# BHQ-1 Succinimidyl Ester

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878
Issue date: 12/20/2021 Version: 1.0

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

### 1.1. Product identifier

Product form : Mixture
Product name : BHQ-1 Succinimidyl Ester
Product code : BHQ-1000S
Product group : Trade product

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

#### 1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemical

#### 1.2.2. Uses advised against

No additional information available

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

Biosearch Technologies, Inc
2199 South McDowell Boulevard
Petaluma, CA 94954-6904
USA

Only Representative Address:
Unit 1-2, Trident Industrial Estate, Pindar Road
Hoddesdon, EN110WZ
England

### 1.4. Emergency telephone number

Emergency number : +44 1992 470757 (9am – 5pm GMT)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**Classification according to Regulation (EC) No. 1272/2008 [CLP]**

| | |
|---|---|
| Acute toxicity (oral), Category 4 | H302 |
| Acute toxicity (dermal), Category 4 | H312 |
| Acute toxicity (inhal.), Category 4 | H332 |
| Skin corrosion/irritation, Category 2 | H315 |
| Serious eye damage/eye irritation, Category 2 | H319 |
| Carcinogenicity, Category 1B | H350 |
| Specific target organ toxicity — Repeated exposure, Category 2 | H373 |
| Hazardous to the aquatic environment — Chronic Hazard, Category 2 | H411 |

**Adverse physicochemical, human health and environmental effects**

No additional information available

### 2.2. Label elements

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

Hazard pictograms (CLP) :

GHS07 GHS08 GHS09

Signal word (CLP) : Danger
Hazard statements (CLP) : H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled.

| | | |
|---|---|---|
| | | H315 - Causes skin irritation.<br>H319 - Causes serious eye irritation.<br>H350 - May cause cancer.<br>H373 - May cause damage to organs through prolonged or repeated exposure.<br>H411 - Toxic to aquatic life with long lasting effects. |
| Precautionary statements (CLP) | : | P260 - Do not breathe dust<br>P264 - Wash hands, forearms and face thoroughly after handling.<br>P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection..<br>P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>clothing and wash it before reuse.<br>P273 - Avoid release to the environment<br>P391 - Collect spillage |

### 2.3. Other hazards

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|---|---|---|---|
| Benzenediazonium, 2-methoxy-5-methyl-4-[(4-methyl-2-nitrophenyl)azo]-, (T-4)-tetrachlorozincate(2-) (2:1) | CAS-No.: 61966-14-1 | 30 – 60 | Acute Tox. 4<br>Acute Tox. 4<br>Acute Tox. 4<br>Carc. 1B |
| Ethyl 4-bromobutyrate | CAS-No.: 2969-81-5<br>EC-No.: 221-005-6 | 10 – 30 | Skin Irrit. 2<br>Eye Irrit. 2 |
| N-methylaniline | CAS-No.: 100-61-8<br>EC-No.: 202-870-9<br>EC Index-No.: 612-015-00-5 | 10 – 30 | Acute Tox. 3 (Oral), H301<br>Acute Tox. 3 (Dermal), H311<br>Acute Tox. 3 (Inhalation), H331<br>STOT RE 2, H373<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410 |
| N-hydroxysuccinimide | CAS-No.: 6066-82-6<br>EC-No.: 228-001-3 | 10 – 30 | Not classified |

## SECTION 4: First Aid measures

### 4.1. Description of first aid measures

| | | |
|---|---|---|
| First-aid measures general | : | If exposed or concerned, get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person. |
| First-aid measures after inhalation | : | IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if breathing is affected. If breathing is difficult, supply oxygen. |

First-aid measures after skin contact : IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes. If irritation develops or persists, get medical attention.

First-aid measures after eye contact : IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. Continue rinsing if pain, blinking, or irritation develops or persists, get medical attention. Continue rinsing.

First-aid measures after ingestion : IF SWALLOWED: rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Get medical attention if you feel unwell.

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

Symptoms/effects : Causes skin irritation. Causes serious eye irritation. May cause cancer. May be harmful if swallowed, in contact with skin or if inhaled. May cause damage to organs through prolonged or repeated exposure.

Symptoms/effects after inhalation : May be harmful if inhaled.

Symptoms/effects after skin contact : Causes skin irritation. May be harmful in contact with skin.

Symptoms/effects after eye contact : Causes serious eye irritation.

Symptoms/effects after ingestion : May be harmful if swallowed.

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

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Foam. Carbon dioxide. Dry powder. Water spray.

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

Fire hazard : Not flammable.

Explosion hazard : Product is not explosive.

Reactivity in case of fire : None known.

Hazardous decomposition products in case of fire : No information available.

### 5.3. Advice for firefighters

Precautionary measures fire : Eliminate all ignition sources if safe to do so.

Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers. Do not dispose of fire-fighting water in the environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Self-contained breathing apparatus.

## SECTION 6: Accidental release measures

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

General measures : Evacuate area. Ventilate area. Keep upwind. Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection.

#### 6.1.1. For non-emergency personnel

Protective equipment : Wear Protective equipment as described in Section 8.

Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment : Wear suitable protective clothing, gloves and eye or face protection. Approved supplied-air respirator, in case of emergency.

### 6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters.

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

For containment : Contain and collect as any solid. Sweep or shovel spills into appropriate container for disposal.

Methods for cleaning up : Wear suitable protective clothing. Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal. This material and its container must be disposed of in a safe way, and as per local legislation.

### 6.4. Reference to other sections

See Sections 8 and 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Keep container closed when not in use. Avoid contact with skin and eyes. Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

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

Storage conditions : Store in original container. Keep container closed when not in use. Store in a dry, cool and well-ventilated place.

Incompatible materials : No data available.

### 7.3. Specific end use(s)

No data available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### 8.1.1. National occupational exposure and biological limit values

| Benzenediazonium, 2-methoxy-5-methyl-4-[(4-methyl-2-nitrophenyl)azo]-, (T-4)-tetrachlorozincate(2-) (2:1) (61966-14-1) | |
|---|---|
| **USA - ACGIH - Occupational Exposure Limits** | |
| Remark (ACGIH) | OELs not established |

| N-methylaniline (100-61-8) | |
|---|---|
| **Austria - Occupational Exposure Limits** | |
| MAK (OEL TWA) | 2.2 mg/m³ (reaction with nitrosating agents can lead to formation of carcinogens N-Nitrosomethylaniline) |
| MAK (OEL TWA) [ppm] | 0.5 ppm (reaction with nitrosating agents can lead to formation of carcinogens N-Nitrosomethylaniline) |
| MAK (OEL STEL) | 8.8 mg/m³ |
| MAK (OEL STEL) [ppm] | 2 ppm |
| Chemical category | Skin notation |
| **Belgium - Occupational Exposure Limits** | |
| OEL TWA | 2.2 mg/m³ |
| OEL TWA [ppm] | 0.5 ppm |
| Chemical category | Skin |

| N-methylaniline (100-61-8) | |
|---|---|
| **Croatia - Occupational Exposure Limits** | |
| GVI (OEL TWA) [1] | 2.2 mg/m³ |
| GVI (OEL TWA) [2] | 0.5 ppm |
| **Czech Republic - Occupational Exposure Limits** | |
| PEL (OEL TWA) | 2 mg/m³ |
| Chemical category | Potential for cutaneous absorption |
| **Denmark - Occupational Exposure Limits** | |
| OEL TWA [1] | 2.25 mg/m³ |
| OEL TWA [2] | 0.5 ppm |
| Chemical category | Potential for cutaneous absorption |
| **France - Occupational Exposure Limits** | |
| VME (OEL TWA) | 2 mg/m³ |
| VME (OEL TWA) [ppm] | 0.5 ppm |
| Chemical category | Risk of cutaneous absorption |
| **Germany - Occupational Exposure Limits (TRGS 900)** | |
| AGW (OEL TWA) [1] | 2.2 mg/m³ (the reaction with nitrosating agents can lead to the formation of the corresponding carcinogenic N-Nitrosoamines) |
| AGW (OEL TWA) [2] | 0.5 ppm (the reaction with nitrosating agents can lead to the formation of the corresponding carcinogenic N-Nitrosoamines) |
| Chemical category | Skin notation |
| **Greece - Occupational Exposure Limits** | |
| OEL TWA | 9 mg/m³ |
| OEL TWA [ppm] | 2 ppm |
| Chemical category | skin - potential for cutaneous absorption |
| **Ireland - Occupational Exposure Limits** | |
| OEL TWA [1] | 2 mg/m³ |
| OEL TWA [2] | 0.5 ppm |
| OEL STEL | 6 mg/m³ (calculated) |
| OEL STEL [ppm] | 1.5 ppm (calculated) |
| Chemical category | Potential for cutaneous absorption |
| **Poland - Occupational Exposure Limits** | |
| NDS (OEL TWA) | 2 mg/m³ |
| NDSCh (OEL STEL) | 4 mg/m³ |
| **Portugal - Occupational Exposure Limits** | |
| OEL TWA [ppm] | 0.5 ppm |
| Chemical category | skin - potential for cutaneous exposure |
| **Romania - Occupational Exposure Limits** | |
| OEL TWA | 7 mg/m³ |
| OEL TWA [ppm] | 16 ppm |
| OEL STEL | 10 mg/m³ |

| N-methylaniline (100-61-8) | |
|---|---|
| OEL STEL [ppm] | 23 ppm |
| Chemical category | Skin notation |
| **Slovakia - Occupational Exposure Limits** | |
| NPHV (OEL TWA) [1] | 2.2 mg/m³ |
| NPHV (OEL TWA) [2] | 0.5 ppm |
| NPHV (OEL C) | 4.4 mg/m³ |
| Chemical category | Potential for cutaneous absorption |
| **Slovenia - Occupational Exposure Limits** | |
| OEL TWA | 2.2 mg/m³ |
| OEL TWA [ppm] | 0.5 ppm |
| OEL STEL | 4.4 mg/m³ |
| OEL STEL [ppm] | 1 ppm |
| Chemical category | Potential for cutaneous absorption |
| **Spain - Occupational Exposure Limits** | |
| VLA-ED (OEL TWA) [1] | 2.2 mg/m³ (reaction with nitrosating agents can lead to formation of carcinogenic N-Nitrosamines) |
| VLA-ED (OEL TWA) [2] | 0.5 ppm (reaction with nitrosating agents can lead to formation of carcinogenic N-Nitrosamines) |
| Chemical category | skin - potential for cutaneous absorption |
| **Spain - Biological limit values** | |
| BLV | Parameter: Methemoglobin - Medium: blood - Sampling time: end of shift (BLVm) |
| **United Kingdom - Occupational Exposure Limits** | |
| WEL TWA (OEL TWA) [1] | 2.2 mg/m³ |
| WEL TWA (OEL TWA) [2] | 0.5 ppm |
| WEL STEL (OEL STEL) | 6.6 mg/m³ (calculated) |
| WEL STEL (OEL STEL) [ppm] | 1.5 ppm (calculated) |
| WEL chemical category | Potential for cutaneous absorption |
| **Norway - Occupational Exposure Limits** | |
| Grenseverdi (OEL TWA) [1] | 2 mg/m³ |
| Grenseverdi (OEL TWA) [2] | 0.5 ppm |
| Korttidsverdi (OEL STEL) | 4 mg/m³ (value calculated) |
| Korttidsverdi (OEL STEL) [ppm] | 1.5 ppm (value calculated) |
| Chemical category | Skin notation |
| **Switzerland - Occupational Exposure Limits** | |
| MAK (OEL TWA) [1] | 2.2 mg/m³ (the reaction with Nitrosating agent can lead to carcinogenic N-Nitrosomethylanilines) |
| MAK (OEL TWA) [2] | 0.5 ppm (the reaction with Nitrosating agent can lead to carcinogenic N-Nitrosomethylanilines) |
| KZGW (OEL STEL) | 4.4 mg/m³ (the reaction with Nitrosating agent can lead to carcinogenic N-Nitrosomethylanilines) |

| N-methylaniline (100-61-8) | |
|---|---|
| KZGW (OEL STEL) [ppm] | 1 ppm (the reaction with Nitrosating agent can lead to carcinogenic N-Nitrosomethylanilines) |
| Chemical category | Skin notation, Category C2 carcinogen |
| **USA - ACGIH - Occupational Exposure Limits** | |
| Local name | N-Methylaniline |
| ACGIH OEL TWA [ppm] | 0.5 ppm |
| Remark (ACGIH) | TLV® Basis: MeHb-emia; CNS impair. Notations: Skin; BEIM |
| ACGIH chemical category | Skin - potential significant contribution to overall exposure by the cutaneous route |
| Regulatory reference | ACGIH 2021 |
| **USA - ACGIH - Biological Exposure Indices** | |
| BEI | 1.5 % of hemoglobin Parameter: Methemoglobin - Medium: blood - Sampling time: during or end of shift (background, nonspecific, semi-quantitative) |

#### 8.1.2. Recommended monitoring procedures

No additional information available

#### 8.1.3. Air contaminants formed

No additional information available

#### 8.1.4. DNEL and PNEC

No additional information available

#### 8.1.5. Control banding

No additional information available

### 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

**Appropriate engineering controls:**
Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Ensure adequate ventilation, especially in confined areas.

#### 8.2.2. Personal protection equipment

**Personal protective equipment:**
Gloves. Protective goggles. Wear chemically impervious apron over labcoat and full coverage clothing.

**Personal protective equipment symbol(s):**

#### 8.2.2.1. Eye and face protection

**Eye protection:**
Wear eye protection, including chemical splash goggles and a face shield when possibility exists for eye contact due to spraying liquid or airborne particles [EN 167].

#### 8.2.2.2. Skin protection

**Skin and body protection:**
Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure [EN 14605:2005 and EN 13034:2005].

**Hand protection:**
Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl. Suitable gloves for this specific application can be recommended by the glove supplier

#### 8.2.2.3. Respiratory protection

**Respiratory protection:**
Use European Standard EN 529:2005 (or other equivalent national standard) -approved dust/particulate respirator. Where vapour, mist, or dust exceed PELs or other applicable OELs, use the European Standard EN 529:2005 approved dust/particulate respiratory protective equipment..

#### 8.2.2.4. Thermal hazards

No additional information available

#### 8.2.3. Environmental exposure controls

No additional information available

## SECTION 9: Physical and chemical properties

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

| | | |
|---|---|---|
| Physical state | : | Solid |
| Colour | : | Red. |
| Appearance | : | Powder. |
| Odour | : | No data available. |
| Odour threshold | : | Not available |
| Melting point | : | Not available |
| Freezing point | : | Not available |
| Boiling point | : | Not available |
| Flammability | : | Not available |
| Explosive limits | : | Not applicable |
| Lower explosive limit (LEL) | : | Not applicable |
| Upper explosive limit (UEL) | : | Not applicable |
| Flash point | : | Not applicable |
| Auto-ignition temperature | : | Not applicable |
| Decomposition temperature | : | Not available |
| pH | : | Not available |
| pH solution | : | Not available |
| Viscosity, kinematic | : | Not applicable |
| Solubility | : | Not available |
| Partition coefficient n-octanol/water (Log Kow) | : | Not available |
| Vapour pressure | : | Not available |
| Vapour pressure at 50 °C | : | Not available |
| Density | : | Not available |
| Relative density | : | Not available |
| Relative vapour density at 20 °C | : | Not applicable |
| Particle size | : | Not available |
| Particle size distribution | : | Not available |
| Particle shape | : | Not available |
| Particle aspect ratio | : | Not available |
| Particle aggregation state | : | Not available |
| Particle agglomeration state | : | Not available |
| Particle specific surface area | : | Not available |
| Particle dustiness | : | Not available |

### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

No additional information available

#### 9.2.2. Other safety characteristics

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Air and moisture sensitive.

### 10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

### 10.3. Possibility of hazardous reactions

None under normal use.

### 10.4. Conditions to avoid

None under normal use.

### 10.5. Incompatible materials

None known.

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

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

Acute toxicity (oral) : Harmful if swallowed.
Acute toxicity (dermal) : Harmful in contact with skin.
Acute toxicity (inhalation) : Harmful if inhaled.

| BHQ-1 Succinimidyl Ester | |
|---|---|
| ATE CLP (oral) | 500 mg/kg bodyweight |
| ATE CLP (dermal) | 1100 mg/kg bodyweight |
| ATE CLP (gases) | 4500 ppmv/4h |
| ATE CLP (vapours) | 11 mg/l/4h |
| ATE CLP (dust,mist) | 1.5 mg/l/4h |

| N-methylaniline (100-61-8) | |
|---|---|
| LD50 oral rat | 716 – 782 mg/kg |

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : May cause cancer.
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.

| N-methylaniline (100-61-8) | |
|---|---|
| LOAEC (inhalation, rat, vapour, 90 days) | 0.0133 mg/l air Animal: rat, Guideline: OECD Guideline 412 (Subacute Inhalation Toxicity: 28-Day Study) |
| STOT-repeated exposure | May cause damage to organs through prolonged or repeated exposure. |

Aspiration hazard : Not classified

| BHQ-1 Succinimidyl Ester | |
|---|---|
| Viscosity, kinematic | Not applicable |

### 11.2. Information on other hazards

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : No data available.
Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Not classified

| Ethyl 4-bromobutyrate (2969-81-5) | |
|---|---|
| LC50 - Fish [1] | 20.654 mg/l Source: Ecological Structure Activity Relationships |
| EC50 96h - Algae [1] | 17.298 mg/l Source: Ecological Structure Activity Relationships |

| N-methylaniline (100-61-8) | |
|---|---|
| LC50 - Fish [1] | 100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through]) |
| EC50 72h - Algae [1] | 3.8 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) |
| NOEC (chronic) | 0.29 mg/l Test organisms (species): Daphnia magna Duration: '504 h' |

| N-hydroxysuccinimide (6066-82-6) | |
|---|---|
| LC50 - Fish [1] | 69925.4 mg/l Source: Ecological Structure Activity Relationships |

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

| Ethyl 4-bromobutyrate (2969-81-5) | |
|---|---|
| Partition coefficient n-octanol/water (Log Pow) | 2.19 Source: Quantitative Structure Activity Relation |

| N-methylaniline (100-61-8) | |
|---|---|
| Partition coefficient n-octanol/water (Log Pow) | 1.66 |

| N-hydroxysuccinimide (6066-82-6) | |
|---|---|
| Partition coefficient n-octanol/water (Log Pow) | -0.87 Source: The Chemical Database, The Department of Chemistry at the University of Akron |

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Endocrine disrupting properties

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

### 12.7. Other adverse effects

Other adverse effects : No data available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Do not discharge to public wastewater systems without permit of pollution control authorities. No discharge to surface waters is allowed without an specific permit.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

## SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

### 14.1. UN number or ID number

UN-No. (ADR) : Not regulated
UN-No. (IMDG) : Not regulated
UN-No. (IATA) : Not regulated
UN-No. (ADN) : Not regulated
UN-No. (RID) : Not regulated

### 14.2. UN proper shipping name

Proper Shipping Name (ADR) : Not regulated
Proper Shipping Name (IMDG) : Not regulated
Proper Shipping Name (IATA) : Not regulated
Proper Shipping Name (ADN) : Not regulated
Proper Shipping Name (RID) : Not regulated

### 14.3. Transport hazard class(es)

**ADR**
Transport hazard class(es) (ADR) : Not regulated

**IMDG**
Transport hazard class(es) (IMDG) : Not regulated

**IATA**
Transport hazard class(es) (IATA) : Not regulated

**ADN**
Transport hazard class(es) (ADN) : Not regulated

**RID**
Transport hazard class(es) (RID) : Not regulated

### 14.4. Packing group

Packing group (ADR) : Not regulated
Packing group (IMDG) : Not regulated
Packing group (IATA) : Not regulated
Packing group (ADN) : Not regulated
Packing group (RID) : Not regulated

### 14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

### 14.6. Special precautions for user

**Overland transport**
Not regulated

**Transport by sea (IMDG)**
Not regulated

**Air transport (IATA)**
Not regulated

**Inland waterway transport**
Not regulated

**Rail transport**
Not regulated

### 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

#### 15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances
Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.
Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

#### 15.1.2. National regulations

All chemical substances in this product are listed as “Active” in the EPA (Environmental Protection Agency) “TSCA Inventory Notification (Active-Inactive) Requirements Rule” (“the Final Rule”) of Feb 2019, as amended Feb 2021 or are otherwise exempt, or regulated by other agencies such as FDA or FIFRA except following substance is not present in the “TSCA Inventory Notification (Active-Inactive) list.

| | |
|---|---|
| Ethyl 4-bromobutyrate | (CAS-No.) 2969-81-5 |

**Germany**

| | | |
|---|---|---|
| Water hazard class (WGK) | : | WGK 3, Highly hazardous to water (Classification according to AwSV, Annex 1) |
| Hazardous Incident Ordinance (12. BImSchV) | : | Is not subject of the Hazardous Incident Ordinance (12. BImSchV) |

**Netherlands**

| | | |
|---|---|---|
| SZW-lijst van kankerverwekkende stoffen | : | None of the components are listed |
| SZW-lijst van mutagene stoffen | : | None of the components are listed |
| SZW-lijst van reprotoxische stoffen – Borstvoeding | : | None of the components are listed |
| SZW-lijst van reprotoxische stoffen – Vruchtbaarheid | : | None of the components are listed |
| SZW-lijst van reprotoxische stoffen – Ontwikkeling | : | None of the components are listed |

**Denmark**

| | | |
|---|---|---|
| Danish National Regulations | : | Young people below the age of 18 years are not allowed to use the product<br>Pregnant/breastfeeding women working with the product must not be in direct contact with the product |

### 15.2. Chemical safety assessment

No additional information available

## SECTION 16: Other information

| Full text of H- and EUH-statements | |
|---|---|
| Acute Tox. 3 (Dermal) | Acute toxicity (dermal), Category 3 |
| Acute Tox. 3 (Inhalation) | Acute toxicity (inhal.), Category 3 |
| Acute Tox. 3 (Oral) | Acute toxicity (oral), Category 3 |
| Aquatic Acute 1 | Hazardous to the aquatic environment — Acute Hazard, Category 1 |
| Aquatic Chronic 1 | Hazardous to the aquatic environment — Chronic Hazard, Category 1 |
| STOT RE 2 | Specific target organ toxicity — Repeated exposure, Category 2 |
| H301 | Toxic if swallowed. |
| H302 | Harmful if swallowed. |
| H311 | Toxic in contact with skin. |
| H312 | Harmful in contact with skin. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H331 | Toxic if inhaled. |
| H332 | Harmful if inhaled. |
| H350 | May cause cancer. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |

| Abbreviations and acronyms | |
|---|---|
| ACGIH | American Conference of Governement Industrial Hygienists |
| AGW | Arbeitsplatzgrenzwerte (German occupational exposure limits) |
| ADN | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| ASTM | American Society for Testing and Materials |
| AwSV | Ordinance on facilities for handling substances that are hazardous to water |
| BEI | Biological Exposure Indices |
| BCF | Bioconcentration factor |
| BOD | Biological Oxygen Demand |
| BLV | Biological limit values |
| CAS-No. | Chemical Abstract Service number |
| CC | Closed cup |
| CFR | Code of Federal Regulations |
| CLP | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008 |
| CMR | Carcinogenic, mutagenic, or toxic for reproduction |
| CNS | Central nervous system |
| COD | Chemical Oxygen Demand |
| DNEL | Derived No-Effect Level |

| Abbreviations and acronyms | |
|---|---|
| EAC | Emergency action code |
| EC50 | Median effective concentration |
| EC-No. | European Community number |
| ED | Endocrine disrupting properties |
| ED50 | Median effective dose |
| EmS-No. | Emergency Schedules number |
| EN | European Standard |
| ERG code | Emergency Response Guide code |
| FDA | Food and Drug Administration (US agency) |
| FIFRA | Federal Insecticide, Fungicide, and Rodenticide Act (US act) |
| HAPS | Hazardous Air Pollutants |
| IARC | International Agency for Research on Cancer |
| IATA | International Air Transport Association |
| IBC | Intermediate bulk container |
| IMDG | International Maritime Dangerous Goods |
| IOEL | Indicative Occupational Exposure Limit |
| LC50 | Median lethal concentration |
| LD50 | Median lethal dose |
| LK | Lagerklassen (Switzerland storage class) |
| LOAEL | Lowest Observed Adverse Effect Level |
| NDS | Najwyïsze dopuszczalne stкïenie na stanowisku pracy (Polish occupational exposure limit) |
| NDSCh | Najwyïsze dopuszczalne stкïenie chwilowe (Polish occupational exposure limit) |
| NIOSH | National Institute for Occupational Safety and Health |
| NOAEC | No Observed Adverse Effect Concentration |
| NOAEL | No Observed Adverse Effect Level |
| NOEC | No Observed Effect Concentration |
| NTP | National Toxicology Program |
| OECD | Organisation for Economic Co-operation and Development |
| OEL | Occupational Exposure Limit |
| OSHA | Occupational Safety and Health Administration (US agency) |
| PBT | Persistent Bioaccumulative Toxic |
| PCA | Passenger and Cargo Aircraft |
| PEL | Permissible Exposure Limit |
| PNEC | Predicted No-Effect Concentration |
| PPE | Personal protective equipment |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 |
| RID | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SDS | Safety Data Sheet |
| STEL | Short Term Exposure Limit |

| Abbreviations and acronyms | |
|---|---|
| STOT SE | Specific target organ toxicity – single exposure |
| STOT RE | Specific target organ toxicity – repeated exposure |
| STP | Sewage treatment plant |
| SZW-lijst | Sociale Zaken en Werkgelegenheid (Netherlands CMR list) |
| TLV | Threshold Limit Value |
| TGG | Tijdgewogen gemiddelde (Netherlands occupational exposure limit) |
| TRGS | Technical Rules for Hazardous Substances |
| TSCA | Toxic Substances Control Act |
| TWA | Time-Weighted Average |
| UFI | Unique Formula Identifier |
| UN-No. | United Nations number |
| vPvB | Very Persistent and Very Bioaccumulative |
| VLE | Valeurs limites d'exposition (French occupational exposure limits) |
| VME | Valeur moyenne d'exposition (French occupational exposure limit) |
| VOC | Volatile Organic Compounds |
| WEL | Workplace Exposure Limit |
| WGK | Water Hazard Class |

Data sources : Globally Harmonized System of Classification and Labelling of Chemicals (GHS).
Classification for the USA in accordance with 29 CFR 1910.1200 (2012).
Classification for the EU in accordance with Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
ECHA (European Chemicals Agency).

Training advice : Normal use of this product shall imply use in accordance with the instructions for use and corresponding product packaging. Workers should be trained in the safety procedures and disposal requirements of their workplace as required by local regulations.

Indication of changes:
Revision 1.0: New SDS Created.

Other information

SDS prepared by:

Pace Analytical Services, Inc.
Product Regulatory Services Group
1800 Elm Street
Minneapolis, MN 55414
United States
612-656-1175
paceSDS@pacelabs.com


| Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP] | | |
|---|---|---|
| Acute Tox. 4 (Oral) | H302 | Calculation method |
| Acute Tox. 4 (Dermal) | H312 | Calculation method |
| Acute Tox. 4 (Inhalation) | H332 | Calculation method |

| Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP] | | |
|---|---|---|
| Skin Irrit. 2 | H315 | Calculation method |
| Eye Irrit. 2 | H319 | Calculation method |
| Carc. 1B | H350 | Calculation method |
| STOT RE 2 | H373 | Calculation method |

Safety Data Sheet (SDS), EU

To the best of our knowledge, the information contained herein is accurate. However, Disclaimer: neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.