Mixture B NF
08031

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

1.1 Product identifier: Mixture B NF 08031

1.2 Relevant identified uses of the substance or mixture and uses advised against:
Relevant uses: Adjuvant. For professional user/industrial user only.
Uses advised against: All uses not specified in this section or in section 7.3

1.3 Details of the supplier of the safety data sheet:
Amega Sciences plc
Unit 17 Lanchester Way
NN11 8PH Daventry - Northamptonshire - United Kingdom
Phone.: 44 1327 704444 - Fax: +44 (0) 1327 311 226
admin@amega-sciences.com

1.4 Emergency telephone number: +44 (0) 7802844234 (for Emergency ONLY)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:
Directive 67/548/EC and Directive 1999/45/EC:
This product was classified in accordance with Directive 67/548/EC and Directive 1999/45/EC, adapting the requirements to Regulation (EC) n°1907/2006 (REACH regulation).
N: R50 - Very toxic to aquatic organisms
Xi: R41 - Risk of serious damage to eyes
Xn: R22 - Harmful if swallowed
R67 - Vapours may cause drowsiness and dizziness

CLP Regulation (EC) n° 1272/2008:
Classification of this product has been carried out in accordance with CLP Regulation (EC) n° 1272/2008.
Acute Tox. 4: Acute toxicity if swallowed, Category 4, H302
Aquatic Acute 1: Hazardous to the aquatic environment, acute hazard, Category 1, H400
Eye Dam. 1: Serious eye damage, Category 1, H318
Skin Irrit. 2: Skin irritation, Category 2, H315
STOT SE 3: Specific toxicity causing drowsiness and dizziness, single exposure, Category 3, H336

2.2 Label elements:
CLP Regulation (EC) n° 1272/2008:
Danger

Hazard statements:
Acute Tox. 4: H302 - Harmful if swallowed
Aquatic Acute 1: H400 - Very toxic to aquatic life
Eye Dam. 1: H318 - Causes serious eye damage
Skin Irrit. 2: H315 - Causes skin irritation
STOT SE 3: H336 - May cause drowsiness or dizziness

Precautionary statements:
P271: Use only outdoors or in a well-ventilated area
P280: Wear protective gloves/protective clothing/eye protection/face protection
P302+P352: IF ON SKIN: Wash with plenty of water
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310: Immediately call a POISON CENTER/doctor
P403+P233: Store in a well-ventilated place. Keep container tightly closed
P501: Dispose of contents and / or containers in accordance with regulations on hazardous waste or packaging and packaging waste respectively

2.3 Other hazards:

- CONTINUED ON NEXT PAGE -
SECTION 2: HAZARDS IDENTIFICATION (continued)

Non-applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance:
Non-applicable

3.2 Mixture:

Chemical description: Polymer/s

Components:

In accordance with Annex II of Regulation (EC) nº1907/2006 (point 3), the product contains:

<table>
<thead>
<tr>
<th>Identification</th>
<th>Chemical name/Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 106232-83-1</td>
<td>Alcohols, C12-15, branched and linear, ethoxylated</td>
<td>Self-classified</td>
</tr>
<tr>
<td>EC: 500-294-5</td>
<td>Directive 67/548/EC</td>
<td>X: R50; Xi: R41; Xn: R22</td>
</tr>
<tr>
<td>REACH: Non-applicable</td>
<td>Regulation 1272/2008</td>
<td>Acute Tox. 4: H302; Aquatic Acute 1: H400; Eye Dam. 1: H318 - Danger</td>
</tr>
<tr>
<td>EC: 500-195-7</td>
<td>Directive 67/548/EC</td>
<td>X: R41; Xi: R22</td>
</tr>
<tr>
<td>REACH: 01-211948720-33-XXXX</td>
<td>Regulation 1272/2008</td>
<td>Acute Tox. 4: H302; Eye Dam. 1: H318 - Danger</td>
</tr>
<tr>
<td>CAS: 78-83-1</td>
<td>Isobutanol</td>
<td>ATP CLP00</td>
</tr>
<tr>
<td>EC: 201-148-0</td>
<td>Directive 67/548/EC</td>
<td>Xi: R37/38, R41; R10; R67</td>
</tr>
<tr>
<td>Index: 603-108-00-1</td>
<td>Regulation 1272/2008</td>
<td>Eye Dam. 1: H318; Flam. Liq. 3: H226; Skin Irrit. 2: H315; STOT SE 3: H335; STOT SE 3: H336 - Danger</td>
</tr>
<tr>
<td>REACH: 01-211948460-23-XXXX</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To obtain more information on the risk of the substances consult sections 8, 11, 12, 15 and 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:

Remove the person affected from the area of exposure, provide with fresh air and keep at rest. In serious cases such as cardiorespiratory failure, artificial resuscitation techniques will be necessary (mouth to mouth resuscitation, cardiac massage, oxygen supply, etc.) requiring immediate medical assistance.

By skin contact:

Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Request medical assistance immediately, showing the SDS of this product. Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. In the case of loss of consciousness do not administrate anything orally unless supervised by a doctor. Rinse out the mouth and throat, as they may have been affected during ingestion. Keep the person affected at rest.

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

Acute and delayed effects are indicated in sections 2 and 11.

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

Non-applicable

SECTION 5: FIREFIGHTING MEASURES
SECTION 5: FIREFIGHTING MEASURES (continued)

5.1 Extinguishing media:
Product is non-flammable under normal conditions of storage, manipulation and use, containing flammable substances. In the case of inflammation as a result of improper manipulation, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems. IT IS NOT RECOMMENDED to use tap water as an extinguishing agent.

5.2 Special hazards arising from the substance or mixture:
As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Advice for firefighters:
Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...) in accordance with Directive 89/654/EC.

Additional provisions:
Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:
Isolate leaks provided that there is no additional risk for the people performing this task. Evacuate the area and keep out those without protection. Personal protection equipment must be used against potential contact with the split product (See section 8). Above all prevent the formation of any vapour-air flammable mixtures, through either ventilation or the use of an inertization agent. Destroy any source of ignition. Eliminate electrostatic charges by interconnecting all the conductive surfaces on which static electricity could form, and also ensuring that all surfaces are connected to the ground.

6.2 Environmental precautions:
Avoid at all cost any type of spillage into an aqueous medium. Contain the product absorbed appropriately in hermetically sealed containers. Notify the relevant authority in case of exposure to the general public or the environment.

6.3 Methods and material for containment and cleaning up:
It is recommended:
Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

6.4 Reference to other sections:
See sections 8 and 13.

SECTION 7:HANDLING AND STORAGE

7.1 Precautions for safe handling:
A.- Precautions for safe manipulation
Comply with the current legislation concerning the prevention of industrial risks. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

B.- Technical recommendations for the prevention of fires and explosions
Avoid the evaporation of the product as it contains flammable substances, which could form flammable vapour/air mixtures in the presence of sources of ignition. Control sources of ignition (mobile phones, sparks,...) and transfer at slow speeds to avoid the creation of electrostatic charges. Avoid projections and pulverizations. Consult section 10 for conditions and materials that should be avoided.

C.- Technical recommendations to prevent ergonomic and toxicological risks
Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks
Due to the danger of this product for the environment it is recommended to use it within an area containing contamination control barriers in case of spillage, as well as having absorbent material in close proximity.
SECTION 7: HANDLING AND STORAGE (continued)

7.2 Conditions for safe storage, including any incompatibilities:
A. - Technical measures for storage
   Minimum Temp.: 0 °C
   Maximum Temp.: 40 °C
   Maximum time: 24 Months
B. - General conditions for storage
   Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):
Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:
Substances whose occupational exposure limits have to be monitored in the work environment (EH40/2005 Workplace exposure limits):

<table>
<thead>
<tr>
<th>Identification</th>
<th>Environmental limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MEL (8h)</td>
</tr>
<tr>
<td>Isobutanol CAS: 78-83-1 EC: 201-148-0</td>
<td>50 ppm</td>
</tr>
</tbody>
</table>

DNEL (Workers):

<table>
<thead>
<tr>
<th>Identification</th>
<th>Short exposure</th>
<th>Long exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oral</td>
<td>Systemic</td>
</tr>
<tr>
<td>Isobutanol CAS: 78-83-1 EC: 201-148-0</td>
<td>Oral</td>
<td>Non-applicable</td>
</tr>
</tbody>
</table>

DNEL (General population):

<table>
<thead>
<tr>
<th>Identification</th>
<th>Short exposure</th>
<th>Long exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oral</td>
<td>Systemic</td>
</tr>
<tr>
<td>Alcoholics, C12-15, ethoxylated (C12-15 PARETH-7) CAS: 68131-39-5 EC: 500-195-7</td>
<td>Oral</td>
<td>Non-applicable</td>
</tr>
<tr>
<td>Isobutanol CAS: 78-83-1 EC: 201-148-0</td>
<td>Oral</td>
<td>Non-applicable</td>
</tr>
</tbody>
</table>

PNEC:

<table>
<thead>
<tr>
<th>Identification</th>
<th>STP</th>
<th>Fresh water</th>
<th>0.0446 mg/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholics, C12-15, ethoxylated (C12-15 PARETH-7) CAS: 68131-39-5 EC: 500-195-7</td>
<td>10000 mg/L</td>
<td>0.0446 mg/L</td>
<td></td>
</tr>
<tr>
<td>Isobutanol CAS: 78-83-1 EC: 201-148-0</td>
<td>10 mg/L</td>
<td>Fresh water</td>
<td>0.4 mg/L</td>
</tr>
</tbody>
</table>

8.2 Exposure controls:
A. - General security and hygiene measures in the work place
SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

As a preventative measure it is recommended to use basic Personal Protection Equipment, with the corresponding <<CE marking>> in accordance with Directive 89/686/EC. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,…) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1.

All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

B. Respiratory protection

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>PPE</th>
<th>Labelling</th>
<th>CEN Standard</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Replace when an increase in resistence to breathing is observed and/or a smell or taste of the contaminant is detected.</td>
</tr>
</tbody>
</table>

C. Specific protection for the hands

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>PPE</th>
<th>Labelling</th>
<th>CEN Standard</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Replace gloves in case of any sign of damage. For prolonged periods of exposure to the product for professional users/industrials, we recommend using CE III gloves in line with standards EN 420 and EN 374.</td>
</tr>
</tbody>
</table>

D. Ocular and facial protection

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>PPE</th>
<th>Labelling</th>
<th>CEN Standard</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Clean daily and disinfect periodically according to the manufacturer’s instructions. Use if there is a risk of splashing.</td>
</tr>
</tbody>
</table>

E. Bodily protection

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>PPE</th>
<th>Labelling</th>
<th>CEN Standard</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Work clothing</td>
<td>CAT I</td>
<td>EN ISO 20347:2012</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anti-slip work shoes</td>
<td>CAT II</td>
<td>EN ISO 20347:2012</td>
<td></td>
</tr>
</tbody>
</table>

F. Additional emergency measures

It is not necessary to take additional emergency measures.

<table>
<thead>
<tr>
<th>Emergency measure</th>
<th>Standards</th>
<th>Emergency measure</th>
<th>Standards</th>
</tr>
</thead>
</table>

Environmental exposure controls:

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

Volatile organic compounds:

With regard to Directive 2010/75/EU, this product has the following characteristics:

- V.O.C. (Supply): 14 % weight
- V.O.C. density at 20 ºC: 127.81 kg/m³ (127.81 g/L)
- Average carbon number: 4
SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Average molecular weight: 74.1 g/mol

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:
For complete information see the product datasheet.

Appearance:
- Physical state at 20 ºC: Liquid
- Appearance: Characteristic
- Colour: Colourless
- Odour: Characteristic

Vapour pressure at 20 ºC: Non-applicable *
Vapour pressure at 50 ºC: Non-applicable *
Evaporation rate at 20 ºC: Non-applicable *

Product description:
- Density at 20 ºC: 903 - 923 kg/m³
- Relative density at 20 ºC: 0.913
- Dynamic viscosity at 20 ºC: Non-applicable *
- Kinematic viscosity at 20 ºC: Non-applicable *
- Kinematic viscosity at 40 ºC: Non-applicable *
- Concentration: Non-applicable *
- pH: 6 - 8
- Vapour density at 20 ºC: Non-applicable *
- Partition coefficient n-octanol/water 20 ºC: Non-applicable *
- Solubility in water at 20 ºC: Non-applicable *
- Solubility properties: Miscible
- Decomposition temperature: Non-applicable *
- Melting point/freezing point: Non-applicable *
- Explosive properties: Non-applicable *
- Oxidising properties: Non-applicable *

Flammability:
- Flash Point: 62 ºC
- Autoignition temperature: Non-applicable *
- Lower flammability limit: Non-applicable *
- Upper flammability limit: Non-applicable *

9.2 Other information:
- Surface tension at 20 ºC: Non-applicable *
- Refraction index: Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

- CONTINUED ON NEXT PAGE -
SECTION 10: STABILITY AND REACTIVITY (continued)

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

10.2 Chemical stability:
Chemically stable under the conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:
Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:
Applicable for handling and storage at room temperature:

<table>
<thead>
<tr>
<th>Shock and friction</th>
<th>Contact with air</th>
<th>Increase in temperature</th>
<th>Sunlight</th>
<th>Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Precaution</td>
<td>Precaution</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

10.5 Incompatible materials:

<table>
<thead>
<tr>
<th>Acids</th>
<th>Water</th>
<th>Combustive materials</th>
<th>Combustible materials</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Avoid direct impact</td>
<td>Not applicable</td>
<td>Avoid alkalis or strong bases</td>
</tr>
</tbody>
</table>

10.6 Hazardous decomposition products:
See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO2), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:
The experimental information related to the toxicological properties of the product itself is not available

Dangerous health implications:
In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

A- Ingestion (acute effect):
  - Acute toxicity: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.
  - Corrosivity/Irritability: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.

B- Inhalation (acute effect):
  - Acute toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for inhalation. For more information see section 3.
  - Corrosivity/Irritability: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for inhalation. For more information see section 3.

C- Contact with the skin and the eyes (acute effect):
  - Contact with the skin: Produces skin inflammation.
  - Contact with the eyes: Produces serious eye damage after contact.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):
  - Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for the effects mentioned. For more information see section 3.
  - Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
  - Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

E- Sensitizing effects:
  - Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensitising effects. For more information see section 3.
  - Cutaneous: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

F- Specific target organ toxicity (STOT)-time exposure:
Exposure in high concentration can cause a breakdown in the central nervous system causing headache, dizziness, vertigo, nausea, vomiting, confusion, and in serious cases, loss of consciousness.
SECTION 11: TOXICOLOGICAL INFORMATION (continued)

G- Specific target organ toxicity (STOT)-repeated exposure:
   - Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
   - Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

H- Aspiration hazard:
Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

Other information:
Non-applicable

Specific toxicology information on the substances:

<table>
<thead>
<tr>
<th>Identification</th>
<th>Acute toxicity</th>
<th>Genus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohols, C12-15, ethoxylated</td>
<td>LD50 oral 500 mg/kg (ATEI)</td>
<td></td>
</tr>
<tr>
<td>CAS: 68131-39-5</td>
<td>LD50 dermal &gt;2000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>EC: 500-195-7</td>
<td>LC50 inhalation &gt;20 mg/L (4 h)</td>
<td></td>
</tr>
<tr>
<td>Alcohols, C12-15, branched and linear, ethoxylated</td>
<td>LD50 oral 500 mg/kg (ATEI)</td>
<td></td>
</tr>
<tr>
<td>CAS: 106232-83-1</td>
<td>LD50 dermal &gt;2000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>EC: 500-294-5</td>
<td>LC50 inhalation &gt;20 mg/L (4 h)</td>
<td></td>
</tr>
<tr>
<td>Isobutanol</td>
<td>LD50 oral 3350 mg/kg</td>
<td>Rat</td>
</tr>
<tr>
<td>CAS: 78-83-1</td>
<td>LD50 dermal 2460 mg/kg</td>
<td>Rabbit</td>
</tr>
<tr>
<td>EC: 201-148-0</td>
<td>LC50 inhalation 24.6 mg/L (4 h)</td>
<td>Rat</td>
</tr>
</tbody>
</table>

SECTION 12: ECOLOGICAL INFORMATION

The experimental information related to the eco-toxicological properties of the product itself is not available

12.1 Toxicity:

<table>
<thead>
<tr>
<th>Identification</th>
<th>Acute toxicity</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohols, C12-15, branched and linear, ethoxylated</td>
<td>LC50 0.1 - 1 mg/L (96 h)</td>
<td>Fish</td>
</tr>
<tr>
<td>CAS: 106232-83-1</td>
<td>EC50 0.1 - 1 mg/L</td>
<td>Crustacean</td>
</tr>
<tr>
<td>EC: 500-294-5</td>
<td>EC50 0.1 - 1 mg/L</td>
<td>Algae</td>
</tr>
<tr>
<td>Isobutanol</td>
<td>LC50 2030 mg/L (96 h)</td>
<td>Carassius auratus</td>
</tr>
<tr>
<td>CAS: 78-83-1</td>
<td>EC50 1439 mg/L (48 h)</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td>EC: 201-148-0</td>
<td>EC50 1250 mg/L (48 h)</td>
<td>Scenedesmus subspicatus</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability:

<table>
<thead>
<tr>
<th>Identification</th>
<th>Degradability</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isobutanol</td>
<td>BOD5 0.4 g O2/g</td>
<td>Concentration 100 mg/L</td>
</tr>
<tr>
<td>CAS: 78-83-1</td>
<td>COD 2.41 g O2/g</td>
<td>Period 14 days</td>
</tr>
<tr>
<td>EC: 201-148-0</td>
<td>BODS/COD 0.17</td>
<td>% Biodegradable 90 %</td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential:

<table>
<thead>
<tr>
<th>Identification</th>
<th>Bioaccumulation potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isobutanol</td>
<td>BCF 3</td>
</tr>
<tr>
<td>CAS: 78-83-1</td>
<td>Pow Log 0.76</td>
</tr>
<tr>
<td>EC: 201-148-0</td>
<td>Potential Low</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil:

<table>
<thead>
<tr>
<th>Identification</th>
<th>Absorption/desorption</th>
<th>Volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isobutanol</td>
<td>Koc Non-applicable</td>
<td>Henry</td>
</tr>
<tr>
<td>CAS: 78-83-1</td>
<td>Conclusion Non-applicable</td>
<td>Dry soil Non-applicable</td>
</tr>
<tr>
<td>EC: 201-148-0</td>
<td>Surface tension 2.378E-2 N/m (25 ºC)</td>
<td>Moist soil Non-applicable</td>
</tr>
</tbody>
</table>

12.5 Results of PBT and vPvB assessment:
Non-applicable
SECTION 12: ECOLOGICAL INFORMATION (continued)

12.6 Other adverse effects:
Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Waste class (Regulation (EU) No 1357/2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>It is not possible to assign a specific code, as it depends on the intended use by the user</td>
<td>Dangerous</td>
</tr>
</tbody>
</table>

Type of waste (Regulation (EU) No 1357/2014):
HP14 Ecotoxic, HP4 Irritant — skin irritation and eye damage, HP6 Acute Toxicity

Waste management (disposal and evaluation):
Consult the authorized waste service manager on the assessment and disposal operations in accordance with Annex 1 and Annex 2 (Directive 2008/98/EC, The Waste Regulations 2011, 2011 No. 988). As under 15 01 (2014/955/EU) of the code and in case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See paragraph 6.2.

Regulations related to waste management:
In accordance with Annex II of Regulation (EC) nº1907/2006 (REACH) the community or state provisions related to waste management are stated

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land:

With regard to ADR 2015 and RID 2015:

14.1 UN number: UN3082
14.2 UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alcohols, C12-15, ethoxylated (C12-15 PARETH-7))
14.3 Transport hazard class(es): 9
Labels: 9
14.4 Packing group: III
14.5 Dangerous for the environment: Yes
14.6 Special precautions for user
   Special regulations: 274, 335, 375, 601
   Tunnel restriction code: E
   Physico-Chemical properties: see section 9
   Limited quantities: 5 L
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code:
Non-applicable

Transport of dangerous goods by sea:

With regard to IMDG 37-14:
## SECTION 14: TRANSPORT INFORMATION (continued)

<table>
<thead>
<tr>
<th>14.1 UN number:</th>
<th>UN3082</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2 UN proper shipping name:</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alcohols, C12-15, ethoxylated (C12-15 PARETH-7))</td>
</tr>
<tr>
<td>14.3 Transport hazard class(es):</td>
<td>9</td>
</tr>
<tr>
<td>Labels:</td>
<td>9</td>
</tr>
<tr>
<td>14.4 Packing group:</td>
<td>III</td>
</tr>
<tr>
<td>14.5 Dangerous for the environment:</td>
<td>Yes</td>
</tr>
<tr>
<td>14.6 Special precautions for user</td>
<td></td>
</tr>
<tr>
<td>Special regulations:</td>
<td>274, 909</td>
</tr>
<tr>
<td>EmS Codes:</td>
<td>F-A, S-F</td>
</tr>
<tr>
<td>Physico-Chemical properties:</td>
<td>see section 9</td>
</tr>
<tr>
<td>Limited quantities:</td>
<td>5 L</td>
</tr>
<tr>
<td>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code:</td>
<td>Non-applicable</td>
</tr>
</tbody>
</table>

### Transport of dangerous goods by air:

With regard to IATA/ICAO 2015:

<table>
<thead>
<tr>
<th>14.1 UN number:</th>
<th>UN3082</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2 UN proper shipping name:</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alcohols, C12-15, ethoxylated (C12-15 PARETH-7))</td>
</tr>
<tr>
<td>14.3 Transport hazard class(es):</td>
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</tr>
<tr>
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<td>9</td>
</tr>
<tr>
<td>14.4 Packing group:</td>
<td>III</td>
</tr>
<tr>
<td>14.5 Dangerous for the environment:</td>
<td>Yes</td>
</tr>
<tr>
<td>14.6 Special precautions for user</td>
<td></td>
</tr>
<tr>
<td>Physico-Chemical properties:</td>
<td>see section 9</td>
</tr>
<tr>
<td>Limited quantities:</td>
<td>5 L</td>
</tr>
<tr>
<td>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code:</td>
<td>Non-applicable</td>
</tr>
</tbody>
</table>

## SECTION 15: REGULATORY INFORMATION

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

Candidate substances for authorisation under the Regulation (EC) 1907/2006 (REACH): Non-applicable

Substances included in Annex XIV of REACH ("Authorisation List") and sunset date: Non-applicable

Regulation (EC) 1005/2009, about substances that deplete the ozone layer: Non-applicable

Article 95, REGULATION (EU) No 528/2012: Non-applicable

REGULATION (EU) No 649/2012, in relation to the import and export of hazardous chemical products: Non-applicable

Limitations to commercialisation and the use of certain dangerous substances and mixtures (Annex XVII REACH, etc ....):

Non-applicable

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation:
SECTION 15: REGULATORY INFORMATION (continued)

The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009, 2009 No. 716
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (CDG 2009), SI 2009 No 1348
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment (Amendment) Regulations 2011, 2011 No. 1885
Control of Substances Hazardous to Health Regulations 2002 (as amended)
EH40/2005 Workplace exposure limits
The Waste Regulations 2011, 2011 No. 988

15.2 Chemical safety assessment:

The supplier has not carried out evaluation of chemical safety.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:
This safety data sheet has been designed in accordance with ANNEX II-Guide to the compilation of safety data sheets of Regulation (EC) Nº 1907/2006 (Regulation (EU) Nº 453/2010, Regulation (EC) Nº 2015/830)

Modifications related to the previous security card which concerns the ways of managing risks:
CLP Regulation (EC) nº 1272/2008:
- Precautionary statements

Texts of the legislative phrases mentioned in section 2:
H302: Harmful if swallowed
H315: Causes skin irritation
H318: Causes serious eye damage
H336: May cause drowsiness or dizziness
H400: Very toxic to aquatic life

Texts of the legislative phrases mentioned in section 3:
The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

Directive 67/548/EC and Directive 1999/45/EC:
R10: Flammable
R22: Harmful if swallowed
R37/38: Irritating to respiratory system and skin
R41: Risk of serious damage to eyes
R50: Very toxic to aquatic organisms
R67: Vapours may cause drowsiness and dizziness

CLP Regulation (EC) nº 1272/2008:
Acute Tox. 4: H302 - Harmful if swallowed
Aquatic Acute 1: H400 - Very toxic to aquatic life
Eye Dam. 1: H318 - Causes serious eye damage
Flam. Liq. 3: H226 - Flammable liquid and vapour
Skin Irrit. 2: H315 - Causes skin irritation
STOT SE 3: H335 - May cause respiratory irritation
STOT SE 3: H336 - May cause drowsiness or dizziness

Advice related to training:
Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:
http://esis.jrc.ec.europa.eu
http://echa.europa.eu
http://eur-lex.europa.eu

Abbreviations and acronyms:
**SECTION 16: OTHER INFORMATION (continued)**

<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>IMDG</td>
<td>International maritime dangerous goods code</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organisation</td>
</tr>
<tr>
<td>COD</td>
<td>Chemical Oxygen Demand</td>
</tr>
<tr>
<td>BOD5</td>
<td>5-day biochemical oxygen demand</td>
</tr>
<tr>
<td>BCF</td>
<td>Bioconcentration factor</td>
</tr>
<tr>
<td>LD50</td>
<td>Lethal Dose 50</td>
</tr>
<tr>
<td>LC50</td>
<td>Lethal Concentration 50</td>
</tr>
<tr>
<td>EC50</td>
<td>Effective concentration 50</td>
</tr>
<tr>
<td>Log-POW</td>
<td>Octanol–water partition coefficient</td>
</tr>
<tr>
<td>Koc</td>
<td>Partition coefficient of organic carbon</td>
</tr>
</tbody>
</table>

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation at European and state level, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product, it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within our awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.