# Ivermectin (with Isopropyl Alcohol) Formulation

| Version | Revision Date: | SDS Number: | Date of last issue: 06.07.2024 |
|---|---|---|---|
| 8.0 | 28.09.2024 | 9373221-00016 | Date of first issue: 27.08.2021 |

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

### 1.1 Product identifier

Trade name : Ivermectin (with Isopropyl Alcohol) Formulation

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

Use of the Substance/Mixture : Veterinary product

Recommended restrictions on use : Not applicable

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

Company : MSD
Walton Manor, Walton
MK7 7AJ Milton Keynes - United Kingdom

Telephone : +1-908-740-4000

E-mail address of person responsible for the SDS : EHSDATASTEWARD@msd.com

### 1.4 Emergency telephone number

+1-908-423-6000

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)**

| | |
|---|---|
| Flammable liquids, Category 3 | H226: Flammable liquid and vapour. |
| Eye irritation, Category 2 | H319: Causes serious eye irritation. |
| Skin sensitisation, Category 1 | H317: May cause an allergic skin reaction. |
| Germ cell mutagenicity, Category 2 | H341: Suspected of causing genetic defects. |
| Specific target organ toxicity - single exposure, Category 3 | H336: May cause drowsiness or dizziness. |
| Short-term (acute) aquatic hazard, Category 1 | H400: Very toxic to aquatic life. |
| Long-term (chronic) aquatic hazard, Category 1 | H410: Very toxic to aquatic life with long lasting effects. |

### 2.2 Label elements

**Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)**

Hazard pictograms :

Signal word : Warning

Hazard statements :

| | |
|---|---|
| H226 | Flammable liquid and vapour. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H336 | May cause drowsiness or dizziness. |
| H341 | Suspected of causing genetic defects. |
| H410 | Very toxic to aquatic life with long lasting effects. |

Precautionary statements :

**Prevention:**

| | |
|---|---|
| P201 | Obtain special instructions before use. |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |

**Response:**

| | |
|---|---|
| P304 + P340 + P312 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell. |
| P391 | Collect spillage. |

Hazardous components which must be listed on the label:
Propan-2-ol
7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Vapours may form explosive mixture with air.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

**Components**

| Chemical name | CAS-No.<br>EC-No.<br>Index-No. | Classification | Concentration (% w/w) |
|---|---|---|---|

| | Registration number | | |
|---|---|---|---|
| 2-(2-Butoxyethoxy)ethanol | 112-34-5<br>203-961-6<br>603-096-00-8 | Eye Irrit. 2; H319 | >= 50 - < 70 |
| Propan-2-ol | 67-63-0<br>200-661-7<br>603-117-00-0 | Flam. Liq. 2; H225<br>Eye Irrit. 2; H319<br>STOT SE 3; H336 | >= 30 - < 50 |
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate | 2386-87-0<br>219-207-4 | Skin Sens. 1; H317<br>Muta. 2; H341<br>STOT RE 2; H373 (nasal cavity)<br>Aquatic Chronic 3; H412 | >= 1 - < 2.5 |
| Ivermectin | 70288-86-7<br>274-536-0 | Acute Tox. 2; H300<br>Acute Tox. 3; H311<br>STOT SE 1; H370 (Central nervous system)<br>STOT RE 1; H372 (Central nervous system)<br>Aquatic Acute 1; H400<br>Aquatic Chronic 1; H410<br>M-Factor (Acute aquatic toxicity): 10,000<br>M-Factor (Chronic aquatic toxicity): 10,000 | >= 0.25 - < 1 |
| 2,6-Di-tert-butyl-p-cresol | 128-37-0<br>204-881-4 | Aquatic Acute 1; H400<br>Aquatic Chronic 1; H410<br>M-Factor (Acute aquatic toxicity): 1<br>M-Factor (Chronic aquatic toxicity): 1 | >= 0.25 - < 1 |

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical

advice.

| | | |
|---|---|---|
| Protection of first-aiders | : | First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8). |
| If inhaled | : | If inhaled, remove to fresh air.<br>Get medical attention. |
| In case of skin contact | : | In case of contact, immediately flush skin with plenty of water.<br>Remove contaminated clothing and shoes.<br>Get medical attention.<br>Wash clothing before reuse.<br>Thoroughly clean shoes before reuse. |
| In case of eye contact | : | In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.<br>If easy to do, remove contact lens, if worn.<br>Get medical attention. |
| If swallowed | : | If swallowed, DO NOT induce vomiting.<br>Get medical attention.<br>Rinse mouth thoroughly with water. |

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

| | | |
|---|---|---|
| Risks | : | May cause an allergic skin reaction.<br>Causes serious eye irritation.<br>May cause drowsiness or dizziness.<br>Suspected of causing genetic defects. |

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

| | | |
|---|---|---|
| Treatment | : | Treat symptomatically and supportively. |

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

| | | |
|---|---|---|
| Suitable extinguishing media | : | Water spray<br>Alcohol-resistant foam<br>Carbon dioxide (CO2)<br>Dry chemical |
| Unsuitable extinguishing media | : | High volume water jet |

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

| | | |
|---|---|---|
| Specific hazards during fire-fighting | : | Do not use a solid water stream as it may scatter and spread fire.<br>Flash back possible over considerable distance. |

Vapours may form explosive mixtures with air.
Exposure to combustion products may be a hazard to health.

Hazardous combustion products : Carbon oxides

### 5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

## SECTION 6: Accidental release measures

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

Personal precautions : Remove all sources of ignition.
Use personal protective equipment.
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

### 6.2 Environmental precautions

Environmental precautions : Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g. by containment or oil barriers).
Retain and dispose of contaminated wash water.
If spillage enters rivers or watercourses, inform the Environment Agency (emergency telephone number 0800 807060).

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

Methods for cleaning up : Non-sparking tools should be used.
Soak up with inert absorbent material.
Suppress (knock down) gases/vapours/mists with a water spray jet.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

### 6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

| | | |
|---|---|---|
| Technical measures | : | See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section. |
| Local/Total ventilation | : | If sufficient ventilation is unavailable, use with local exhaust ventilation.<br>Use explosion-proof electrical, ventilating and lighting equipment. |
| Advice on safe handling | : | Do not get on skin or clothing.<br>Do not breathe mist or vapours.<br>Do not swallow.<br>Do not get in eyes.<br>Wash skin thoroughly after handling.<br>Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment<br>Non-sparking tools should be used.<br>Keep container tightly closed.<br>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.<br>Take precautionary measures against static discharges.<br>Take care to prevent spills, waste and minimize release to the environment. |
| Hygiene measures | : | If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace.<br>Wash contaminated clothing before re-use.<br>The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls. |

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

| | | |
|---|---|---|
| Requirements for storage areas and containers | : | Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition. |
| Advice on common storage | : | Do not store with the following product types:<br>Strong oxidizing agents<br>Self-reactive substances and mixtures<br>Organic peroxides |

Flammable solids
Pyrophoric liquids
Pyrophoric solids
Self-heating substances and mixtures
Substances and mixtures, which in contact with water, emit flammable gases
Explosives
Gases
Very acutely toxic substances and mixtures

### 7.3 Specific end use(s)

Specific use(s) : No data available

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Occupational Exposure Limits**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters | Basis |
|---|---|---|---|---|
| 2-(2-Butoxyeth-oxy)ethanol | 112-34-5 | TWA | 10 ppm<br>67.5 mg/m3 | GB EH40 |
| | | STEL | 15 ppm<br>101.2 mg/m3 | GB EH40 |
| | | TWA | 10 ppm<br>67.5 mg/m3 | 2006/15/EC |
| | Further information: Indicative | | | |
| | | STEL | 15 ppm<br>101.2 mg/m3 | 2006/15/EC |
| | Further information: Indicative | | | |
| Propan-2-ol | 67-63-0 | STEL | 500 ppm<br>1,250 mg/m3 | GB EH40 |
| | | TWA | 400 ppm<br>999 mg/m3 | GB EH40 |
| Ivermectin | 70288-86-7 | TWA | 30 µg/m3 (OEB 3) | Internal |
| | Further information: Skin | | | |
| | | Wipe limit | 300 µg/100 cm2 | Internal |
| 2,6-Di-tert-butyl-p-cresol | 128-37-0 | TWA | 10 mg/m3 | GB EH40 |

**Derived No Effect Level (DNEL)**

| Substance name | End Use | Exposure routes | Potential health effects | Value |
|---|---|---|---|---|
| 7-Oxabicy-clo[4.1.0]hept-3-ylmethyl 7- | Workers | Inhalation | Long-term systemic effects | 0.18 mg/m3 |

| | | | | |
|---|---|---|---|---|
| oxabicyclo[4.1.0]heptane-3-carboxylate | | | | |
| | Workers | Inhalation | Long-term local effects | 0.18 mg/m3 |
| | Workers | Skin contact | Long-term systemic effects | 0.05 mg/kg bw/day |
| Propan-2-ol | Workers | Inhalation | Long-term systemic effects | 500 mg/m3 |
| | Workers | Skin contact | Long-term systemic effects | 888 mg/kg bw/day |
| | Consumers | Inhalation | Long-term systemic effects | 89 mg/m3 |
| | Consumers | Skin contact | Long-term systemic effects | 319 mg/kg bw/day |
| | Consumers | Ingestion | Long-term systemic effects | 26 mg/kg bw/day |
| 2-(2-Butoxyethoxy)ethanol | Workers | Inhalation | Long-term systemic effects | 67.5 mg/m3 |
| | Workers | Inhalation | Long-term local effects | 67.5 mg/m3 |
| | Workers | Inhalation | Acute local effects | 101.2 mg/m3 |
| | Workers | Skin contact | Long-term systemic effects | 83 mg/kg bw/day |
| | Consumers | Inhalation | Long-term systemic effects | 40.5 mg/m3 |
| | Consumers | Inhalation | Long-term local effects | 40.5 mg/m3 |
| | Consumers | Inhalation | Acute local effects | 60.7 mg/m3 |
| | Consumers | Skin contact | Long-term systemic effects | 50 mg/kg bw/day |
| | Consumers | Ingestion | Long-term systemic effects | 5 mg/kg bw/day |
| 2,6-Di-tert-butyl-p-cresol | Workers | Inhalation | Long-term systemic effects | 3.5 mg/m3 |
| | Workers | Dermal | Long-term systemic effects | 0.5 mg/kg bw/day |
| | Consumers | Inhalation | Long-term systemic effects | 0.86 mg/m3 |
| | Consumers | Dermal | Long-term systemic effects | 0.25 mg/kg bw/day |
| | Consumers | Ingestion | Long-term systemic effects | 0.25 mg/kg bw/day |

**Predicted No Effect Concentration (PNEC)**

| Substance name | Environmental Compartment | Value |
|---|---|---|
| 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate | Fresh water | 0.024 mg/l |
| | Freshwater - intermittent | 0.24 mg/l |

| | | |
|---|---|---|
| | Marine water | 0.0024 mg/l |
| | Sewage treatment plant | 19.5 mg/l |
| | Fresh water sediment | 0.211 mg/kg dry weight (d.w.) |
| | Marine sediment | 0.0211 mg/kg dry weight (d.w.) |
| | Soil | 0.0282 mg/kg dry weight (d.w.) |
| Propan-2-ol | Fresh water | 140.9 mg/l |
| | Marine water | 140.9 mg/l |
| | Intermittent use/release | 140.9 mg/l |
| | Sewage treatment plant | 2251 mg/l |
| | Fresh water sediment | 552 mg/kg dry weight (d.w.) |
| | Marine sediment | 552 mg/kg dry weight (d.w.) |
| | Soil | 28 mg/kg dry weight (d.w.) |
| | Oral (Secondary Poisoning) | 160 mg/kg food |
| 2-(2-Butoxyethoxy)ethanol | Fresh water | 1.1 mg/l |
| | Freshwater - intermittent | 11 mg/l |
| | Marine water | 0.11 mg/l |
| | Sewage treatment plant | 200 mg/l |
| | Fresh water sediment | 4.4 mg/kg dry weight (d.w.) |
| | Marine sediment | 0.44 mg/kg dry weight (d.w.) |
| | Soil | 0.32 mg/kg dry weight (d.w.) |
| | Secondary Poisoning | 56 mg/kg food |
| 2,6-Di-tert-butyl-p-cresol | Fresh water | 0.199 µg/l |
| | Intermittent use/release | 0.02 µg/l |
| | Marine water | 0.02 µg/l |
| | Sewage treatment plant | 0.17 mg/l |
| | Fresh water sediment | 0.0996 mg/kg dry weight (d.w.) |
| | Marine sediment | 0.00996 mg/kg dry weight (d.w.) |
| | Soil | 0.04769 mg/kg dry weight (d.w.) |
| | Oral (Secondary Poisoning) | 8.33 mg/kg food |

### 8.2 Exposure controls

#### Engineering measures

Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip-less quick connections).
All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.

Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices).
Minimize open handling.
Use explosion-proof electrical, ventilating and lighting equipment.

**Personal protective equipment**

| | | |
|---|---|---|
| Eye/face protection | : | Wear safety glasses with side shields or goggles.<br>If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.<br>Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols. |
| Hand protection | | |
| Material | : | Chemical-resistant gloves |
| Remarks | : | Consider double gloving. Take note that the product is flammable, which may impact the selection of hand protection. |
| Skin and body protection | : | Work uniform or laboratory coat.<br>Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.<br>Use appropriate degowning techniques to remove potentially contaminated clothing. |
| Respiratory protection | : | If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.<br>Equipment should conform to BS EN 14387 |
| Filter type | : | Organic vapour type (A) |

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | liquid |
| Colour | : | yellow |
| Odour | : | solvent-like |
| Odour Threshold | : | No data available |
| pH | : | No data available |
| Melting point/freezing point | : | No data available |
| Initial boiling point and boiling range | : | No data available |
| Flash point | : | 28 °C |
| Evaporation rate | : | No data available |
| Flammability (solid, gas) | : | Not applicable |

| | | |
|---|---|---|
| Upper explosion limit / Upper flammability limit | : | No data available |
| Lower explosion limit / Lower flammability limit | : | No data available |
| Vapour pressure | : | No data available |
| Relative vapour density | : | No data available |
| Relative density | : | No data available |
| Density | : | 0.855 - 0.905 g/cm³ |
| Solubility(ies) | | |
| Water solubility | : | No data available |
| Partition coefficient: n-octanol/water | : | Not applicable |
| Auto-ignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| Viscosity | | |
| Viscosity, kinematic | : | No data available |
| Explosive properties | : | Not explosive |
| Oxidizing properties | : | The substance or mixture is not classified as oxidizing. |

**9.2 Other information**

| | | |
|---|---|---|
| Flammability (liquids) | : | No data available |
| Molecular weight | : | No data available |
| Particle size | : | Not applicable |

## SECTION 10: Stability and reactivity

**10.1 Reactivity**

Not classified as a reactivity hazard.

**10.2 Chemical stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

| | | |
|---|---|---|
| Hazardous reactions | : | Flammable liquid and vapour.<br>Vapours may form explosive mixture with air.<br>Can react with strong oxidizing agents. |

### 10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

### 10.5 Incompatible materials

Materials to avoid : Oxidizing agents

### 10.6 Hazardous decomposition products

No hazardous decomposition products are known.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Information on likely routes of exposure : Inhalation
Skin contact
Ingestion
Eye contact

**Acute toxicity**

Not classified based on available information.

**Product:**

Acute oral toxicity : Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

**Components:**

**2-(2-Butoxyethoxy)ethanol:**

Acute oral toxicity : LD50 (Mouse): 2,410 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 2,764 mg/kg

**Propan-2-ol:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 25 mg/l
Exposure time: 6 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**

Acute oral toxicity : LD50 (Rat, male): > 2,959 - 5,000 mg/kg
Method: OECD Test Guideline 401

| | | |
|---|---|---|
| Acute inhalation toxicity | : | LC50 (Rat): >= 5.19 mg/l<br>Exposure time: 4 h<br>Test atmosphere: dust/mist<br>Method: OECD Test Guideline 436<br>Assessment: The substance or mixture has no acute inhalation toxicity |
| Acute dermal toxicity | : | LD50 (Rat): > 2,000 mg/kg<br>Method: OECD Test Guideline 402<br>Assessment: The substance or mixture has no acute dermal toxicity |

**Ivermectin:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Rat): 50 mg/kg<br><br>LD50 (Mouse): 25 mg/kg<br><br>LD50 (Monkey): > 24 mg/kg<br>Target Organs: Central nervous system<br>Symptoms: Vomiting, Dilatation of the pupil<br>Remarks: No mortality observed at this dose. |
| Acute inhalation toxicity | : | LC50 (Rat): 5.11 mg/l<br>Exposure time: 1 h<br>Test atmosphere: dust/mist |
| Acute dermal toxicity | : | LD50 (Rabbit): 406 mg/kg<br><br>LD50 (Rat): > 660 mg/kg |

**2,6-Di-tert-butyl-p-cresol:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Rat): > 6,000 mg/kg<br>Method: OECD Test Guideline 401 |
| Acute dermal toxicity | : | LD50 (Rat): > 2,000 mg/kg<br>Method: OECD Test Guideline 402<br>Assessment: The substance or mixture has no acute dermal toxicity |

**Skin corrosion/irritation**

Not classified based on available information.

**Components:**

**2-(2-Butoxyethoxy)ethanol:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Method | : | OECD Test Guideline 404 |
| Result | : | Mild skin irritation |

**Propan-2-ol:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | No skin irritation |

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Method | : | OECD Test Guideline 404 |
| Result | : | No skin irritation |

**Ivermectin:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | No skin irritation |

**2,6-Di-tert-butyl-p-cresol:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Method | : | OECD Test Guideline 404 |
| Result | : | No skin irritation |
| Remarks | : | Based on data from similar materials |

**Serious eye damage/eye irritation**

Causes serious eye irritation.

**Components:**

**2-(2-Butoxyethoxy)ethanol:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | Irritation to eyes, reversing within 21 days |

**Propan-2-ol:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | Irritation to eyes, reversing within 21 days |

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Method | : | OECD Test Guideline 405 |
| Result | : | No eye irritation |

**Ivermectin:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | Mild eye irritation |

**2,6-Di-tert-butyl-p-cresol:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Method | : | OECD Test Guideline 405 |
| Result | : | No eye irritation |
| Remarks | : | Based on data from similar materials |

**Respiratory or skin sensitisation**

**Skin sensitisation**

May cause an allergic skin reaction.

**Respiratory sensitisation**

Not classified based on available information.

**Components:**

**2-(2-Butoxyethoxy)ethanol:**

| | | |
|---|---|---|
| Test Type | : | Maximisation Test |
| Exposure routes | : | Skin contact |
| Species | : | Guinea pig |
| Result | : | negative |

**Propan-2-ol:**

| | | |
|---|---|---|
| Test Type | : | Buehler Test |
| Exposure routes | : | Skin contact |
| Species | : | Guinea pig |
| Method | : | OECD Test Guideline 406 |
| Result | : | negative |

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**

| | | |
|---|---|---|
| Test Type | : | Maximisation Test |
| Exposure routes | : | Skin contact |
| Species | : | Guinea pig |
| Result | : | positive |

| | | |
|---|---|---|
| Assessment | : | Probability or evidence of skin sensitisation in humans |

**Ivermectin:**

| | | |
|---|---|---|
| Exposure routes | : | Dermal |
| Species | : | Humans |
| Result | : | Does not cause skin sensitisation. |

**2,6-Di-tert-butyl-p-cresol:**

| | | |
|---|---|---|
| Test Type | : | Human repeat insult patch test (HRIPT) |
| Exposure routes | : | Skin contact |
| Species | : | Humans |
| Result | : | negative |

**Germ cell mutagenicity**

Suspected of causing genetic defects.

**Components:**

**2-(2-Butoxyethoxy)ethanol:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Bacterial reverse mutation assay (AMES)<br>Result: negative<br><br>Test Type: In vitro mammalian cell gene mutation test<br>Result: negative<br><br>Test Type: Chromosome aberration test in vitro<br>Result: negative |
| Genotoxicity in vivo | : | Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)<br>Species: Mouse<br>Application Route: Ingestion<br>Result: negative |

**Propan-2-ol:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Bacterial reverse mutation assay (AMES)<br>Result: negative<br><br>Test Type: In vitro mammalian cell gene mutation test<br>Result: negative |
| Genotoxicity in vivo | : | Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)<br>Species: Mouse<br>Application Route: Intraperitoneal injection<br>Result: negative |

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Bacterial reverse mutation assay (AMES)<br>Method: OECD Test Guideline 471<br>Result: positive<br><br>Test Type: In vitro mammalian cell gene mutation test<br>Result: positive<br><br>Test Type: In vitro sister chromatid exchange assay in mammalian cells<br>Result: positive<br><br>Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)<br>Result: positive |
| Genotoxicity in vivo | : | Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo<br>Species: Rat<br>Application Route: Ingestion<br>Method: OECD Test Guideline 486<br>Result: negative |

| | | |
|---|---|---|
| | | Test Type: Micronucleus test<br>Species: Mouse<br>Application Route: Intraperitoneal injection<br>Result: negative<br><br>Test Type: Transgenic rodent somatic cell gene mutation assay<br>Species: Mouse<br>Application Route: Ingestion<br>Method: OECD Test Guideline 488<br>Result: positive |
| Germ cell mutagenicity- Assessment | : | Positive result(s) from in vivo mammalian somatic cell mutagenicity tests. |

**Ivermectin:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Bacterial reverse mutation assay (AMES)<br>Result: negative<br><br>Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)<br>Test system: human diploid fibroblasts<br>Result: negative<br><br>Test Type: Mouse Lymphoma<br>Result: negative |

**2,6-Di-tert-butyl-p-cresol:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Bacterial reverse mutation assay (AMES)<br>Result: negative<br><br>Test Type: In vitro mammalian cell gene mutation test<br>Result: negative<br><br>Test Type: Chromosome aberration test in vitro<br>Result: negative |
| Genotoxicity in vivo | : | Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)<br>Species: Rat<br>Application Route: Ingestion<br>Result: negative |

**Carcinogenicity**

Not classified based on available information.

**Components:**

**Propan-2-ol:**

| | | |
|---|---|---|
| Species | : | Rat |
| Application Route | : | inhalation (vapour) |
| Exposure time | : | 104 weeks |
| Method | : | OECD Test Guideline 451 |
| Result | : | negative |

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**

| | | |
|---|---|---|
| Species | : | Mouse |
| Application Route | : | Skin contact |
| Exposure time | : | 29 Months |
| Result | : | negative |

**Ivermectin:**

| | | |
|---|---|---|
| Species | : | Rat |
| Application Route | : | Oral |
| NOAEL | : | 1.5 mg/kg body weight |
| Result | : | negative |
| Remarks | : | Based on data from similar materials |

| | | |
|---|---|---|
| Species | : | Mouse |
| Application Route | : | Oral |
| NOAEL | : | 2.0 mg/kg body weight |
| Result | : | negative |
| Remarks | : | Based on data from similar materials |

**2,6-Di-tert-butyl-p-cresol:**

| | | |
|---|---|---|
| Species | : | Rat |
| Application Route | : | Ingestion |
| Exposure time | : | 22 Months |
| Result | : | negative |

**Reproductive toxicity**

Not classified based on available information.

**Components:**

**2-(2-Butoxyethoxy)ethanol:**

| | | |
|---|---|---|
| Effects on fertility | : | Test Type: One-generation reproduction toxicity study<br>Species: Rat<br>Application Route: Ingestion<br>Method: OECD Test Guideline 415<br>Result: negative |
| Effects on foetal development | : | Test Type: Embryo-foetal development<br>Species: Rat<br>Application Route: Ingestion |

Result: negative

**Propan-2-ol:**

| | | |
|---|---|---|
| Effects on fertility | : | Test Type: Two-generation reproduction toxicity study<br>Species: Rat<br>Application Route: Ingestion<br>Result: negative |
| Effects on foetal development | : | Test Type: Embryo-foetal development<br>Species: Rat<br>Application Route: Ingestion<br>Result: negative |

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**

| | | |
|---|---|---|
| Effects on foetal development | : | Test Type: Embryo-foetal development<br>Species: Rat<br>Application Route: Ingestion<br>Method: OECD Test Guideline 414<br>Result: negative |

**Ivermectin:**

| | | |
|---|---|---|
| Effects on fertility | : | Test Type: Fertility<br>Species: Rat<br>Application Route: Oral<br>Fertility: NOAEL: 0.6 mg/kg body weight<br>Result: Animal testing did not show any effects on fertility. |
| Effects on foetal development | : | Test Type: Development<br>Species: Mouse<br>Application Route: Oral<br>Developmental Toxicity: NOAEL: 0.2 mg/kg body weight<br>Result: Teratogenic effects, Embryotoxic effects and adverse effects on the offspring were detected only at high maternally toxic doses<br><br>Test Type: Development<br>Species: Rat<br>Application Route: Oral<br>Developmental Toxicity: LOAEL: 0.4 mg/kg body weight<br>Result: Embryotoxic effects and adverse effects on the offspring were detected.<br>Remarks: The mechanism or mode of action may not be relevant in humans.<br><br>Test Type: Development<br>Species: Rabbit<br>Application Route: Oral<br>Result: Teratogenic effects, Embryotoxic effects and adverse effects on the offspring were detected only at high maternally |

toxic doses

**2,6-Di-tert-butyl-p-cresol:**

| | | |
|---|---|---|
| Effects on fertility | : | Test Type: Two-generation reproduction toxicity study<br>Species: Rat<br>Application Route: Ingestion<br>Result: negative |
| Effects on foetal development | : | Test Type: Embryo-foetal development<br>Species: Rat<br>Application Route: Ingestion<br>Result: negative |

**STOT - single exposure**

May cause drowsiness or dizziness.

**Components:**

**Propan-2-ol:**

| | | |
|---|---|---|
| Assessment | : | May cause drowsiness or dizziness. |

**Ivermectin:**

| | | |
|---|---|---|
| Target Organs | : | Central nervous system |
| Assessment | : | Causes damage to organs. |

**STOT - repeated exposure**

Not classified based on available information.

**Components:**

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**

| | | |
|---|---|---|
| Exposure routes | : | Ingestion |
| Target Organs | : | nasal cavity |
| Assessment | : | Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw. |

**Ivermectin:**

| | | |
|---|---|---|
| Target Organs | : | Central nervous system |
| Assessment | : | Causes damage to organs through prolonged or repeated exposure. |

**2,6-Di-tert-butyl-p-cresol:**

| | | |
|---|---|---|
| Assessment | : | No significant health effects observed in animals at concentrations of 100 mg/kg bw or less. |

**Repeated dose toxicity**

**Components:**

**2-(2-Butoxyethoxy)ethanol:**

| | | |
|---|---|---|
| Species | : | Rat |
| NOAEL | : | 250 mg/kg |
| LOAEL | : | 1,000 mg/kg |
| Application Route | : | Ingestion |
| Exposure time | : | 90 Days |
| Method | : | OECD Test Guideline 408 |

| | | |
|---|---|---|
| Species | : | Rat |
| NOAEL | : | >= 0.094 mg/l |
| Application Route | : | inhalation (vapour) |
| Exposure time | : | 90 Days |
| Method | : | OECD Test Guideline 413 |

| | | |
|---|---|---|
| Species | : | Rat |
| NOAEL | : | >= 2,000 mg/kg |
| Application Route | : | Skin contact |
| Exposure time | : | 90 Days |

**Propan-2-ol:**

| | | |
|---|---|---|
| Species | : | Rat |
| NOAEL | : | 12.5 mg/l |
| Application Route | : | inhalation (vapour) |
| Exposure time | : | 104 Weeks |

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**

| | | |
|---|---|---|
| Species | : | Rat |
| NOAEL | : | 5 mg/kg |
| LOAEL | : | 50 mg/kg |
| Application Route | : | Ingestion |
| Exposure time | : | 90 Days |
| Method | : | OECD Test Guideline 408 |

**Ivermectin:**

| | | |
|---|---|---|
| Species | : | Dog |
| NOAEL | : | 0.5 mg/kg |
| LOAEL | : | 1 mg/kg |
| Application Route | : | Oral |
| Exposure time | : | 14 Weeks |
| Target Organs | : | Central nervous system |
| Symptoms | : | Dilatation of the pupil, Tremors, Lack of coordination, anorexia |

| | | |
|---|---|---|
| Species | : | Monkey |
| NOAEL | : | 1.2 mg/kg |
| Application Route | : | Oral |
| Exposure time | : | 2 Weeks |

| | | |
|---|---|---|
| Remarks | : | No significant adverse effects were reported |

| | | |
|---|---|---|
| Species | : | Rat |
| NOAEL | : | 0.4 mg/kg |
| LOAEL | : | 0.8 mg/kg |
| Application Route | : | Oral |
| Exposure time | : | 3 Months |
| Target Organs | : | spleen, Bone marrow, Kidney |

**2,6-Di-tert-butyl-p-cresol:**

| | | |
|---|---|---|
| Species | : | Rat |
| NOAEL | : | 25 mg/kg |
| Application Route | : | Ingestion |
| Exposure time | : | 22 Months |

**Aspiration toxicity**

Not classified based on available information.

**Experience with human exposure**

**Components:**

**Ivermectin:**

| | | |
|---|---|---|
| Skin contact | : | Remarks: Can be absorbed through skin. |
| Eye contact | : | Remarks: May irritate eyes. |
| Ingestion | : | Symptoms: Drowsiness, Dilatation of the pupil, Tremors, Vomiting, anorexia, Lack of coordination |

## SECTION 12: Ecological information

### 12.1 Toxicity

**Components:**

**2-(2-Butoxyethoxy)ethanol:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Lepomis macrochirus (Bluegill sunfish)): 1,300 mg/l<br>Exposure time: 96 h |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): > 100 mg/l<br>Exposure time: 48 h<br>Method: OECD Test Guideline 202 |
| Toxicity to algae/aquatic plants | : | ErC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l<br>Exposure time: 96 h<br>Method: OECD Test Guideline 201<br><br>NOEC (Desmodesmus subspicatus (green algae)): >= 100 mg/l<br>Exposure time: 96 h<br>Method: OECD Test Guideline 201 |

| | | |
|---|---|---|
| Toxicity to microorganisms | : | EC10 : > 1,995 mg/l<br>Exposure time: 30 min |

**Propan-2-ol:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Pimephales promelas (fathead minnow)): 9,640 mg/l<br>Exposure time: 96 h |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): > 10,000 mg/l<br>Exposure time: 24 h |
| Toxicity to microorganisms | : | EC50 (Pseudomonas putida): > 1,050 mg/l<br>Exposure time: 16 h |

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Oncorhynchus mykiss (rainbow trout)): 24 mg/l<br>Exposure time: 96 h<br>Method: OECD Test Guideline 203 |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 40 mg/l<br>Exposure time: 48 h<br>Method: OECD Test Guideline 202 |
| Toxicity to algae/aquatic plants | : | ErC50 (Raphidocelis subcapitata (freshwater green alga)): > 110 mg/l<br>Exposure time: 72 h<br>Method: OECD Test Guideline 201<br><br>NOEC (Raphidocelis subcapitata (freshwater green alga)): 30 mg/l<br>Exposure time: 72 h<br>Method: OECD Test Guideline 201 |
| Toxicity to microorganisms | : | EC10 (activated sludge): 409 mg/l<br>Exposure time: 3 h<br>Method: OECD Test Guideline 209 |

**Ivermectin:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Oncorhynchus mykiss (rainbow trout)): 0.003 mg/l<br>Exposure time: 96 h<br><br>LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.0048 mg/l<br>Exposure time: 96 h |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 0.000025 mg/l<br>Exposure time: 48 h |
| Toxicity to algae/aquatic plants | : | EC50 (Pseudokirchneriella subcapitata (green algae)): > 9.1 mg/l<br>Exposure time: 72 h |

| | | |
|---|---|---|
| | | Method: OECD Test Guideline 201<br><br>NOEC (Pseudokirchneriella subcapitata (green algae)): 9.1 mg/l<br>Exposure time: 72 h<br>Method: OECD Test Guideline 201 |
| M-Factor (Acute aquatic toxicity) | : | 10,000 |
| M-Factor (Chronic aquatic toxicity) | : | 10,000 |

**2,6-Di-tert-butyl-p-cresol:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Danio rerio (zebra fish)): > 0.57 mg/l<br>Exposure time: 96 h<br>Method: Directive 67/548/EEC, Annex V, C.1. |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 0.48 mg/l<br>Exposure time: 48 h<br>Method: OECD Test Guideline 202 |
| Toxicity to algae/aquatic plants | : | ErC50 (Pseudokirchneriella subcapitata (green algae)): > 0.24 mg/l<br>Exposure time: 72 h<br>Method: OECD Test Guideline 201<br><br>NOEC (Pseudokirchneriella subcapitata (green algae)): 0.24 mg/l<br>Exposure time: 72 h<br>Method: OECD Test Guideline 201 |
| M-Factor (Acute aquatic toxicity) | : | 1 |
| Toxicity to microorganisms | : | EC50 : > 10,000 mg/l<br>Exposure time: 3 h<br>Method: OECD Test Guideline 209 |
| Toxicity to fish (Chronic toxicity) | : | NOEC: 0.053 mg/l<br>Exposure time: 30 d<br>Species: Oryzias latipes (Japanese medaka)<br>Method: OECD Test Guideline 210 |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC: 0.316 mg/l<br>Exposure time: 21 d<br>Species: Daphnia magna (Water flea) |
| M-Factor (Chronic aquatic toxicity) | : | 1 |

### 12.2 Persistence and degradability

**Components:**

**2-(2-Butoxyethoxy)ethanol:**

| | | |
|---|---|---|
| Biodegradability | : | Result: Readily biodegradable.<br>Biodegradation: 85 %<br>Exposure time: 28 d<br>Method: OECD Test Guideline 301C |

**Propan-2-ol:**

| | | |
|---|---|---|
| Biodegradability | : | Result: rapidly degradable |
| BOD/COD | : | BOD: 1,19 (BOD5)<br>COD: 2,23<br>BOD/COD: 53 % |

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**

| | | |
|---|---|---|
| Biodegradability | : | Result: Not readily biodegradable.<br>Biodegradation: 71 %<br>Exposure time: 28 d<br>Method: OECD Test Guideline 301B |

**Ivermectin:**

| | | |
|---|---|---|
| Biodegradability | : | Result: Not readily biodegradable.<br>Biodegradation: 50 %<br>Exposure time: 240 d |

**2,6-Di-tert-butyl-p-cresol:**

| | | |
|---|---|---|
| Biodegradability | : | Result: Not readily biodegradable.<br>Biodegradation: 4.5 %<br>Exposure time: 28 d<br>Method: OECD Test Guideline 301C |

### 12.3 Bioaccumulative potential

**Components:**

**2-(2-Butoxyethoxy)ethanol:**

| | | |
|---|---|---|
| Partition coefficient: n-octanol/water | : | log Pow: 1 |

**Propan-2-ol:**

| | | |
|---|---|---|
| Partition coefficient: n-octanol/water | : | log Pow: 0.05 |

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**

| | | |
|---|---|---|
| Partition coefficient: n-octanol/water | : | log Pow: 1.34<br>Method: OECD Test Guideline 107 |

**Ivermectin:**

| | | |
|---|---|---|
| Bioaccumulation | : | Bioconcentration factor (BCF): 74 |
| Partition coefficient: n-octanol/water | : | log Pow: 3.22 |

**2,6-Di-tert-butyl-p-cresol:**

| | | |
|---|---|---|
| Bioaccumulation | : | Species: Cyprinus carpio (Carp)<br>Bioconcentration factor (BCF): 330 - 1,800 |
| Partition coefficient: n-octanol/water | : | log Pow: 5.1 |

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

**Product:**

| | | |
|---|---|---|
| Assessment | : | This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. |

### 12.6 Other adverse effects

**Product:**

| | | |
|---|---|---|
| Endocrine disrupting potential | : | This substance/mixture does not contain components considered to have endocrine disrupting properties for environment according to UK REACH Article 57(f). |

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

| | | |
|---|---|---|
| Product | : | Dispose of in accordance with local regulations.<br>According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.<br>Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.<br>Do not dispose of waste into sewer. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal.<br>Empty containers retain residue and can be dangerous.<br>Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death.<br>If not otherwise specified: Dispose of as unused product. |

## SECTION 14: Transport information

### 14.1 UN number

| | | |
|---|---|---|
| **ADN** | : | UN 1993 |
| **ADR** | : | UN 1993 |
| **RID** | : | UN 1993 |
| **IMDG** | : | UN 1993 |
| **IATA** | : | UN 1993 |

### 14.2 UN proper shipping name

| | | |
|---|---|---|
| **ADN** | : | FLAMMABLE LIQUID, N.O.S.<br>(Propan-2-ol) |
| **ADR** | : | FLAMMABLE LIQUID, N.O.S.<br>(Propan-2-ol) |
| **RID** | : | FLAMMABLE LIQUID, N.O.S.<br>(Propan-2-ol) |
| **IMDG** | : | FLAMMABLE LIQUID, N.O.S.<br>(Propan-2-ol, Ivermectin, 2,6-Di-tert-butyl-p-cresol) |
| **IATA** | : | Flammable liquid, n.o.s.<br>(Propan-2-ol) |

### 14.3 Transport hazard class(es)

| | | Class | Subsidiary risks |
|---|---|---|---|
| **ADN** | : | 3 | |
| **ADR** | : | 3 | |
| **RID** | : | 3 | |
| **IMDG** | : | 3 | |
| **IATA** | : | 3 | |

### 14.4 Packing group

**ADN**

| | | |
|---|---|---|
| Packing group | : | III |
| Classification Code | : | F1 |
| Hazard Identification Number | : | 30 |
| Labels | : | 3 |

**ADR**

| | | |
|---|---|---|
| Packing group | : | III |
| Classification Code | : | F1 |
| Hazard Identification Number | : | 30 |
| Labels | : | 3 |
| Tunnel restriction code | : | (D/E) |

**RID**

| | | |
|---|---|---|
| Packing group | : | III |
| Classification Code | : | F1 |
| Hazard Identification Number | : | 30 |
| Labels | : | 3 |

**IMDG**

| | | |
|---|---|---|
| Packing group | : | III |
| Labels | : | 3 |
| EmS Code | : | F-E, S-E |

**IATA (Cargo)**

| | | |
|---|---|---|
| Packing instruction (cargo aircraft) | : | 366 |
| Packing instruction (LQ) | : | Y344 |
| Packing group | : | III |
| Labels | : | Flammable Liquids |

**IATA (Passenger)**

| | | |
|---|---|---|
| Packing instruction (passenger aircraft) | : | 355 |
| Packing instruction (LQ) | : | Y344 |
| Packing group | : | III |
| Labels | : | Flammable Liquids |

### 14.5 Environmental hazards

**ADN**

| | | |
|---|---|---|
| Environmentally hazardous | : | yes |

**ADR**

| | | |
|---|---|---|
| Environmentally hazardous | : | yes |

**RID**

| | | |
|---|---|---|
| Environmentally hazardous | : | yes |

**IMDG**

| | | |
|---|---|---|
| Marine pollutant | : | yes |

### 14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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

| | | |
|---|---|---|
| Remarks | : | Not applicable for product as supplied. |

## SECTION 15: Regulatory information

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

Relevant EU provisions transposed through retained EU law

| | | |
|---|---|---|
| UK REACH List of restrictions (Annex 17) | : | Conditions of restriction for the following entries should be considered:<br>Number on list 3 |
| UK REACH List of restrictions (Annex 17) | | Number on list 55: 2-(2-Butoxyethoxy)ethanol |
| UK REACH List of restrictions (Annex 17) | | Substance(s) or mixture(s) are listed here according to their appearance in the regulation, irrespective of their use/purpose or the conditions of the restriction. Please refer to the conditions in corresponding Regulation to determine whether an entry is applicable to the placing on the market or not. |
| UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation | : | Not applicable |
| The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain) | : | Not applicable |
| Regulation (EC) on substances that deplete the ozone layer | : | Not applicable |
| UK REACH List of substances subject to authorisation (Annex XIV) | : | Not applicable |
| GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation | : | Not applicable |

Control of Major Accident Hazards Regulations 2015 (COMAH)

| | | Quantity 1 | Quantity 2 |
|---|---|---|---|
| P5c | FLAMMABLE LIQUIDS | 5,000 t | 50,000 t |
| E1 | ENVIRONMENTAL HAZARDS | 100 t | 200 t |

**Other regulations:**

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to new and expectant mothers at work contained in Regulation 16 to 18) and of the Pregnant Workers Directive 92/85/EEC.
Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to protection of young people at work contained in Regulation 19) and of Directive 94/33/EC on the protection of young people at work.

**The components of this product are reported in the following inventories:**

| | | |
|---|---|---|
| AICS | : | not determined |
| DSL | : | not determined |
| IECSC | : | not determined |

### 15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

| | | |
|---|---|---|
| Other information | : | Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines. |

**Full text of H-Statements**

| | | |
|---|---|---|
| H225 | : | Highly flammable liquid and vapour. |
| H300 | : | Fatal if swallowed. |
| H311 | : | Toxic in contact with skin. |
| H317 | : | May cause an allergic skin reaction. |
| H319 | : | Causes serious eye irritation. |
| H336 | : | May cause drowsiness or dizziness. |
| H341 | : | Suspected of causing genetic defects. |
| H370 | : | Causes damage to organs if swallowed. |
| H372 | : | Causes damage to organs through prolonged or repeated exposure if swallowed. |
| 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. |
| H412 | : | Harmful to aquatic life with long lasting effects. |

**Full text of other abbreviations**

| | | |
|---|---|---|
| Acute Tox. | : | Acute toxicity |
| Aquatic Acute | : | Short-term (acute) aquatic hazard |
| Aquatic Chronic | : | Long-term (chronic) aquatic hazard |
| Eye Irrit. | : | Eye irritation |
| Flam. Liq. | : | Flammable liquids |
| Muta. | : | Germ cell mutagenicity |
| Skin Sens. | : | Skin sensitisation |
| STOT RE | : | Specific target organ toxicity - repeated exposure |
| STOT SE | : | Specific target organ toxicity - single exposure |
| 2006/15/EC | : | Europe. Indicative occupational exposure limit values |
| GB EH40 | : | UK. EH40 WEL - Workplace Exposure Limits |
| 2006/15/EC / TWA | : | Limit Value - eight hours |
| 2006/15/EC / STEL | : | Short term exposure limit |
| GB EH40 / TWA | : | Long-term exposure limit (8-hour TWA reference period) |
| GB EH40 / STEL | : | Short-term exposure limit (15-minute reference period) |

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergen-

cy Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

**Further information**

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|---|---|---|
| Sources of key data used to compile the Safety Data Sheet | : | Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/ |

| **Classification of the mixture:** | | **Classification procedure:** |
|---|---|---|
| Flam. Liq. 3 | H226 | Based on product data or assessment |
| Eye Irrit. 2 | H319 | Calculation method |
| Skin Sens. 1 | H317 | Calculation method |
| Muta. 2 | H341 | Calculation method |
| STOT SE 3 | H336 | Calculation method |
| Aquatic Acute 1 | H400 | Calculation method |
| Aquatic Chronic 1 | H410 | Calculation method |

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text.

Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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