Information on components:**
OECD 414: Teratogenicity testing
OECD 473: Mutagenicity testing
OECD 471, 474, 476, 487: Germ cell mutagenicity testing

| CAS: 10043-35-3 boric acid | | |
|-----------------------------------|---|--|
| OECD 471 | (negative) (Bacterial Reverse Mutation Test - Ames test) | |
| OECD 476 | (negative) (In Vitro Mammalian Cell Gene Mutation Test) (mouse lymphoma test) | |
| OECD 414 | (negative) (oral, rat) (ECHA, registrant: no evidence of developmental toxicity up to 55 mg/kg bw. At 76 mg/kg bw there was reduced fetal bodyweight, short and wavy ribs, and these effects disappeared during the postnatal period.) | |
| OECD 474 | (negative) (in vivo, mice) | |

- **STOT (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

Information on likely routes of exposure

"Under occupational conditions, the main intake pathway for boric acid (CAS 10043-35-3) proceeds via the respiratory tract. Furthermore, the uptake of the solid or its concentrated solutions should be expected following contact with damaged or inflamed skin." (GESTIS)

The main route of absorption for potassium (di)chromate is through the respiratory tract. Soluble chromates are absorbed relatively quickly through the lungs.

In case of extensive skin contact, especially with injured skin, life-threatening doses can be absorbed. Organic solvents or oils

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promote absorption.

Additional toxicological information:

CAS 7789-00-6 Potassium chromate / CAS 7778-50-9 Potassium dichromate

Main toxic effects [GESTIS]:

acute: irritation/damage to mucous membranes and skin, sensitizing effect (skin/respiratory tract). Damage to kidneys, blood and liver.

chronic: irritation/damage to the skin and mucous membranes, especially in the nose and throat. After penetration of the substance into wounds, these tend to form ulcers.

Allergic skin and respiratory diseases.

resorptive effects: primarily damage to the kidneys up to acute kidney failure; in addition, hemorrhagic diathesis, thrombocytopenia, anemia, possibly methemoglobinemia;

rarely: rapid onset of CNS damage or hepatitis as a late consequence; also promoting respiratory infections.

CAS 10043-35-3: Absorption through gastro-intestinal tract, mucous membranes

CAS: 10043-35-3 boric acid

(source: GESTIS)

Main toxic effects:

Acute: Slightly irritating to the eyes and skin; gastrointestinal disturbances, CNS-effects and (later) skin damage after massive poisoning

Chronic: Irritation to the mucous membranes following inhalative exposure, effects to the gastrointestinal tract and CNS

Further Information (Merck):

"Toxicity reported for borates in humans: ingestion or absorption may cause nausea, vomiting, diarrhea, abdominal cramps, and erythematous lesions on the skin and mucous membranes.

Other symptoms include: circulatory collapse, tachycardia, cyanosis, delirium, convulsions, and coma.

Death has been reported to occur in infants from less than 5 grams and in adults from 5 to 20 grams."

"Liver - Irregularities - Based on Human Evidence"

CAS: 7761-88-8 silver nitrate

(source: GESTIS)

Main toxic effects:

Acute: Irritant to caustic effect on mucous membranes and skin.

After ingestion of high doses: gastrointestinal complaints, disorders of the cardiovascular system and disorders of the central nervous system.

chronic: silver deposits in the tissues (argyria)

Further information:

Depending on the concentration, dust and solutions have an irritating to highly caustic effect on mucous membranes and skin. 5-50% solutions caused severe eye damage, in some cases permanent corneal opacity.

11.2 Information on other hazards

- Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.

Other information

This substance / mixture should be handled with particular care.

Other dangerous properties can not be excluded.

According to the information available to us, the chemical, physical and toxicological properties of the substances mentioned in Chapter 3 have not been thoroughly investigated.

SECTION 12: Ecological information**12.1 Toxicity****Aquatic toxicity:****CAS: 10043-35-3 boric acid**EC50 133 mg/l/48h (Daphnia magna)
(ECOTOX)LC50 50–100 mg/l/96h (rainbow trout)
(ECOTOX)**CAS: 7789-00-6 potassium chromate**EC50 0.02 mg/l/48h (Daphnia magna)
(Ecotox)

0.18 mg/l/48h (Daphnia pulex)

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| | |
|------|---|
| LC50 | 39.8 mg/l/96h (fathhead minnow) (ECOTOX) |
|------|---|

CAS: 7761-88-8 silver nitrate

| | |
|------|--|
| LC50 | 0.00022 mg/l/48h (Daphnia magna) (OECD 202) (Merck, Ag-Ion) |
| EC10 | 0.0021 mg/l (Daphnia magna) (21) (Registrant, ECHA) |
| NOEC | 0.00037 mg/l (fathhead minnow) (OECD 210) (Merck) |
| LC50 | 0.0012 mg/l/96h (fathhead minnow) (US-EPA) (Merck, Ag-Ion) |

CAS: 7778-50-9 potassium dichromate

| | |
|------|--|
| EC50 | 0.62 mg/l/48h (Daphnia magna) (OECD 202) (Merck) |
| NOEC | 0.016–0.064 mg/l (Daphnia magna) (7d) 6 mg/l (fathhead minnow) (7d) |
| IC50 | 0.16–0.59 mg/l/96 h (Chlorella vulgaris) (IUCLID) |
| EC50 | 0.31 mg/l/72h (Desmodesmus subspicatus) |
| LC50 | 58.5 mg/l/96h (byr) 0.131 mg/l/96h (bluegill) 160 mg/l/96h (guppy) 26.13 mg/l/96h (fathhead minnow) (Merck/IUCLID) |

Bacterial toxicity:**CAS: 7778-50-9 potassium dichromate**

| | |
|------|--|
| EC50 | 58 mg/l (Photobacterium phosphoreum) (30 min; Microtox-Test) |
|------|--|

· **12.2 Persistence and degradability** No further relevant information available.

12.3 Bioaccumulative potential

BCF = Bioconcentration factor

Pow = n-octanol/wasser partition coefficient

log Pow < 1 = Does not accumulate in organisms.

CAS: 10043-35-3 boric acid

| | |
|---------|---------------------------------------|
| log Pow | -1.09 (.) (OECD 107, 22°C) (Merck) |
|---------|---------------------------------------|

Bioconcentration factor (BCF)**CAS: 7778-50-9 potassium dichromate**

| | |
|-----|----------------------|
| BCF | 17.4 (rainbow trout) |
|-----|----------------------|

· **12.4 Mobility in soil** No further relevant information available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

· **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.

· **12.7 Other adverse effects** Avoid transfer into the environment.

Water hazard:

Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into soil.

SECTION 13: Disposal considerations

13.1 Waste treatment methods**Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Hand over to disposers of hazardous waste.

European waste catalogue

| | |
|-----------|--|
| 16 05 06* | laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals |
| 16 09 02* | chromates, for example potassium chromate, potassium or sodium dichromate |

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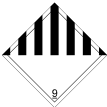

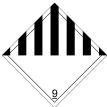

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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

| | |
|---|---|
| <ul style="list-style-type: none"> · 14.1 UN number or ID number · ADR, IMDG, IATA | UN3077 |
| <ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG · IATA | 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (SILVER NITRATE, potassium chromate) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (SILVER NITRATE, potassium chromate), MARINE POLLUTANT ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (SILVER NITRATE, potassium chromate) |
| <ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR <div style="display: flex; align-items: center; gap: 10px;">   </div> <ul style="list-style-type: none"> · Class · Label | 9 (M7) Miscellaneous dangerous substances and articles. 9 |
| <ul style="list-style-type: none"> · IMDG, IATA <div style="display: flex; align-items: center; gap: 10px;">   </div> <ul style="list-style-type: none"> · Class · Label | 9 Miscellaneous dangerous substances and articles. 9 |
| <ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA | III |
| <ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: · Special marking (ADR): · Special marking (IATA): | Product contains environmentally hazardous substances: silver nitrate, potassium chromate Symbol (fish and tree) Symbol (fish and tree) Symbol (fish and tree) |
| <ul style="list-style-type: none"> · 14.6 Special precautions for user · Kemler Number: · EMS Number: · Segregation groups · Stowage Category · Stowage Code | Warning: Miscellaneous dangerous substances and articles. 90 F-A,S-F (SGG7) Heavy metals and their salts (including their organometallic compounds) A SW23 When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9. |
| <ul style="list-style-type: none"> · 14.7 Maritime transport in bulk according to IMO instruments | Not applicable. |
| <ul style="list-style-type: none"> · Transport/Additional information: · ADR · Limited quantities (LQ) · Excepted quantities (EQ) · Transport category · Tunnel restriction code | 5 kg Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g 3 E |

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| | |
|-----------------------------------|--|
| · IMDG | |
| · Limited quantities (LQ) | 5 kg |
| · Excepted quantities (EQ) | Code: E1 |
| | Maximum net quantity per inner packaging: 30 g |
| | Maximum net quantity per outer packaging: 1000 g |

SECTION 15: Regulatory information

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

· **Poisons Act UK**

· **Regulated explosives precursors**

None of the ingredients is listed.

· **Regulated poisons**

None of the ingredients is listed.

· **Reportable explosives precursors**

None of the ingredients is listed.

· **Reportable poisons**

None of the ingredients is listed.

· **Regulation (EU) 2019/1148 on the marketing and use of explosives precursors** not regulated

· **Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC)**

None of the ingredients is listed.

· **Regulation (EC) No 1334/2000 setting up a Community regime for the control of exports of dual-use items and technology:**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

· **Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)**

None of the ingredients is listed.

· **LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)**

CAS: 7789-00-6 | potassium chromate

CAS: 7778-50-9 | potassium dichromate

· **Substances of very high concern (SVHC) according to REACH, Article 57** see item 3 SVHC

· **Substances of very high concern (SVHC) according to UK REACH** see item 3 SVHC

· **Directive 2012/18/EU (SEVESO III):**

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

· **Seveso category E1** Hazardous to the Aquatic Environment

· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t

· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t

· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 28, 29, 30, 47, 72

· **Information about limitation of use:**

Employment restrictions concerning young persons must be observed (94/33/EC).

Employment restrictions concerning pregnant and lactating women must be observed (92/85/EEC).

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

· **Training hints** Provide adequate information, instruction and training for operators.

· **Relevant phrases**

H272 May intensify fire; oxidiser.
 H301 Toxic if swallowed.
 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.
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H335 May cause respiratory irritation.
 H340 May cause genetic defects.
 H350 May cause cancer.
 H350i May cause cancer by inhalation.
 H360FD May damage fertility. May damage 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.

· **Abbreviations and acronyms:**

OECD: Organisation for Economic Co-operation and Development
 STOT: specific target organ toxicity
 SE: single exposure
 RE: repeated exposure
 EC50: half maximal effective concentration
 IC50: half maximal inhibitory concentration
 NOEL or NOEC: No Observed Effect Level or Concentration
 ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 DNEL: Derived No-Effect Level (UK REACH)
 PNEC: Predicted No-Effect Concentration (UK REACH)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 SVHC: Substances of Very High Concern
 vPvB: very Persistent and very Bioaccumulative
 Ox. Sol. 2: Oxidizing solids – Category 2
 Acute Tox. 3: Acute toxicity – Category 3
 Acute Tox. 4: Acute toxicity – Category 4
 Acute Tox. 2: Acute toxicity – Category 2
 Skin Corr. 1B: Skin corrosion/irritation – Category 1B
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
 Resp. Sens. 1: Respiratory sensitisation – Category 1
 Skin Sens. 1: Skin sensitisation – Category 1
 Muta. 1B: Germ cell mutagenicity – Category 1B
 Carc. 1B: Carcinogenicity – Category 1B
 Repr. 1B: Reproductive toxicity – Category 1B
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
 STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
 Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
 Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

· **Sources**

Data arise from safety data sheets, reference works and literature.
 ECHA: European Chemicals Agency <http://echa.europa.eu>
 ECOTOX Database
 GESTIS- Stoffdatenbank (Substance Database, Germany)

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IUCLID (International Uniform Chemical Information Database)
RTECS (Registry of Toxic Effects of Chemical Substances)

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· * **Data compared to the previous version altered.**

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