SAFETY DATA SHEET

Updated on 26/09/2024

1. Material Identification

Product Name : Ammonium sulfamate
Catalog Number : io-1722
CAS Number : 7773-06-0
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

>> This chemical does not meet GHS hazard criteria for 55.9% (165 of 295) of all reports. Pictograms displayed are for 44.1% (130 of 295) of reports that indicate hazard statements.

Pictogram(s)

>> Warning

GHS Hazard Statements

>> H302 (44.1%): Harmful if swallowed [Warning Acute toxicity, oral]

>> H400 (13.2%): Very toxic to aquatic life [Warning Hazardous to the aquatic environment, acute hazard]

Precautionary Statement Codes

>> P264, P270, P273, P301+P317, P330, P391, and P501

Health Hazards:

>> Inhalation causes irritation of nose and throat. Ingestion causes gastrointestinal disturbances. Dust irritates eyes. (USCG, 1999)

>> Special Hazards of Combustion Products: Toxic oxides of nitrogen may form in fires. (USCG, 1999)

>> Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.

3. Composition/Information On Ingredients

Chemical name : Ammonium sulfamate
CAS Number : 7773-06-0
Molecular Formula : H6N2O3S
Molecular Weight : 114.1300 g/mol

4. First Aid Measures

First Aid:

>> Excerpt from NIOSH Pocket Guide for Ammonium sulfamate:

>> 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.

>> Skin: SOAP WASH PROMPTLY - If this chemical contacts the skin, promptly wash the contaminated skin with soap and water. If this chemical penetrates the clothing, promptly remove the clothing and wash the skin with soap and water. Get medical attention promptly.

>> Breathing: RESPIRATORY SUPPORT - If a person breathes large amounts of this chemical, move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible.

>> 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.

Skin First Aid

>> Rinse skin with plenty of water or shower.

Eye First Aid

>> First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Ingestion First Aid

>> Rinse mouth.

5. Fire Fighting Measures

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

6. Accidental Release Measures

Spillage Disposal:

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

>> Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. Then wash away with plenty of water.

7. Handling And Storage

Safe Storage:

>> Dry. Well closed. Separated from strong oxidants and acids.

Storage Conditions:

>> Storage temp: ambient

8. Exposure Control/ Personal Protection

REL-TWA (Time Weighted Average)

>> 10 mg/m³ (total dust), 5 mg/m³ (respirable fraction)

>> TWA 10 mg/m3 (total) TWA 5 mg/m3 (resp)

>> 15.0 [mg/m3](total dust), 5 mg/m3(respirable fraction)

PEL-TWA (8-Hour Time Weighted Average)

>> 15 mg/m³ (total dust), 5 mg/m³ (respirable fraction)

>> 10.0 [mg/m3]

>> 10 mg/m

TLV-TWA (Time Weighted Average)

>> 10 mg/m³ [1956]

Inhalation Risk:

>> A harmful concentration of airborne particles can be reached quickly on spraying or when dispersed, especially if powdered.

Effects of Short Term Exposure:

>> The substance is irritating to the eyes.

Acceptable Daily Intakes:

An estimate of the amount of a chemical in food or drinking water that can be consumed daily over a lifetime without presenting an appreciable risk to health. It is usually expressed as milligrams of the substance per kilogram of body weight per day and applies to chemicals such as food additives, pesticide residues and veterinary drugs.

>> Oral RfD: 0.2 mg/kg/day (Uncertainty factor: 1000, Modifying factor: 1)

Inhalation Prevention

>> Use local exhaust or breathing protection.

Skin Prevention

>> Protective gloves.

Eye Prevention

>> Wear safety goggles.

Ingestion Prevention

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

9. Physical And Chemical Properties

Molecular Weight:

>> 114.13

Exact Mass:

>> 114.00991323

Physical Description:

>> Ammonium sulfamate is a white crystalline solid. It is soluble in water. The primary hazard is the threat to the environment. Immediate steps should be taken to limit its spread to the environment. It is used to flameproof fabrics and papers, in weed or brush killing products, and for other uses.

>> COLOURLESS-TO-WHITE HYGROSCOPIC CRYSTALLINE POWDER.

Color/Form:

>> Hygroscopic crystals (large plates)

Odor:

>> Odorless

Boiling Point:

>> Decomposes above 392.0 °F (USCG, 1999)

Melting Point:

>> 268 °F (USCG, 1999)

>> 131 °C

Solubility:

>> 200 % (NIOSH, 2024)

>> Solubility in water: very good

Density:

>> greater than 1 at 68 °F (USCG, 1999)

>> Relative density (water = 1): 1.8

Vapor Pressure:

>> 0 mmHg (approx) (NIOSH, 2024)

>> Vapor pressure at 20 °C: negligible

Stability/Shelf Life:

>> Hydrolysed at higher temperatures and in acidic conditions.

Decomposition:

>> Toxic gases and vapors (such as ... carbon monoxide) may be released when ammonium sulfamate decomposes.

>> 160 °C

Corrosivity:

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

>> CORROSIVE TO SPRAY EQUIPMENT

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.

>> pH of 0.27M soln in water = 4.9

10. Stability And Reactivity

>> Highly exothermic reaction with hot water.

11. Toxicological Information

Exposure Routes:

>> inhalation, skin and/or eye contact

Eye Exposure

>> Redness. Pain.

>> irritation eyes, nose, throat; cough, dyspnea (breathing difficulty)

Target Organs:

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

>> Eyes, respiratory system

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:

>> /HUMAN EXPOSURE STUDIES/ Ingestion causes GI disturbances.

Non-Human Toxicity Excerpts:

>> /LABORATORY ANIMALS: Acute Exposure/ Repeated application of 50% aqueous solutions to the shaved skin of rats caused no irritation or systemic toxicity.

Non-Human Toxicity Values:

>> LD50 Mouse oral 3100 mg/kg

12. Ecological Information

Resident Soil (mg/kg)

>> 1.60e+04

Industrial Soil (mg/kg)

>> 2.30e+05

Tapwater (ug/L)

>> 4.00e+03

MCL (ug/L)

>> 4.00e+00

Chronic Oral Reference Dose (mg/kg-day)

>> 2.00e-01

Volatile

>> Volatile

Mutagen

>> Mutagen

Fraction of Contaminant Absorbed in Gastrointestinal Tract

>> 1

13. Disposal Considerations

Spillage Disposal

>> Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. Then wash away with plenty of water.

Disposal Methods

>> SRP: The most favorable course of action is to use an alternative chemical product with less inherent propensity for occupational exposure or environmental contamination. Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the materials impact on air quality; potential migration in soil or water; effects on animal, aquatic, and plant life; and conformance with environmental and public health regulations.

14. Transport Information

DOT

Ammonium sulfamate

Reportable Quantity of 5000 lb or 2270 kg

IATA

Ammonium sulfamate

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15. Regulatory Information

Federal Drinking Water Guidelines:

Federal drinking water guidelines (e.g. maximum containment level (MCL)) for this chemical. In general, these guidelines are recommendations and not legally enforceable.

>> EPA 2000 ug/L

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 sulfamate 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: Sulfamic acid, monoammonium salt

The Australian Inventory of Industrial Chemicals

>> Chemical: Sulfamic acid, ammonium salt

REACH Registered Substance

>> Status: Active Update: 08-03-2021 https://echa.europa.eu/registration-dossier/-/registered-dossier/25230

>> Status: Active Update: 16-04-2021 https://echa.europa.eu/registration-dossier/-/registered-dossier/25448

New Zealand EPA Inventory of Chemical Status

>> Sulfamic acid, ammonium salt: Does not have an individual approval but may be used as a component in a product covered by a group standard. It is not approved for use as a chemical in its own right.

New Zealand EPA Inventory of Chemical Status

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

16. Other Information

Toxic Combustion Products:

Toxic products (e.g., gases and vapors) produced from the combustion of this chemical.

>> Poisonous gases may be produced in fire.

"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."