GPS Safety Summary
Sodium hydrogensulfite

Chemical Identity

Name: Sodium hydrogensulfite
CAS number: 7631-90-5
Molecular formula: $\text{H}_2\text{O}_3\text{S.Na}$

IUPAC name: sodium hydrogen sulfite
BASF brand names:
- Sodium Bisulfite Solution 38-40% non food grade
- Sodium Bisulfite Solution high purity grade
- Sodium Bisulfite Solution food grade (E222)

Product Uses

A sodium sulfite solution results from the reaction of sodium hydroxide and sulphur dioxide. By addition of further sulphur dioxide an aqueous solution of sodium bisulfite, $\text{NaHSO}_3$, forms, which is filled.

The most common technical features of sodium hydrogensulfite are as reducing components in bleaching agents, as food/feedstuff additives, as intermediate, in photosensitive agents and other photo-chemicals, as additives in cement, in the production of wood articles, as process regulators, used in vulcanization or polymerization processes and as reducing and tanning agents. Furthermore, sectors of end use include the fiber industry, rubber and plastic industry, photographic sector, textile/leather sector, paper and pulp/bleaching sector, water treatment, mining and offshore industry and wood/furniture. Sodium hydrogensulfite is additionally contained in ink erasers.
Benefits

Versatile inorganic reducing agent based on SO2-chemistry. Available as aqueous solution.

Health Information

Human Health Safety Assessment

Note: The information contained in the table below may be useful to someone handling the concentrated substance such as a manufacturer or transporter. Consumers are not likely to come in contact with the concentrated substance. The data, while verifiable, are not intended to be comprehensive nor replace the data found in the (M)SDS.

<table>
<thead>
<tr>
<th>Effect Assessment</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity</td>
<td>Of moderate toxicity after single ingestion.</td>
</tr>
<tr>
<td></td>
<td>Virtually nontoxic by inhalation.</td>
</tr>
<tr>
<td></td>
<td>Virtually nontoxic after a single skin contact.</td>
</tr>
<tr>
<td>Irritation</td>
<td>Not considered to be a skin or eye irritant.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>Skin sensitizing effects were not observed in animal studies.</td>
</tr>
<tr>
<td></td>
<td>A sensitizing effect on particularly sensitive individuals cannot be excluded.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>The substance was not mutagenic in bacteria, in mammalian cell culture and in a test with mammalian.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not considered to be carcinogenic.</td>
</tr>
<tr>
<td>Toxicity after repeated exposure</td>
<td>No substance-specific organotoxicity was observed after repeated administration of high doses to animals.</td>
</tr>
<tr>
<td>Toxicity for reproduction</td>
<td>Based on available data not considered to have a fertility impairing effect. No indications of a developmental toxic/teratogenic effect were seen in animal studies.</td>
</tr>
</tbody>
</table>

Environmental Information

Environment Safety Assessment

Note: The information in this chapter is intended to provide brief and general information of this substance’s environmental impact. The results in the table below refer to testing performed with
the concentrated substance. The data contained in this section explain the relative effect of the concentrated substance on the environment, as defined by certain tests.

<table>
<thead>
<tr>
<th>Effect Assessment</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Toxicity</td>
<td>Acutely harmful to aquatic organisms.</td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>Inorganic substance, therefore biodegradation testing is not applicable.</td>
</tr>
<tr>
<td>Bioaccumulation potential</td>
<td>Accumulation in organisms is not to be expected.</td>
</tr>
</tbody>
</table>

Physical/Chemical Properties

Phys/Chem Safety Assessment

- Sodium hydrogensulfite is very soluble in water (42 weight % in water 20 °C) and exists only in solution. On concentrating an aqueous solution, solid sodium disulfite (CAS 7681-57-4) crystallizes. Sodium hydrogensulfite does not have flammable or explosive properties.

Note: The results in the table below refer to testing performed with the concentrated substance. It is not intended to be comprehensive or to replace information found in the (M)SDS.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Aqueous solution</td>
</tr>
<tr>
<td>Melting / freezing point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability</td>
<td>Non flammable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Non explosive</td>
</tr>
<tr>
<td>Self-ignition temperature</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

Exposure Potential

- **Workplace exposure:** Exposure can occur either in a sodium hydrogensulfite manufacturing facility or in the various industrial or manufacturing facilities that use
sodium hydrogensulfite. Those working with sodium hydrogensulfite in manufacturing operations could be exposed during maintenance, sampling, testing, or other procedures. Each manufacturing facility should have a thorough training program for employees and appropriate work processes, as well as safety equipment in place to limit unnecessary exposure. Safety showers and eye-wash stations should be accessible nearby. Workers should follow the recommended safety measures in the extended Safety Data Sheet (eSDS).

- **Consumer exposure:** Sodium hydrogensulfite is used in ink erasers. The concentration of sodium hydrogensulfite in consumer products is generally low; therefore sodium hydrogensulfite does not pose any hazard to the consumer. However, carefully read and follow the instructions given on product labels for proper use.

- **Environmental exposure:** Due to the inorganic nature of the chemical biodegradation is per definition not possible. Sodium hydrogensulfite is considered to be acutely harmful to aquatic organisms. Based on an exposure and subsequent risk assessment it was demonstrated that aquatic and terrestrial organisms are not at risk from substance releases into the environment by the identified uses. Conclusively, all identified uses are safe for the environment based on the scientific facts summarized above and when carried out in compliance with recommended risk management measures and applicable regulations.

**Recommended Handling Measures**

_The recommended safety measures generally apply in contact with the concentrated substance. It is NOT intended to replace the comprehensive guidance found in the (M)SDS, only supplement it. Please refer to the (M)SDS for specific safety and first aid measures._

When using concentrated chemicals always make sure that there is adequate ventilation. Always use appropriate chemical resistant gloves to protect your hands and skin and always wear eye protection such as chemical goggles. Do not eat, drink, or smoke where chemicals are handled, processed, or stored. Wash hands and skin following contact. If the substance gets into your eyes, rinse eyes thoroughly for at least 15 minutes with tap water and seek medical attention. For specific advice please consult the corresponding (Material) Safety Data Sheet of the substance.

All effluent releases that may include the substance must be directed to a (municipal) waste water treatment plant that removes the substance from the final releases to the receiving water.
Regulatory Information / Classification and Labeling

Under GHS substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and the (M)SDS. GHS attempts to standardize hazard communication so that the intended audience (workers, consumers, transport workers, and emergency responders) can better understand the hazards of the chemicals in use.

Note: The hazard statements and symbols presented here refer to the hazard properties of the concentrated substance and are meant to provide a brief overview of the substance’s labeling. It is not intended to be comprehensive or to replace information found in the (M)SDS.

Labeling according to UN GHS
UN GHS is the basis for country specific GHS labeling

Signal word:
Warning

Hazard statements:
H302: Harmful if swallowed.
H402: Harmful to aquatic life.

Additional information

1. IFA GESTIS-database on hazardous substances
   http://www.dguv.de/ifa/en/gestis/stoffdb/index.jsp

2. Information on registered substance (ECHA)
Most commonly used synonyms

» Sulfurous acid, monosodium salt (8CI, 9CI)
» Hydrogen sodium sulfite
» Hydrogen sulfite sodium
» Monosodium sulfite
» Sodium acid sulfite
» Sodium bisulfite
» Sodium bisulfite (NaHSO₃)
» Sodium bisulphite

Disclaimer

This Product Safety Summary is intended to provide a general overview of the chemical substance. It contains basic information and is not intended to provide emergency response information, medical information or treatment information. The summary cannot be relied on to provide in-depth safety and health information. In-depth safety and health information must be obtained from the Material Safety Data Sheet ((M)SDS) for the chemical substance.

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Contact

For further information on this substance or GPS safety summaries in general, please contact: info.gps@basf.com