SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Benzyl Alcohol Formulation

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

1.1 Product identifier
   Trade name : Benzyl Alcohol Formulation

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Use of the Substance/Mixture : Veterinary product

1.3 Details of the supplier of the safety data sheet
   Company : MSD
              Kilsheelan
              Clonmel Tipperary, IE
   Telephone : 353-51-601000
   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)
   Not a hazardous substance or mixture.

2.2 Label elements
   Labelling (REGULATION (EC) No 1272/2008)
   Not a hazardous substance or mixture.

   Additional Labelling
   EUH210 Safety data sheet available on request.

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.

   Ecological information: The substance/mixture does not contain components considered to have
   endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation
   (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
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</thead>
<tbody>
<tr>
<td>Benzyl alcohol</td>
<td>100-51-6</td>
<td>202-859-9</td>
<td>603-057-00-5</td>
<td>Acute Tox. 4; H302</td>
<td>&gt;= 1 - &lt; 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 4; H332</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2; H319</td>
<td></td>
</tr>
</tbody>
</table>

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

Protection of first-aiders: No special precautions are necessary for first aid responders.

If inhaled: If inhaled, remove to fresh air. Get medical attention if symptoms occur.

In case of skin contact: Wash with water and soap as a precaution. Get medical attention if symptoms occur.

In case of eye contact: Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.

If swallowed: If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth thoroughly with water.

4.2 Most important symptoms and effects, both acute and delayed

None known.

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
- Alcohol-resistant foam
- Carbon dioxide (CO2)
- Dry chemical

Unsuitable extinguishing media:
- None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting:
- 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:
- Wear self-contained breathing apparatus for firefighting if necessary. 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:
- 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.
- Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up:
- Soak up with inert absorbent material.
- 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: Use only with adequate ventilation.
Advice on safe handling: Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment. 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. Wash contaminated clothing before re-use. 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 in accordance with the particular national regulations.
Advice on common storage: Do not store with the following product types: Strong oxidizing agents.

7.3 Specific end use(s)
Specific use(s): No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:
Benzyl Alcohol Formulation

Substance name | End Use | Exposure routes | Potential health effects | Value  
---|---|---|---|---
Benzyl alcohol | Workers | Inhalation | Long-term systemic effects | 22 mg/m³  
Workers | Inhalation | Acute systemic effects | 110 mg/m³  
Workers | Skin contact | Long-term systemic effects | 8 mg/kg bw/day  
Workers | Skin contact | Acute systemic effects | 40 mg/kg bw/day  
Consumers | Inhalation | Long-term systemic effects | 5.4 mg/m³  
Consumers | Inhalation | Acute systemic effects | 27 mg/m³  
Consumers | Skin contact | Long-term systemic effects | 4 mg/kg bw/day  
Consumers | Skin contact | Acute systemic effects | 20 mg/kg bw/day  
Consumers | Ingestion | Long-term systemic effects | 4 mg/kg bw/day  
Consumers | Ingestion | Acute systemic effects | 20 mg/kg bw/day  

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

| Substance name | Environmental Compartment | Value  
---|---|---
Benzyl alcohol | Fresh water | 1 mg/l  
 | Marine water | 0.1 mg/l  
 | Intermittent use/release | 2.3 mg/l  
 | Sewage treatment plant | 39 mg/l  
 | Fresh water sediment | 5.27 mg/kg  
 | Marine sediment | 0.527 mg/kg  
 | Soil | 0.456 mg/kg  

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.

Personal protective equipment

Eye protection: Wear safety glasses with side shields or goggles. If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles. 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.
Skin and body protection : Work uniform or laboratory coat. Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces. 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. Equipment should conform to NS EN 14387
Filter type : Organic vapour type (A)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : Aqueous solution
Colour : colourless
Odour : No data available
Odour Threshold : No data available
Melting point/freezing point : No data available
Initial boiling point and boiling range : No data available
Flammability (solid, gas) : Not applicable
Flammability (liquids) : No data available
Upper explosion limit / Upper flammability limit : No data available
Lower explosion limit / Lower flammability limit : No data available
Flash point : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
pH : No data available
Viscosity : No data available
Viscosity, kinematic : No data available
Solubility(ies) : soluble
Water solubility : soluble
Partition coefficient: n-octanol/water : Not applicable
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   Date of first issue: 29.07.2019

Vapour pressure : No data available
Relative density : No data available
Density : 1 g/cm³
Relative vapour density : No data available
Particle characteristics
   Particle size : Not applicable

9.2 Other information
   Explosives : Not explosive
   Oxidizing properties : The substance or mixture is not classified as oxidizing.
   Evaporation rate : No data available
   Molecular weight : No data available

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 : Can react with strong oxidizing agents.

10.4 Conditions to avoid
   Conditions to avoid : None known.

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 hazard classes as defined in Regulation (EC) No 1272/2008
   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 inhalation toxicity:** Acute toxicity estimate: > 5 mg/l
  Exposure time: 4 h
  Test atmosphere: dust/mist
  Method: Calculation method

**Components:**

- **Benzyl alcohol:**
  - Acute oral toxicity: LD50 (Rat): 1.620 mg/kg
    Acute toxicity estimate: 1.620 mg/kg
    Method: Calculation method
  - Acute inhalation toxicity: LC50 (Rat): > 4,178 mg/l
    Exposure time: 4 h
    Test atmosphere: dust/mist
    Method: OECD Test Guideline 403

**Skin corrosion/irritation**
Not classified based on available information.

**Components:**

- **Benzyl alcohol:**
  - Species: Rabbit
  - Method: OECD Test Guideline 404
  - Result: No skin irritation

**Serious eye damage/eye irritation**
Not classified based on available information.

**Components:**

- **Benzyl alcohol:**
  - Species: Rabbit
  - Method: OECD Test Guideline 405
  - Result: Irritation to eyes, reversing within 21 days

**Respiratory or skin sensitisation**

**Skin sensitisation**
Not classified based on available information.

**Respiratory sensitisation**
Not classified based on available information.
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Components:
Benzyl alcohol:
Test Type: Maximisation Test
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative

Germ cell mutagenicity
Not classified based on available information.

Components:
Benzyl alcohol:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Genotoxicity in vivo: Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative

Carcinogenicity
Not classified based on available information.

Components:
Benzyl alcohol:
Species: Mouse
Application Route: Ingestion
Exposure time: 103 weeks
Method: OECD Test Guideline 451
Result: negative

Reproductive toxicity
Not classified based on available information.

Components:
Benzyl alcohol:
Effects on fertility: Test Type: Fertility/early embryonic development
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development: Test Type: Embryo-foetal development
Species: Mouse
Application Route: Ingestion
Result: negative
## STOT - single exposure
Not classified based on available information.

## STOT - repeated exposure
Not classified based on available information.

### Repeated dose toxicity

#### Components:

**Benzyl alcohol:**
- Species: Rat
- NOAEL: 1,072 mg/l
- Application Route: inhalation (dust/mist/fume)
- Exposure time: 28 Days
- Method: OECD Test Guideline 412

### Aspiration toxicity
Not classified based on available information.

### Endocrine disrupting properties

#### Product:
Assessment: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Components:

**Benzyl alcohol:**
- Toxicity to fish: LC50 (Pimephales promelas (fathead minnow)): 460 mg/l
  Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 230 mg/l
  Exposure time: 48 h
  Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants: EC50 (Pseudokirchneriella subcapitata (green algae)): 770 mg/l
  Exposure time: 72 h
  Method: OECD Test Guideline 201
- NOEC (Pseudokirchneriella subcapitata (green algae)): 310 mg/l
  Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): NOEC: 51 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

12.2 Persistence and degradability

Components:
Benzyl alcohol: Biodegradability
Result: Readily biodegradable.
Biodegradation: 92 - 96%
Exposure time: 14 d

12.3 Bioaccumulative potential

Components:
Benzyl alcohol:
Partition coefficient: n-octanol/water
log Pow: 1.05

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 Endocrine disrupting properties

Product:
Assessment: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product: Dispose of in accordance with local regulations.
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number or ID number
Not regulated as a dangerous good

14.2 UN proper shipping name
Not regulated as a dangerous good

14.3 Transport hazard class(es)
Not regulated as a dangerous good

14.4 Packing group
Not regulated as a dangerous good

14.5 Environmental hazards
Not regulated as a dangerous good

14.6 Special precautions for user
Not applicable

14.7 Maritime transport in bulk according to IMO instruments
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
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII): Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59): Not applicable
REACH - List of substances subject to authorisation (Annex XIV): Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer: Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast): Not applicable
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals: Not applicable
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<thead>
<tr>
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<tr>
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**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.

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**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**

- **H302**: Harmful if swallowed.
- **H319**: Causes serious eye irritation.
- **H332**: Harmful if inhaled.

**Full text of other abbreviations**

- **Acute Tox.**: Acute toxicity
- **Eye Irrit.**: Eye irritation

- **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;
- **AIIC**: Australian Inventory of Industrial Chemicals;
- **ASTM**: American Society for the Testing of Materials;
- **bw**: Body weight;
- **CLP**: Classification Labelling Packaging Regulation;
- **EC**: European Community number;
- **ECx**: Concentration associated with x% response;
- **ELx**: Loading rate associated with x% response;
- **EmS**: Emergency 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.
- **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;
- **RID**: Regulations concerning the International Carriage of Dangerous Goods by Rail;
- **SADT**: Self-Accelerating Decomposition Temperature;
- **SDS**: Safety Data Sheet;
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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

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.

NO / EN