SAFETY DATA SHEET

Updated on 26/09/2024

1. Material Identification

Product Name : Ammonium bisulfite
Catalog Number : io-1708
CAS Number : 10192-30-0
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)

Note

>> Pictograms displayed are for 96.3% (156 of 162) of reports that indicate hazard statements. This chemical does not meet GHS hazard criteria for 3.7% (6 of 162) of reports.

Pictogram(s)

>> Warning

GHS Hazard Statements

>> H315 (38.3%): Causes skin irritation [Warning Skin corrosion/irritation]

>> H319 (94.4%): Causes serious eye irritation [Warning Serious eye damage/eye irritation]

>> H335 (37.7%): May cause respiratory irritation [Warning Specific target organ toxicity, single exposure; Respiratory tract irritation]

Precautionary Statement Codes

>> P261, P264, P264+P265, P271, P280, P302+P352, P304+P340, P305+P351+P338, P319, P321, P332+P317, P337+P317, P362+P364, P403+P233, P405, and P501

Health Hazards:

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

>> TOXIC and/or CORROSIVE; inhalation, ingestion or skin contact with material may cause severe injury or death. Contact with molten substance may cause severe burns to skin and eyes. Avoid any skin contact. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause environmental contamination. (ERG, 2024)

>> Special Hazards of Combustion Products: None (USCG, 1999)

>> 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 : Ammonium bisulfite
CAS Number : 10192-30-0
Molecular Formula : H5NO3S
Molecular Weight : 99.1100 g/mol

4. First Aid Measures

First Aid:

>> Call a physician.

>> EYES: Flush with water.

>> SKIN: Flush exposed area with water. (USCG, 1999)

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 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 strong oxidants, acids and food and feedstuffs. Well closed.

Storage Conditions:

>> KEEP WELL CLOSED.

8. Exposure Control/ Personal Protection

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 eyes, skin, 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 oxidizing agents. NO contact with incompatible materials: See Chemical Dangers

Inhalation Prevention

>> Use ventilation (not if powder).

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:

>> 99.11

Exact Mass:

>> 98.99901420

Physical Description:

>> Ammonium bisulfite is colorless crystals which are soluble in water. It is noncombustible. It is corrosive to aluminum. It is a strong irritant to skin and mucous membranes. It is toxic by skin absorption.

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

Color/Form:

>> Colorless crystals

Boiling Point:

>> Sublimates at 302.0 °F (USCG, 1999)

>> at 101.1kPa: 100 °C

Melting Point:

>> -10 °C

Solubility:

>> In water: 267 g/100 ml @ 10 °C, 620 G/100 ml @ 60 °C

>> Solubility in water, g/100ml at 10 °C: 267 (very good)

Density:

>> 2.03 at 68 °F 1.40 (72% aqueous solution) (USCG, 1999) - Denser than water; will sink

>> Relative density (water = 1): 2.0

Decomposition:

>> When heated to decomp it emits toxic vapors of /ammonia/.

Corrosivity:

The ability of a chemical to damage or destroy other substances when it comes into contact.

>> A corrosive solid.

10. Stability And Reactivity

>> Water soluble.

>> Strong Reducing Agent

11. Toxicological Information

Exposure Routes:

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

Inhalation Exposure

>> Cough. Shortness of breath. Wheezing.

Skin Exposure

>> Redness.

Eye Exposure

>> Redness.

Ingestion Exposure

>> Abdominal pain. Nausea. Vomiting.

Antidote and Emergency Treatment:

>> Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for signs of pulmonary edema and treat if necessary ... . Monitor for shock 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 mg/kg up to 200 ml of water for dilution if the patent can swallow, has a strong gag reflex, and does not drool ... . Do not attempt to neutralize. /Ammonia and related compounds/

Human Toxicity Excerpts:

>> ...WITH LARGE DOSES OF...AMMONIUM /SALTS/, THERE ARISES THE POSSIBILITY OF SUFFICIENT ABSORPTION TO PRODUCE DIURESIS & SYSTEMIC AMMONIA POISONING, PARTICULARLY IF MATERIAL IS ADMIN PARENTERALLY. /AMMONIUM SALTS/

12. Ecological Information

ICSC Environmental Data:

>> The substance is harmful to aquatic organisms.

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 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

Ammonium bisulfite
8
UN Pack Group: III
Reportable Quantity of 5000 lb or 2270 kg

IATA

Ammonium bisulfite
8,
UN Pack Group: III

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.

>> Ammonium 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.

Regulatory Information

The Australian Inventory of Industrial Chemicals

>> Chemical: Sulfurous acid, monoammonium salt

REACH Registered Substance

>> Status: Active Update: 19-12-2022 https://echa.europa.eu/registration-dossier/-/registered-dossier/14587

New Zealand EPA Inventory of Chemical Status

>> Ammonium 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, monoammonium 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."