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

BIOPOWER
Version 9 / IRL
1/10
Revision Date: 09.08.2018
Print Date: 05.09.2018

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier
Trade name BIOPower
Product code (UVP) 05815990

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

1.3 Details of the supplier of the safety data sheet
Supplier Bayer CropScience Ltd
Bayer Ltd
The Atrium, Blackthorn Road
Sandyford
Dublin 18
Ireland
Telephone +353-1-2999313
Responsible Department Email: ukinfo@bayercropscience.com

1.4 Emergency telephone no.
Emergency telephone no. 00800 1020 3333 (24 hr)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Classification in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.
Skin irritation: Category 2
H315 Causes skin irritation.
Eye irritation: Category 2
H319 Causes serious eye irritation.
Chronic aquatic toxicity: Category 3
H412 Harmful to aquatic life with long lasting effects.

2.2 Label elements
Labelling in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.
Hazard label for supply/use required.
Hazardous components which must be listed on the label:
- Alkylethersulfate, sodium salt
Signal word: Warning

Hazard statements

- **H315**: Causes skin irritation.
- **H319**: Causes serious eye irritation.
- **H412**: Harmful to aquatic life with long lasting effects.
- **EUH401**: To avoid risks to human health and the environment, comply with the instructions for use.
- **EUH208**: Contains 1,2-benzisothiazolin-3-one. May produce an allergic reaction.

Precautionary statements

- **P280**: Wear protective gloves/ protective clothing/ eye protection/ face protection.
- **P308 + P311**: IF exposed or concerned: Call a POISON CENTER/ doctor/ physician.
- **P501**: Dispose of contents/container to a licensed hazardous waste disposal contractor or collection site, except for triple rinsed empty containers which can be disposed of as non-hazardous waste.

2.3 Other hazards

No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature

Soluble concentrate (SL)
Alkylethersulfate, sodium salt 276,5 g/l

Hazardous components

Hazard statements according to Regulation (EC) No. 1272/2008

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS-No. / EC-No. / REACH Reg. No.</th>
<th>Classification</th>
<th>Conc. [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkylethersulfate, sodium salt</td>
<td>68891-38-3 500-234-8 01-2119488639-16-XXXX</td>
<td>Eye Dam. 1, H318 Skin Irrit. 2, H315 Aquatic Chronic 3, H412</td>
<td>27</td>
</tr>
<tr>
<td>1,2-Benzisothiazolin-3(2H)-one</td>
<td>2634-33-5 220-120-9</td>
<td>Acute Tox. 4, H302 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Acute 1, H400 Eye Dam. 1, H318</td>
<td>&gt; 0.005 – &lt; 0.05</td>
</tr>
</tbody>
</table>

Further information

For the full text of the H-Statements mentioned in this Section, see Section 16.
SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.

Inhalation
Move to fresh air. Keep patient warm and at rest. Call a physician or poison control center immediately.

Skin contact
Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.

Ingestion
Do NOT induce vomiting. Rinse mouth. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms
No symptoms known or expected.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment
Treat symptomatically. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. There is no specific antidote.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

In the event of fire the following may be released: Carbon monoxide (CO), Sulphur oxides

5.3 Advice for firefighters

Special protective equipment for firefighters
In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.

Further information
Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.
SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Precautions
Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.

6.2 Environmental precautions
Do not allow to get into surface water, drains and ground water. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Clean contaminated floors and objects thoroughly, observing environmental regulations. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling
No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice. Ensure adequate ventilation.

Advice on protection against fire and explosion
Keep away from heat and sources of ignition.

Hygiene measures
Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers
Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in a place accessible by authorized persons only. Protect from freezing. Keep away from direct sunlight.

Advice on common storage
Keep away from food, drink and animal feedingstuffs.

7.3 Specific end use(s)
Refer to the label and/or leaflet.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
No known occupational limit values.

8.2 Exposure controls
### Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

#### Respiratory protection
Respiratory protection is not required under anticipated circumstances of exposure.
Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

#### Hand protection
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

<table>
<thead>
<tr>
<th>Material</th>
<th>Nitrile rubber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate of permeability</td>
<td>&gt; 480 min</td>
</tr>
<tr>
<td>Glove thickness</td>
<td>&gt; 0.4 mm</td>
</tr>
<tr>
<td>Protective index</td>
<td>Class 6</td>
</tr>
<tr>
<td>Directive</td>
<td>Protective gloves complying with EN 374.</td>
</tr>
</tbody>
</table>

#### Eye protection
Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

#### Skin and body protection
Wear standard coveralls and Category 3 Type 6 suit.
If there is a risk of significant exposure, consider a higher protective type suit.
Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.
If chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer.

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### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form</strong></td>
<td>Liquid, slightly turbid</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>colourless</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>slightly acidic</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>4.0 - 7.0 at 100 % (23 °C)</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>&gt; 100 °C</td>
</tr>
<tr>
<td></td>
<td>No flash point - Determination conducted up to the boiling point.</td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>ca. 1.03 g/cm³ at 20 °C</td>
</tr>
</tbody>
</table>
Water solubility: miscible in all proportions
Partition coefficient: n-octanol/water: Alkylethersulfate, sodium salt: log Pow: 0.3
Viscosity, dynamic: <= 300 mPa.s at 20 °C
Surface tension: 27 mN/m at 25 °C
9.2 Other information: Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity
Thermal decomposition: Stable under normal conditions.
10.2 Chemical stability: Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions: No hazardous reactions when stored and handled according to prescribed instructions.
10.4 Conditions to avoid: Extremes of temperature and direct sunlight.
10.5 Incompatible materials: Store only in the original container.
10.6 Hazardous decomposition products: No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute oral toxicity: ATE (Mix) > 2,000 mg/kg
Calculation method: Acute toxicity estimate

Acute inhalation toxicity: During intended and foreseen applications, no respirable aerosol is formed.

Acute dermal toxicity: ATE (Mix) 2,000 mg/kg
Calculation method

Skin corrosion/irritation: Irritating to skin. (Rabbit)
Information refers to the main component.

Serious eye damage/eye irritation: Irritating to eyes. (Rabbit)
Test conducted with a similar formulation.

Respiratory or skin sensitisation: Non-sensitizing. (Guinea pig)
OECD Test Guideline 406, Magnusson & Kligman test
Information refers to the main component.

Assessment STOT Specific target organ toxicity – single exposure
Alkylethersulfate, sodium salt: Based on available data, the classification criteria are not met.
Assessment STOT Specific target organ toxicity – repeated exposure
Alkylethersulfate, sodium salt did not cause specific target organ toxicity in experimental animal studies.

Assessment mutagenicity
Alkylethersulfate, sodium salt was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity
Alkylethersulfate, sodium salt was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction
Alkylethersulfate, sodium salt did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity
Alkylethersulfate, sodium salt did not cause developmental toxicity in rats and rabbits.

Aspiration hazard
Based on available data, the classification criteria are not met.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity
Toxicity to fish
LC50 (Danio rerio (Zebra fish)) 7.1 mg/l
Exposure time: 96 h
Information refers to the main component.

Toxicity to aquatic invertebrates
EC50 (Daphnia magna (Water flea)) 7.2 mg/l
Exposure time: 48 h
Information refers to the main component.

Toxicity to aquatic plants
NOEC (Desmodesmus subspicatus (green algae)) 0.93 mg/l
Exposure time: 72 h
Information refers to the main component.

EC50 (Desmodesmus subspicatus (green algae)) 27 mg/l
Exposure time: 72 h
Information refers to the main component.

12.2 Persistence and degradability
Biodegradability
Alkylethersulfate, sodium salt: rapidly biodegradable

Koc
Alkylethersulfate, sodium salt: No data available

12.3 Bioaccumulative potential
Bioaccumulation
Alkylethersulfate, sodium salt: Does not bioaccumulate.

12.4 Mobility in soil
Mobility in soil
Alkylethersulfate, sodium salt: soluble in water

12.5 Results of PBT and vPvB assessment
PBT and vPvB assessment
Alkylethersulfate, sodium salt: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not
12.6 Other adverse effects

Additional ecological information
No other effects to be mentioned.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines.

Contaminated packaging
Small containers (< 10 l or < 10 kg) should be rinsed thoroughly using an integrated pressure rinsing device, or, by manually rinsing three times. Add washings to sprayer at time of filling. Dispose of empty and cleaned packaging safely. Follow advice on product label and/or leaflet.

Waste key for the unused product 02 01 08* agrochemical waste containing hazardous substances

SECTION 14: TRANSPORT INFORMATION

According to ADN/ADR/RID/IMDG/IATA not classified as dangerous goods.

This classification is in principle not valid for carriage by tank vessel on inland waterways. Please refer to the manufacturer for further information.

14.1 – 14.5 Not applicable.

14.6 Special precautions for user
See sections 6 to 8 of this Safety Data Sheet.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
No transport in bulk according to the IBC Code.

SECTION 15: REGULATORY INFORMATION

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

Republic of Ireland Regulations
This material may be subject to some or all of the following regulations (and any subsequent amendments). Users must ensure that any uses and restrictions as indicated on the label and/or leaflet are followed.

Supply and Use
European Communities (Classification, Packaging and Labelling of Plant Protection Products and Biocide Products) Regulations 2001 (SI No 624/2001)

Waste Treatment
Landfill Directive
Regulation on Substances That Deplete the Ozone Layer 1994 (EEC/3093/94)

Further information
WHO-classification: III (Slightly hazardous)

15.2 Chemical safety assessment
A chemical safety assessment is not required.

SECTION 16: OTHER INFORMATION

Text of the hazard statements mentioned in Section 3
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H400 Very toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.

Abbreviations and acronyms
Conc. Concentration
LOEC/LOEL Lowest observed effect concentration/level
UN United Nations
OECD Organization for Economic Co-operation and Development
EN European Standard
ELV Exposure Limit Value
N.O.S. Not otherwise specified
SI Statutory Instrument
IBC International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
EU European Union
ELINCS European list of notified chemical substances
EINECS European inventory of existing commercial substances
EC-No. European community number
NOEC/NOEL No observed effect concentration/level
LDx Lethal dose to x %
LCx Lethal concentration to x %
ICx Inhibition concentration to x %
ECx Effective concentration to x %
CAS-Nr. Chemical Abstracts Service number
MARPOL MARPOL: International Convention for the prevention of marine pollution from ships
RID Regulations concerning the International Carriage of Dangerous Goods by Rail
IMDG International Maritime Dangerous Goods
IATA International Air Transport Association
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>European Agreement concerning the International Carriage of Dangerous Goods by Road</td>
</tr>
<tr>
<td>ADN</td>
<td>European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organisation</td>
</tr>
<tr>
<td>ATE</td>
<td>Acute toxicity estimate</td>
</tr>
<tr>
<td>TWA</td>
<td>Time weighted average</td>
</tr>
</tbody>
</table>

**Reason for Revision:** Safety Data Sheet according to Regulation (EU) No. 2015/830. The following sections have been revised: Section 2: Hazards Identification.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information contained within this Safety Data Sheet is in accordance with the guidelines established by Regulation (EU) 1907/2006 and Regulation (EU) 2015/830 amending Regulation (EU) No 1907/2006 and any subsequent amendments. This data sheet complements the user's instructions, but does not replace them. The information it contains is based on the knowledge available about the product concerned at the time it was compiled. Users are further reminded of the possible risks of using a product for purposes other than those for which it was intended. The required information complies with current EEC legislation. Addressees are requested to observe any additional national requirements.