SAFETY DATA SHEET

1. Identification

Product Name: Sodium perborate monohydrate
Cat No.: AC386410000; AC386410010; AC386410250; AC386412500
Synonyms: No information available
Recommended Use: Laboratory chemicals.
Uses advised against: No information available

2. Hazard(s) identification

Classification: This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Oxidizing solids: Category 3
Acute oral toxicity: Category 4
Serious Eye Damage/Eye Irritation: Category 1
Reproductive Toxicity: Category 1B
Specific target organ toxicity (single exposure): Category 3
Target Organs - Respiratory system.

Label Elements

Signal Word: Danger

Hazard Statements:
May intensify fire; oxidizer
Harmful if swallowed
Causes serious eye damage
May cause respiratory irritation
May damage the unborn child. Suspected of damaging fertility
Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep/Store away from clothing/ other combustible materials
Take any precaution to avoid mixing with combustibles
Response
IF exposed or concerned: Get medical attention/advice
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing Immediately call a POISON CENTER or doctor/physician
Ingestion
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Fire
In case of fire: Use CO2, dry chemical, or foam for extinction
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
None identified

3. Composition / information on ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium perborate monohydrate</td>
<td>10332-33-9</td>
<td>95</td>
</tr>
</tbody>
</table>

4. First-aid measures

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation
Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Obtain medical attention.

Ingestion
Do not induce vomiting. Call a physician or Poison Control Center immediately.
Most important symptoms/effects: Causes eye burns. Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media: Water spray. Carbon dioxide (CO₂). Dry chemical. chemical foam.

Unsuitable Extinguishing Media: No information available

Flash Point: No information available
Method: No information available

Autoignition Temperature: Not applicable

Explosion Limits: Upper - No data available, Lower - No data available

Oxidizing Properties: Oxidizer

Sensitivity to Mechanical Impact: No information available
Sensitivity to Static Discharge: No information available

Specific Hazards Arising from the Chemical:
Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood paper, oil, clothing, etc.).

Hazardous Combustion Products:
oxygen

Protective Equipment and Precautions for Firefighters:
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental release measures

Personal Precautions:
Ensure adequate ventilation. Use personal protective equipment. Evacuate personnel to safe areas. Avoid dust formation.

Environmental Precautions:
See Section 12 for additional ecological information.

Methods for Containment and Clean Up:
Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Do not let this chemical enter the environment. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal.

7. Handling and storage

Handling:
Use only under a chemical fume hood. Do not breathe dust. Do not ingest. Do not get in eyes, on skin, or on clothing. Minimize dust generation and accumulation. Wash hands before breaks and immediately after handling the product. Keep away from clothing and other combustible materials.

Storage:
Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Do not store near combustible materials. Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines:
This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

**Eye/face Protection**
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection**
Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection**
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

### 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Powder Solid</td>
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<tr>
<td>Appearance</td>
<td>White</td>
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<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
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<tr>
<td>pH</td>
<td>10 1.5% aq. solution</td>
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<tr>
<td>Melting Point/Range</td>
<td>No data available</td>
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<tr>
<td>Boiling Point/Range</td>
<td>No information available</td>
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<tr>
<td>Flash Point</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not applicable</td>
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<td>Flammability (solid,gas)</td>
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<tr>
<td>Flammability or explosive limits</td>
<td>No information available</td>
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<tr>
<td>Upper</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
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<tr>
<td>Vapor Density</td>
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<tr>
<td>Relative Density</td>
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<td>Solubility</td>
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<tr>
<td>Autoignition Temperature</td>
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<td>Decomposition Temperature</td>
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<tr>
<td>Viscosity</td>
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<tr>
<td>Molecular Formula</td>
<td>B Na O3 . H2 O</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>99.81</td>
</tr>
</tbody>
</table>

### 10. Stability and reactivity

**Reactive Hazard**
Yes

**Stability**
Stable under normal conditions. Hygroscopic. Oxidizer: Contact with combustible/organic material may cause fire.

**Conditions to Avoid**
Temperatures above 40°C. Incompatible products. Exposure to moist air or water. Avoid dust formation. Combustible material. Excess heat.

**Incompatible Materials**
Strong oxidizing agents, alkaline, Powdered metal salts, Reducing agents, Strong reducing agents, Combustible material

**Hazardous Decomposition Products**
oxygen

**Hazardous Polymerization**
Hazardous polymerization does not occur.
Hazardous Reactions

None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
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<tbody>
<tr>
<td>Sodium perborate monohydrate</td>
<td>770 - 2100 mg/kg (Rat)</td>
<td>&gt;2000 mg/kg (Rabbit)</td>
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</tr>
</tbody>
</table>

Toxicologically Synergistic Products

No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation

Risk of serious damage to eyes

Sensitization

No information available

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
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<tr>
<td>Sodium perborate monohydrate</td>
<td>10332-33-9</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Mutagenic Effects

No information available

Reproductive Effects

May cause harm to the unborn child. Possible risk of impaired fertility.

Developmental Effects

No information available.

Teratogenicity

No information available.

STOT - single exposure

Respiratory system

STOT - repeated exposure

None known

Aspiration hazard

No information available

Symptoms / effects, both acute and delayed

No information available

Endocrine Disruptor Information

No information available

Other Adverse Effects

See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

Do not empty into drains.

Persistence and Degradability

Soluble in water. Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation

No information available.

Mobility

Will likely be mobile in the environment due to its water solubility.

13. Disposal considerations

Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information
15. Regulatory information

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
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<tbody>
<tr>
<td>Sodium perborate monohydrate</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
</tbody>
</table>

Legend:
- X - Listed
- E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
- F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
- N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
- P - Indicates a commenced PMN substance
- R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
- S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
- T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
- XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).
- Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
- Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazardous Categorization

- Acute Health Hazard: Yes
- Chronic Health Hazard: Yes
- Fire Hazard: No
- Sudden Release of Pressure Hazard: No
- Reactive Hazard: Yes

Clean Water Act Not applicable

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration Not applicable
Sodium perborate monohydrate

CERCLA
Not applicable

California Proposition 65
This product does not contain any Proposition 65 chemicals

State Right-to-Know
Not applicable

U.S. Department of Transportation
Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations
Mexico - Grade
No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class
C Oxidizing materials
D1B Toxic materials
D2A Very toxic materials
E Corrosive material

16. Other information
Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 24-Nov-2010
Revision Date 20-Jan-2015
Print Date 20-Jan-2015
Revision Summary
This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS
SAFETY DATA SHEET

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

1.1. Product identifier
Trade name or designation of the mixture
FutureChem ® LDA-HS
Registration number
-
Synonyms
Product code(s): 70210, P7021003, P7021008, P7021004
Issue date
27-October-2014
Version number
01
Revision date
-
Supersedes date
-

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses
Detergent additive
Uses advised against
None known.

1.3. Details of the supplier of the safety data sheet
Company name
FutureFuel Chemical Company
Address
2800 Gap Road
Batesville, AR 72501
Telephone
070-588-3000
Contact person
Product Safety
Emergency telephone
CHEMTREC: US 800-424-9300, International 703-527-3887
Email
productsafety@ffcmail.com

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended
Classification
Xi;R41, R43
The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended
Health hazards
Serious eye damage/eye irritation Category 1
Skin sensitisation Category 1
H318 - Causes serious eye damage.
H317 - May cause an allergic skin reaction.

Hazard summary
Physical hazards
Not classified for physical hazards.
Health hazards
Risk of serious damage to eyes. May cause sensitisation by skin contact. Occupational exposure to the substance or mixture may cause adverse health effects.
Environmental hazards
Not classified for hazards to the environment.
Specific hazards
Risk of serious damage to eyes. May cause sensitisation by skin contact.
Main symptoms
Rash. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause an allergic skin reaction. Dermatitis.

2.2. Label elements
Label according to Regulation (EC) No. 1272/2008 as amended
Contains:
Benzenesulphonic acid, mono-C10-16-alkyl derivs., sodium salts, Sodium (nonanoxyloxy) benzenesulfonate

Hazard pictograms

Signal word
Danger
Hazard statements
H317  May cause an allergic skin reaction.
H318  Causes serious eye damage.

Precautionary statements
Prevention
P272  Contaminated work clothing should not be allowed out of the workplace.
P280  Wear protective gloves.
P280  Wear eye/face protection.

Response
P302 + P352  IF ON SKIN: Wash with plenty of water.
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.
P333 + P313  If skin irritation or rash occurs: Get medical advice/attention.
P362 + P364  Take off contaminated clothing and wash it before reuse.

Storage
Store away from incompatible materials.

Disposal
P501  Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information
None.

2.3. Other hazards
None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>%</th>
<th>CAS-No. / EC No.</th>
<th>REACH Registration No.</th>
<th>INDEX No.</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium (nonanoyloxybenzenesulfonate</td>
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<td>91125-43-8</td>
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<td>607-651-00-5</td>
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<td>Classification:</td>
<td>DSD:</td>
<td>Xi;R41, R43</td>
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<tr>
<td></td>
<td>CLP:</td>
<td>Skin Sens. 1;H317, Eye Dam. 1;H318</td>
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<tr>
<td>Glycerol</td>
<td>&lt; 7</td>
<td>56-81-5</td>
<td>-</td>
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<td>Classification:</td>
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<td>CLP:</td>
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<td>DSD:</td>
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<tr>
<td></td>
<td>CLP:</td>
<td>Acute Tox. 4;H302, Skin Irrit. 2;H315, Eye Dam. 1;H318</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Impurities

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>%</th>
<th>CAS-No. / EC No.</th>
<th>REACH Registration No.</th>
<th>INDEX No.</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium 4-acetyloxybenzenesulfonate</td>
<td>&lt; 2.5</td>
<td>N/A</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

List of abbreviations and symbols that may be used above

DSD: Directive 67/548/EEC.
#: This substance has been assigned Community workplace exposure limit(s).
*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.
The full text for all R- and H-phrases is displayed in section 16.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

4.1. Description of first aid measures

Inhalation
Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact
Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion
Rinse mouth. Get medical attention if symptoms occur.

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

Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause an allergic skin reaction. Symptoms may include redness, oedema, drying, defatting and cracking of the skin. Rash. Dermatitis. Dusts or powder may irritate the respiratory tract, skin and eyes.

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

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards
Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

5.1. Extinguishing media

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special protective equipment for firefighters
Use water spray to cool unopened containers.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Local authorities should be advised if significant spillages cannot be contained.

For emergency responders
Keep unnecessary personnel away. Use personal protection recommended in section 8 of the SDS.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas. Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into closed container. Use explosion-proof electrical equipment if airborne dust levels are high. Following product recovery, flush area with water.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Persons susceptible for allergic reactions should not handle this product. Avoid breathing dust. Avoid contact with skin and eyes. Provide explosion-proof ventilation for high dust concentrations. Minimise dust generation and accumulation. Wear appropriate personal protective equipment. Wash thoroughly after handling. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store away from incompatible materials (see section 10 of the SDS).

7.3. Specific end use(s)

Detergent additive.
SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits
UK. EH40 Workplace Exposure Limits (WELs)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol (CAS 56-81-5)</td>
<td>TWA</td>
<td>10 mg/m3</td>
<td>Mist.</td>
</tr>
</tbody>
</table>

Biological limit values
No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures
Follow standard monitoring procedures.

Derived no-effect level (DNEL)
Not available.

Predicted no effect concentrations (PNECs)
Not available.

8.2. Exposure controls

Appropriate engineering controls
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

Individual protection measures, such as personal protective equipment

General information
Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection
Wear safety glasses with side shields (or goggles) and a face shield. Face shield is recommended.

Skin protection
- Hand protection
  Wear appropriate chemical resistant gloves. Nitrile gloves are recommended.
- Other
  Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection
In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter (type P2).

Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

Hygiene measures
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

Environmental exposure controls
Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance
- Physical state: Solid.
- Form: Solid.
- Colour: Off-white.
- Odour: Mild ester.
- Odour threshold: Not available.
- pH: Not applicable.
- Melting point/freezing point: > 300 °C (> 572 °F)
- Initial boiling point and boiling range: Not available.
- Flash point: Not available.
- Evaporation rate: Not available.
- Flammability (solid, gas): Combustible solid.

Upper/lower flammability or explosive limits
- Flammability limit - lower (%): Not available.
- Flammability limit - upper (%): Not available.
Vapour pressure  Not available.
Vapour density  Not available.
Relative density  Not available.
Solubility(ies)  100 g/l
Partition coefficient (n-octanol/water)  Not available.
Auto-Ignition temperature  Not available.
Decomposition temperature  Not available.
Viscosity  Not applicable
Explosive properties  Not available.
Oxidizing properties  Not available.
9.2. Other information
Softening point  120 °C (248 °F)

SECTION 10: Stability and reactivity
10.1. Reactivity  The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability  Material is stable under normal conditions.
10.3. Possibility of hazardous reactions  No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid  Contact with incompatible materials. Avoid dust formation.
10.5. Incompatible materials  Strong oxidising agents.

SECTION 11: Toxicological information
General information  Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure
    Inhalation  Inhalation of dusts may cause respiratory irritation.
    Skin contact  May cause an allergic skin reaction. May cause irritation through mechanical abrasion.
    Eye contact  Causes serious eye damage.
    Ingestion  May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.
Symptoms  Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause an allergic skin reaction. Symptoms may include redness, drying and cracking of the skin. Rash. Dermatitis. Dusts or powder may irritate the respiratory tract, skin and eyes.

11.1. Information on toxicological effects
Acute toxicity  May cause an allergic skin reaction.
Skin corrosion/irritation  May cause irritation through mechanical abrasion.
Serious eye damage/eye irritation  Causes serious eye damage.
Respiratory sensitisation  This product is not expected to cause respiratory sensitization.
Skin sensitisation  May cause an allergic skin reaction.
Germ cell mutagenicity  No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity  This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity  This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure  Not classified.
Specific target organ toxicity - repeated exposure  Not classified.
Aspiration hazard  Not likely, due to the form of the product.
Mixture versus substance information  No information available.
Other information  Symptoms may be delayed.
SECTION 12: Ecological information

12.1. Toxicity
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.2. Persistence and degradability
No data is available on the degradability of this product.

12.3. Bioaccumulative potential
No data available.

Bioconcentration factor (BCF)
Not available.

12.4. Mobility in soil
No data available.

12.5. Results of PBT and vPvB assessment
Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects
None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Residual waste
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

EU waste code
The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal methods/information
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Special precautions
Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR
Not regulated as dangerous goods.

RID
Not regulated as dangerous goods.

ADN
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

14.7. Transport in bulk
according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

SECTION 15: Regulatory information

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

EU regulations
Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I
Not listed.

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II
Not listed.

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended
Not listed.
Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry
Not listed.
Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA
Not listed.

Authorisations
Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended
Not listed.

Restrictions on use
Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended
Not listed.
Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work
Not listed.
Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding
Not listed.

Other EU regulations
Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances
Not listed.
Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work
Sodium (nonanoyloxy) benzenesulfonate (CAS 91125-43-8)
Directive 94/33/EC on the protection of young people at work
Sodium (nonanoyloxy) benzenesulfonate (CAS 91125-43-8)

Other regulations
The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

National regulations
Young people under 18 years old are not allowed to work with this product according to the EU Directive 94/33/EC on the protection of young people at work. Follow national regulation for work with chemical agents.

15.2. Chemical safety assessment
No Chemical Safety Assessment has been carried out.

SECTION 16: Other information
List of abbreviations
Not available.
References
Not available.

Information on evaluation method leading to the classification of mixture
The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any statements or R-phrases and H-statements under Sections 2 to 15
R22 Harmful if swallowed.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
R43 May cause sensitisation by skin contact.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.

Training information
Follow training instructions when handling this material.

Further information
Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

Disclaimer
FutureFuel Chemical Company cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.