SAFETY DATA SHEET

SDS01100
SODIUM METABISULPHITE NF/FG/PHOTO GRADE

Preparation Date: 24/Aug/2017

1. IDENTIFICATION

Product identifier

Product Name SODIUM METABISULPHITE NF/FG/PHOTO GRADE

Other means of identification

Product Code(s) SDS01100

Synonyms Anhydrous sodium bisulfite, ABS, sodium pyrosulfite.

Recommended use of the chemical and restrictions on use

Recommended Use Photographic agent. Water treatment. Food additive Bleaching and disinfectant agent in textile, laundering, paper and fermentation industries. Chemical processing Only NF grade is for use in drug formulation. Drug manufacturing. Only Food Grade (FG) material is for use as a food additive.

Restricted Uses No information available

Initial Supplier Identifier
Univar Canada Ltd.
9800 Van Horne Way
Richmond, BC V6X 1W5
Telephone: 1-866-686-4827

Emergency telephone number

24 Hour Emergency Phone Number (CANUTEC): 1-888-226-8832 (1-888-CAN-UTEC)

2. HAZARD IDENTIFICATION

Hazardous Classification of the substance or mixture

<table>
<thead>
<tr>
<th></th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>Category 4</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
</tr>
</tbody>
</table>

Label elements
Hazard pictograms

Signal Word: Danger

Hazard statements
Harmful if swallowed
Causes serious eye damage

Precautionary Statements

Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear eye/face protection

Response
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
IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
Rinse mouth

Disposal
Dispose of contents/container to an approved waste disposal plant

Other Information
Harmful to aquatic life with long lasting effects

Unknown acute toxicity No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance</th>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
<th>Synonyms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Metabisulfite</td>
<td>7681-57-4</td>
<td>90 - 100%</td>
<td>Sodium Metabisulfite</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
Remainder of the ingredients are non-hazardous.

4. FIRST AID

Description of first aid measures
General advice
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Inhalation
Remove to fresh air. Get medical attention immediately if symptoms occur.

Eye contact
Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.

Skin contact
Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Ingestion
Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

Self-protection of the first aider
Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed:
Large doses may cause violent colic and diarrhea, circulatory disturbances, central nervous system depression. Possible signs and symptoms of allergic reaction include bronchoconstriction, sweating, flushing, hives, rapid heart rate, decreased blood pressure and anaphylaxis. Contact with acids liberates irritating and potentially fatal sulphur dioxide gas. May result in irritation of the mouth and gastrointestinal tract. Solutions are more irritating and may cause burns if not removed from skin promptly. May cause severe or deadly allergic reactions in some asthmatics and sulfite sensitive individuals. May cause permanent eye damage. Dust or mist may irritate or burn eyes. Sulfite sensitive individuals may experience an allergic reaction with nausea, diarrhea, itching, swelling, hives, acute asthma attack, loss of consciousness or anaphylactic shock. May cause irritation of the respiratory tract. Repeated or prolonged contact may cause irritation. Solutions can cause severe eye irritation with tearing, redness, or a stinging or burning feeling.

Indication of any immediate medical attention and special treatment needed:

Note to physicians
Note potential for anaphylactic shock with allergic individuals. Treatment based on sound judgment of physician and individual reactions of patient.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing media appropriate for surrounding fire.

Specific hazards arising from the substance or mixture
Emits toxic fumes under fire conditions.

Hazardous combustion products
Sulphur dioxide. Sodium sulfide residue.

Special protective equipment for fire-fighters
Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES
7. HANDLING AND STORAGE

Precautions for safe handling
Corrosive to eyes. Wash thoroughly after handling. For Food Grade product see following precautions regarding on-board use in preserving shrimp and fish.
On-board ship use of Food Grade material to preserve shrimp and fish:
NEVER apply dry material to shrimp or fish.
ALWAYS prepare and use a solution in a well-ventilation area.
NEVER use below deck or in any confined space such as a hold or cooler. Injury or death may occur. ALWAYS use on deck with plenty of ventilation. Follow mixing and use directions printed on bag. Avoid breathing in dust. Avoid contact with eyes, skin and clothing.

Conditions for safe storage, including any incompatibilities
Dry to avoid tendency of product to cake. Store in a cool, dry, well ventilated area, away from heat and ignition sources. Protect against moisture, water and physical damage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Alberta OEL</th>
<th>British Columbia OEL</th>
<th>Ontario</th>
<th>Quebec OEL</th>
<th>Exposure Limit - ACGIH</th>
<th>Immediately Dangerous to Life or Health - IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Metabisulfite</td>
<td>TWA: 5 mg/m³</td>
<td>TWA: 5 mg/m³</td>
<td>TWA: 5 mg/m³</td>
<td>TWA: 5 mg/m³</td>
<td>5 mg/m³ TLV-TWA</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Consult local authorities for recommended exposure limits

Appropriate engineering controls

Engineering controls
Localized ventilation should be used to control dust levels. Do not use in unventilated spaces, e.g. the holds of fishing boats, walk-in coolers or confined spaces. Use in a well ventilated area.

Individual protection measures, such as personal protective equipment

Eye/face protection
Do not wear contact lenses. Safety glasses (with side shields).

Hand protection
Impervious gloves.

Skin and body protection
For handling dry material, wear cotton gloves and full work clothing, including long-sleeved shirt and trousers. When handling solutions, wear impervious gloves and an apron. Impervious boots.

Respiratory protection
For dusty or misty conditions, wear NIOSH-approved dust or mist respirator. Use self-contained breathing apparatus in high vapor concentrations.

General hygiene considerations
Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Appearance</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid Fine Granular</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>Pungent Sulphur dioxide</td>
<td></td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>

PROPERTIES | Values | Remarks • Method |
--- | --- | --- |
**pH** | 4.3 (1% solution) | none known |
Melting point / freezing point | No data available | Decomposes above 150 |
Initial boiling point/boiling range | No data available | none known |
Flash point | No data available | none known |
Evaporation rate | No data available | none known |
Flammability (solid, gas) | No data available | none known |
Flammability Limit in Air | No data available | none known |
  Upper flammability limit: | No data available | |
  Lower flammability limit: | No data available | |
Vapor pressure | No data available | none known |
Relative vapor density | No data available | none known |
Specific Gravity | 1.48 | |
Water solubility | 39% @ 16°C | |
Solubility in other solvents | No data available | none known |
Partition coefficient | No data available | none known |
Autoignition temperature | No data available | none known |
Decomposition temperature | No data available | none known |
Kinematic viscosity | No data available | none known |
Dynamic viscosity | No data available | none known |
Explosive properties | No information available. | |
Oxidizing properties | No information available. | |
Molecular weight | 190.11 | |
VOC Percentage Volatility | No information available | |
Liquid Density | No information available | |
Bulk density | No information available | |

10. STABILITY AND REACTIVITY

Reactivity/Chemical Stability
Stable under normal conditions
Possibility of hazardous reactions
Oxidizers may cause strong exothermic reactions. Acids, water and ice yield sulfur dioxide gas, which is toxic and corrosive and potentially deadly.

Hazardous polymerization
Will not occur.

Conditions to avoid

Incompatible materials

Hazardous decomposition products
Sulphur dioxide. Sodium sulfide residue.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Possible signs and symptoms of allergic reaction include bronchoconstriction, sweating, flushing, hives, rapid heart rate, decreased blood pressure and anaphylaxis. May cause severe or deadly allergic reactions in some asthmatics and sulfite sensitive individuals. May cause irritation of the respiratory tract. Contact with acids liberates irritating and potentially fatal sulphur dioxide gas.

Eye contact
Solutions can cause severe eye irritation with tearing, redness, or a stinging or burning feeling. May cause permanent eye damage. Dust or mist may irritate or burn eyes.

Skin contact
Repeated or prolonged contact may cause irritation. Solutions are more irritating and may cause burns if not removed from skin promptly.

Ingestion
May result in irritation of the mouth and gastrointestinal tract. Sulfite sensitive individuals may experience an allergic reaction with nausea, diarrhea, itching, swelling, hives, acute asthma attack, loss of consciousness or anaphylactic shock. Large doses may cause violent colic and diarrhea, circulatory disturbances, central nervous system depression.

Information on toxicological effects

Symptoms
Redness. Burning. May cause blindness.

Numerical measures of toxicity

Acute toxicity
The following values are calculated based on chapter 3.1 of the GHS document:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Metabisulfite</td>
<td>1310 mg/kg (Rat)</td>
<td>Not available</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Unknown acute toxicity
No information available.
**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Skin corrosion/irritation**
Repeated or prolonged contact may cause irritation. Solutions are more irritating and may cause burns if not removed from skin promptly.

**Serious eye damage/eye irritation**
May cause permanent eye damage. Dust or mist may irritate or burn eyes. Solutions can cause severe eye irritation with tearing, redness, or a stinging or burning feeling.

**Respiratory or skin sensitization**
No information available.

**Germ cell mutagenicity**
No information available.

**Carcinogenicity**
No information available.

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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Metabisulfite 7681-57-4</td>
<td>Not available</td>
<td>Group 3</td>
<td>Not available</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Legend
IARC (International Agency for Research on Cancer)
Group 3 - Not Classifiable as to Carcinogenicity in Humans

**Reproductive toxicity**
No information available.

**Specific target organ systemic toxicity - single exposure**
No information available.

**Specific target organ systemic toxicity - repeated exposure**
No information available.

**Aspiration hazard**
No information available.

---

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Ecotoxicity - Freshwater Algae Data</th>
<th>Ecotoxicity - Fish Species Data</th>
<th>Toxicity to microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Metabisulfite 7681-57-4</td>
<td>40 mg/L EC50 Desmodesmus subspicatus 96 h 48 mg/L EC50 Desmodesmus subspicatus 72 h</td>
<td>32 mg/L LC50 (Lepomis macrochirus) 96 h static</td>
<td>Not available</td>
<td>Not available</td>
</tr>
</tbody>
</table>

**Persistence and degradability**
No information available.

**Bioaccumulation**
No information available.

**Component Information**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Metabisulfite</td>
<td>-3.7</td>
</tr>
</tbody>
</table>
Other adverse effects: No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods:
Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Do not reuse empty containers.

14. TRANSPORT INFORMATION

TDG (Canada):
- UN Number: Not applicable
- Shipping name: Not regulated
- Class: Not applicable
- Packing Group: Not applicable
- Marine pollutant: Not available.

DOT (U.S.):
- UN Number: Not applicable
- Shipping name: Not regulated
- Class: Not applicable
- Packing Group: Not applicable
- Marine pollutant: Not available.

15. REGULATORY INFORMATION

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

U.S. Regulatory Rules

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CERCLA/SARA - Section 302:</th>
<th>SARA (311, 312) Hazard Class:</th>
<th>CERCLA/SARA - Section 313:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Metabisulphite</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>7681-57-4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

International Inventories

TSCA: Complies
DSL/NDSL: Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA:
- Health hazards: 3
- Flammability: 0
- Instability: 0
- Physical and chemical properties: X

HMIS Health Rating:
- Health hazards: 3
- Flammability: 0
- Physical hazards: 0
- Personal protection: X

Legend: Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION
TWA (time-weighted average) | STEL (Short Term Exposure Limit)
--- | ---
TWA Ceiling | STEL Maximum limit value

Prepared By: The Environment, Health and Safety Department of Univar Canada Ltd.

Preparation Date: 24/Aug/2017
Revision Date: 24/Aug/2017

Disclaimer
NOTICE TO READER:
Univar expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein, and shall under no circumstances be liable for incidental or consequential damages.

Do not use ingredient information and/or ingredient percentages in this SDS as a product specification. For product specification information refer to a Product Specification Sheet and/or a Certificate of Analysis. These can be obtained from your local Univar Sales Office.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Univar makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Univar's control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.

©2015 Univar Inc. All rights reserved. Univar, the hexagon, the Univar logo and MasterLine are the registered trademarks of Univar Inc.

End of Safety Data Sheet