ionz

SAFETY DATA SHEET

Updated on 20/07/2024

1. Material Identification

Product Name : Sodium bisulfite
Catalog Number : io-2996
CAS Number : 7631-90-5
Identified uses : Laboratory chemicals, manufacture of chemical compounds
Company : Ionz

>> R&D Use only

2. Hazards Identification

GHS Classification:

Flammable liquid (category 2)
Acute toxicity, oral (Category 3)
Acute toxicity, dermal (Category 3)
Acute toxicity, inhalation (Category 3)
Specific target organ toxicity, single exposure (Category 1)

Pictogram(s)

>> Warning

GHS Hazard Statements

>> H302 (99.93%): Harmful if swallowed [Warning Acute toxicity, oral]

Precautionary Statement Codes

>> P264, P270, P301+P317, P330, and P501

EPA Safer Chemical:

EPA labels products so that consumers can easily choose ones that are safer for people and the environment. When consumers see the Safer Choice label on a product, they can be confident that the ingredients have been through a rigorous EPA review. The label means that EPA scientists have evaluated every ingredient in the product to ensure it meets Safer Choice's stringent criteria. When people use Safer Choice products, they are protecting their families and the environment by making safer chemical choices.

EPA Safer Chemical

>> Chemical: Sulfurous acid, monosodium salt

>> Green circle - The chemical has been verified to be of low concern based on experimental and modeled data.

Health Hazards:

>> Powder is irritating to eyes, nose, and throat and can irritate skin. Ingestion may cause irritation of stomach. Very large doses cause violent colic, diarrhea, depression, and death. (USCG, 1999)

>> Excerpt from ERG Guide 154 [Substances - Toxic and/or Corrosive (Non-Combustible)]:

>> Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Some are oxidizers and may ignite combustibles (wood, paper, oil, clothing, etc.). Corrosives in contact with

metals may evolve flammable hydrogen gas. Containers may explode when heated. For electric vehicles or equipment, ERG Guide 147 (lithium ion or sodium ion batteries) or ERG Guide 138 (sodium batteries) should also be consulted. (ERG, 2024)

>> Not combustible. Gives off irritating or toxic fumes (or gases) in a fire. Risk of fire and explosion on contact with acids or oxidants.

3. Composition/Information On Ingredients

Chemical name : Sodium bisulfite
CAS Number : 7631-90-5
Molecular Formula : HNaO3S
Molecular Weight : 104.0600 g/mol

4. First Aid Measures

First Aid:

>> Excerpt from NIOSH Pocket Guide for Sodium bisulfite:

>> Eye: IRRIGATE IMMEDIATELY - If this chemical contacts the eyes, immediately wash (irrigate) the eyes with large amounts of water, occasionally lifting the lower and upper lids. Get medical attention immediately.

>> Breathing: FRESH AIR - If a person breathes large amounts of this chemical, move the exposed person to fresh air at once. Other measures are usually unnecessary.

>> Swallow: MEDICAL ATTENTION IMMEDIATELY - If this chemical has been swallowed, get medical attention immediately. (NIOSH, 2024)

First Aid Measures

Inhalation First Aid

>> Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

Skin First Aid

>> Rinse skin with plenty of water or shower.

Eye First Aid

>> Rinse with plenty of water for several minutes (remove contact lenses if easily possible).

Ingestion First Aid

>> Rinse mouth. Refer for medical attention .

5. Fire Fighting Measures

>> Excerpt from ERG Guide 154 [Substances - Toxic and/or Corrosive (Non-Combustible)]:

>> SMALL FIRE: Dry chemical, CO2 or water spray.

>> LARGE FIRE: Dry chemical, CO2, alcohol-resistant foam or water spray. If it can be done safely, move undamaged containers away from the area around the fire. Dike runoff from fire control for later disposal.

>> FIRE INVOLVING TANKS, RAIL TANK CARS OR HIGHWAY TANKS: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks in direct contact with flames. (ERG, 2024)

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>> In case of fire in the surroundings, use appropriate extinguishing media.

6. Accidental Release Measures

Isolation and Evacuation:

Isolation and evacuation measures to take when a large amount of this chemical is accidentally released in an emergency.

>> Excerpt from ERG Guide 154 [Substances - Toxic and/or Corrosive (Non-Combustible)]:

>> IMMEDIATE PRECAUTIONARY MEASURE: Isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.

>> SPILL: Increase the immediate precautionary measure distance, in the downwind direction, as necessary.

>> FIRE: If tank, rail tank car or highway tank is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. (ERG, 2024)

Spillage Disposal:

Methods for containment and safety measures to protect workers dealing with a spillage of this chemical.

>> Personal protection: filter respirator for acid gases and vapours adapted to the airborne concentration of the substance. Collect leaking and spilled liquid in covered non-metallic containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Wash away remainder with plenty of water. Then store and dispose of according to local regulations.

7. Handling And Storage

Safe Storage:

>> Separated from acids, strong oxidants and food and feedstuffs. Well closed.

Storage Conditions:

>> KEEP WELL CLOSED & IN A COOL PLACE.

8. Exposure Control/ Personal Protection

REL-TWA (Time Weighted Average)

>> 5 mg/m³

>> TWA 5 mg/m3

>> none See Appendix G

>> 5.0 [mg/m3]

>> 5 mg/m

TLV-TWA (Time Weighted Average)

>> 5 mg/m³ [1992]

Inhalation Risk:

>> No indication can be given about the rate at which a harmful concentration of this substance in the air is reached.

Effects of Short Term Exposure:

>> The substance is irritating to the skin, eyes, respiratory tract and gastrointestinal tract. Exposure could cause asthma-like reactions or urticaria in sensitive persons.

Effects of Long Term Exposure:

>> Repeated or prolonged inhalation may cause asthma-like symptoms. The substance may have effects on the skin.

Fire Prevention

>> NO contact with acids or strong oxidizing agents. NO contact with incompatible materials: See Chemical Dangers

Inhalation Prevention

>> Use ventilation.

Skin Prevention

>> Protective gloves.

Eye Prevention

>> Wear safety spectacles.

Ingestion Prevention

>> Do not eat, drink, or smoke during work.

9. Physical And Chemical Properties

Molecular Weight:

>> 104.06

Exact Mass:

>> 103.95440935

Physical Description:

>> Sodium bisulfite appears as white crystals or crystalline powder. Slight sulfurous odor. Specific gravity 1.48. Strong irritant to skin and tissue.

>> COLOURLESS-TO-YELLOW LIQUID WITH CHARACTERISTIC ODOUR.

Color/Form:

>> White crystal or crystalline powder

Odor:

>> Slight sulfurous odor

Taste:

The sensation of flavor perceived in the mouth and throat on contact with a substance.

>> Disagreeable taste

Boiling Point:

>> Decomposes (NIOSH, 2024)

>> 104 °C

Melting Point:

>> Decomposes (NIOSH, 2024)

Solubility:

>> 29 % (NIOSH, 2024)

Density:

>> 1.48 at 68 °F (USCG, 1999) - Denser than water; will sink

>> Relative density (water = 1): 1.34

Vapor Pressure:

>> Vapor pressure, kPa at 20 °C: 2.4

Stability/Shelf Life:

>> ON EXPOSURE TO AIR IT LOSES SOME SULFUR DIOXIDE & IS GRADUALLY OXIDIZED TO SULFATE.

Autoignition Temperature:

>> Not flammable (USCG, 1999)

Decomposition:

>> Emits toxic fumes of oxides of sulfur & sodium monoxide when heated to decomposition.

Viscosity:

>> 3.64 mPa*s at 20 °C

pH:

pH is an expression of hydrogen ion concentration in water. Specifically, pH is the negative logarithm of hydrogen ion (H+) concentration (mol/L) in an aqueous solution. The term is used to indicate basicity or acidity of a solution on a scale of 0 to 14, with pH 7 being neutral.

>> 2,5-5,5 (10 % aqueous solution)

Refractive Index:

>> INDEX OF REFRACTION: 1.526

10. Stability And Reactivity

>> Water soluble.

>> Strong Reducing Agent

11. Toxicological Information

Evidence for Carcinogenicity:

Evidence that this chemical does or may cause cancer. The information here is collected from various sources by the Hazardous Substances Data Bank (HSDB).

>> Evaluation: There is inadequate evidence for the carcinogenicity in humans of sulfur dioxide, sulfites, bisulfites and metabisulfites. There is limited evidence for the carcinogenicity in experimental animals of sulfur dioxide. There is inadequate evidence for the carcinogenicity in experimental animals of sulfites, bisulfites and metabisulfites. Overall evaluation: Sulfur dioxide, sulfites, bisulfites and metabisulfites are not classifiable as to their carcinogenicity to humans (Group 3).

Exposure Routes:

>> The substance can be absorbed into the body by ingestion.

>> inhalation, ingestion, skin and/or eye contact

Inhalation Exposure

>> Cough. Shortness of breath. Wheezing.

Skin Exposure

>> Redness.

Eye Exposure

>> Redness.

Ingestion Exposure

>> Abdominal pain. Nausea. Vomiting.

>> irritation eyes, skin, mucous membrane

Target Organs:

Organs that are affected by exposure to this chemical. Information in this section reflects human data unless otherwise noted.

>> Eyes, skin, respiratory system

Adverse Effects:

An adverse effect is an undesired harmful effect resulting from a medical treatment or other intervention.

>> Asthma - Reversible bronchoconstriction (narrowing of bronchioles) initiated by the inhalation of irritating or allergenic agents.

>> ACGIH Carcinogen - Not Classifiable.

Interactions:

>> ANTIOXIDANT SODIUM BISULFITE HAS ABILITY TO INCR OR INHIBIT MUTAGENIC ACTIVITY OF N-METHYL-N'-NITRO-N-NITROSOGUANIDINE &/OR THAT OF N-ACETOXY-2-ACETYLAMINOFLUORENE.

Antidote and Emergency Treatment:

>> Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary ... . Anticipate seizures and treat if necessary ... . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport ... . Do not use emetics. For ingestion, rinse mouth and administer 5 m1/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool ... . Administer activated charcoal ... . Cover skin burns with dry sterile dressings after decontamination ... . /Sulfur and related compounds/

Human Toxicity Excerpts:

>> Dermatitis resulting from exposure of restaurant workers to preservatives in meat.

Non-Human Toxicity Excerpts:

>> ... IP LD50's RANGE FROM 244 MG/KG IN THE DOG TO 675 MG/KG IN THE MOUSE. IV LD50's (65 MG/KG IN THE RABBIT TO 130 MG/KG IN THE MOUSE) ALSO INDICATE THAT SMALL ANIMALS ARE LESS SUSCEPTIBLE THAN LARGE ONES. GIVEN PARENTERALLY AT THE SAME DOSE, CONCENTRATED SOLUTIONS ARE MORE TOXIC THAN DILUTE ONES. RABBITS TOLERATED THE IV ADMINISTRATION OF 0.67 LD50's EVERY 8 HR, 5 DAYS/WK FOR 3 WK. ...

Non-Human Toxicity Values:

>> LD50 Rat oral 2 g/kg

12. Ecological Information

ICSC Environmental Data:

>> This substance may be hazardous to the environment. Special attention should be given to water quality.

13. Disposal Considerations

Spillage Disposal

>> Personal protection: filter respirator for acid gases and vapours adapted to the airborne concentration of the substance. Collect leaking and spilled liquid in covered non-metallic containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Wash away remainder with plenty of water. Then store and dispose of according to local regulations.

Disposal Methods

>> SRP: At the time of review, criteria for land treatment or burial (sanitary landfill) disposal practices are subject to significant revision. Prior to implementing land disposal of waste residue (including waste sludge), consult with environmental regulatory agencies for guidance on acceptable disposal practices.

14. Transport Information

DOT

Sodium bisulfite

Reportable Quantity of 5000 lb or 2270 kg

IATA

Sodium bisulfite

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15. Regulatory Information

Clean Water Act Requirements:

The Clean Water Act (CWA) of 1972 establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Under CWA, the U.S. Environmental Protection Agency (EPA) developed the Toxic Pollutant List (40 CFR Part 401.15) and the Priority Pollutant List (40 CFR Part 423, Appendix A). These lists are to be used by EPA and States to develop the Effluent Guidelines regulations and ensure water quality criteria and standards.

>> Sodium bisulfite is designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of this substance. This designation includes any isomers and hydrates, as well as any solutions and mixtures containing this substance.

TSCA Requirements:

This section provides information on requirements concerning this chemical under the Toxic Substances Control Act (TSCA) of 1976. TSCA provides EPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. Certain substances are generally excluded from TSCA, including, among others, food, drugs, cosmetics and pesticides.

>> Section 8(a) of TSCA requires manufacturers of this chemical substance to report preliminary assessment information concerned with production, use, and exposure to EPA as cited in the preamble in 51 FR 41329.

Regulatory Information

The Australian Inventory of Industrial Chemicals

>> Chemical: Sulfurous acid, monosodium salt

REACH Registered Substance

>> Status: Active Update: 16-05-2023 https://echa.europa.eu/registration-dossier/-/registered-dossier/15334

New Zealand EPA Inventory of Chemical Status

>> Sodium bisulphite: Does not have an individual approval but may be used under an appropriate group standard

16. Other Information

Other Safety Information

Chemical Assessment

>> IMAP assessments - Sulfites: Human health tier II assessment

>> IMAP assessments - Sulfurous acid, monosodium salt: Environment tier I assessment

"The information provided is believed to be accurate but is not comprehensive and should be used as a reference. It reflects our current knowledge and is intended for safety guidance related to the product. This document does not constitute a warranty of the product's properties. Ionz is not responsible for any damages resulting from handling or contact with the product incorrectly."