

1. Material Identification

Product Name : Butyric acid

Catalog Number : io-1892

CAS Number : 107-92-6

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)



GHS Hazard Statements

>> H302 (12.7%): Harmful if swallowed [Warning Acute toxicity, oral]

>> H314 (99%): Causes severe skin burns and eye damage [Danger Skin corrosion/irritation]

>> H318 (11.3%): Causes serious eye damage [Danger Serious eye damage/eye irritation]

Precautionary Statement Codes

>> P260, P264, P264+P265, P270, P280, P301+P317, P301+P330+P331, P302+P361+P354, P304+P340, P305+P354+P338, P316, P317, P321, P330, P363, P405, and P501

NFPA 704 Diamond



NFPA Health Rating

>> 3 – Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA Fire Rating

>> 2 – Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air.

NFPA Instability Rating

>> 0 – Materials that in themselves are normally stable, even under fire conditions.

Health Hazards:

- >> Inhalation causes irritation of mucous membrane and respiratory tract; may cause nausea and vomiting. Ingestion causes irritation of mouth and stomach. Contact with eyes may cause serious injury. Contact with skin may cause burns; chemical is readily absorbed through the skin and may cause damage by this route. (USCG, 1999)

ERG 2024, Guide 153 (Butyric acid)

- >> TOXIC and/or CORROSIVE; inhalation, ingestion or skin contact with material may cause severe injury or death.
- >> Methyl bromoacetate (UN2643) is an eye irritant/lachrymator (causes flow of tears).
- >> 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.
- >> Excerpt from ERG Guide 153 [Substances – Toxic and/or Corrosive (Combustible)]:
- >> Combustible material: may burn but does not ignite readily. When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. Corrosives in contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. Runoff may pollute waterways. Substance may be transported in a molten form. (ERG, 2024)

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- >> Containers may explode when heated.
- >> Runoff may pollute waterways.
- >> Substance may be transported in a molten form.
- >> Combustible. Gives off irritating or toxic fumes (or gases) in a fire. Above 72 °C explosive vapour/air mixtures may be formed.

3. Composition/Information On Ingredients

Chemical name : Butyric acid
CAS Number : 107-92-6
Molecular Formula : C₄H₈O₂
Molecular Weight : 88.1100 g/mol

4. First Aid Measures

First Aid:

- >> EYES: First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.
- >> SKIN: IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. IMMEDIATELY call a hospital or poison control center even if no symptoms (such as redness or irritation) develop. IMMEDIATELY transport the victim to a hospital for treatment after washing the affected areas.
- >> INHALATION: IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Protective Clothing.

- >> INGESTION: DO NOT INDUCE VOMITING. Corrosive chemicals will destroy the membranes of the mouth, throat, and esophagus and, in addition, have a high risk of being aspirated into the victim's lungs during vomiting which increases the medical problems. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. IMMEDIATELY transport the victim to a hospital. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. Transport the victim IMMEDIATELY to a hospital. (NTP, 1992)

ERG 2024, Guide 153 (Butyric acid)

- >> General First Aid:
- >> Call 911 or emergency medical service.
- >> Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and avoid contamination.
- >> Move victim to fresh air if it can be done safely.
- >> Administer oxygen if breathing is difficult.
- >> If victim is not breathing:
 - >> DO NOT perform mouth-to-mouth resuscitation; the victim may have ingested or inhaled the substance.
 - >> If equipped and pulse detected, wash face and mouth, then give artificial respiration using a proper respiratory medical device (bag-valve mask, pocket mask equipped with a one-way valve or other device).
 - >> If no pulse detected or no respiratory medical device available, provide continuous compressions. Conduct a pulse check every two minutes or monitor for any signs of spontaneous respirations.
- >> Remove and isolate contaminated clothing and shoes.
- >> For minor skin contact, avoid spreading material on unaffected skin.
- >> In case of contact with substance, remove immediately by flushing skin or eyes with running water for at least 20 minutes.
- >> For severe burns, immediate medical attention is required.
- >> Effects of exposure (inhalation, ingestion, or skin contact) to substance may be delayed.
- >> Keep victim calm and warm.
- >> Keep victim under observation.
- >> For further assistance, contact your local Poison Control Center.
- >> Note: Basic Life Support (BLS) and Advanced Life Support (ALS) should be done by trained professionals.
- >> Specific First Aid:
 - >> For corrosives, in case of contact, immediately flush skin or eyes with running water for at least 30 minutes. Additional flushing may be required.
 - >> Removal of solidified molten material from skin requires medical assistance.
 - >> In Canada, an Emergency Response Assistance Plan (ERAP) may be required for this product. Please consult the shipping paper and/or the "ERAP" section.

First Aid Measures

Inhalation First Aid

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

Skin First Aid

- >> Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

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. Do NOT induce vomiting. Refer for medical attention .

5. Fire Fighting Measures

- >> Excerpt from ERG Guide 153 [Substances – Toxic and/or Corrosive (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)
- >> Use water spray, powder, alcohol-resistant foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

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 153 [Substances – Toxic and/or Corrosive (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)

Evacuation: ERG 2024, Guide 153 (Butyric acid)

- >> 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
- >> For non-highlighted materials: 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.

Spillage Disposal:

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

- >> Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Cautiously neutralize remainder with soda lime. Then wash away with plenty of water.

Accidental Release Measures

Public Safety: ERG 2024, Guide 153 (Butyric acid)

- >> CALL 911. Then call emergency response telephone number on shipping paper. If shipping paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- >> Keep unauthorized personnel away.
- >> Stay upwind, uphill and/or upstream.
- >> Ventilate closed spaces before entering, but only if properly trained and equipped.

Spill or Leak: ERG 2024, Guide 153 (Butyric acid)

- >> ELIMINATE all ignition sources (no smoking, flares, sparks or flames) from immediate area.
- >> Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- >> Stop leak if you can do it without risk.

- >> Prevent entry into waterways, sewers, basements or confined areas.
- >> Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- >> DO NOT GET WATER INSIDE CONTAINERS.

7. Handling And Storage

Safe Storage:

- >> Separated from strong oxidants, strong bases and food and feedstuffs.

Storage Conditions:

- >> Store in cool, dry, well-ventilated location, away from any area where fire hazard may be acute.

8. Exposure Control/ Personal Protection

Emergency Response: ERG 2024, Guide 153 (Butyric acid)

- >> 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.

Inhalation Risk:

- >> No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20 °C.

Effects of Short Term Exposure:

- >> The substance is corrosive to the eyes, skin and respiratory tract.

Fire Prevention

- >> NO open flames. Above 72 °C use a closed system and ventilation.

Exposure Prevention

- >> AVOID ALL CONTACT! IN ALL CASES CONSULT A DOCTOR!

Inhalation Prevention

- >> Use ventilation, local exhaust or breathing protection.

Skin Prevention

- >> Protective gloves. Protective clothing.

Eye Prevention

- >> Wear face shield or eye protection in combination with breathing protection.

Ingestion Prevention

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

Exposure Control and Personal Protection

Protective Clothing: ERG 2024, Guide 153 (Butyric acid)

>> Wear positive pressure self-contained breathing apparatus (SCBA).

>> Wear chemical protective clothing that is specifically recommended by the manufacturer when there is NO RISK OF FIRE.

>> Structural firefighters' protective clothing provides thermal protection but only limited chemical protection.

9. Physical And Chemical Properties

Molecular Weight:

>> 88.11

Exact Mass:

>> 88.052429494

Physical Description:

>> Butyric acid appears as a colorless liquid with a penetrating and unpleasant odor. Flash point 170 °F. Corrosive to metals and tissue. Density 8.0 lb /gal.

>> COLOURLESS OILY LIQUID WITH CHARACTERISTIC ODOUR.

Color/Form:

>> Oily liquid

Odor:

>> Unpleasant, rancid odor

Taste:

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

>> Butter-fat taste

Boiling Point:

>> 326.3 °F at 760 mmHg (NTP, 1992)

>> 164 °C

Melting Point:

>> 17.8 °F (NTP, 1992)

>> -7.9 °C

Flash Point:

>> 170 °F (NTP, 1992)

>> 72 °C c.c.

Solubility:

>> greater than or equal to 100 mg/mL at 66 °F (NTP, 1992)

>> Solubility in water: miscible

Density:

>> 0.958 at 68 °F (USCG, 1999) – Less dense than water; will float

>> Relative density (water = 1): 0.96

Vapor Density:

>> 3.04 (NTP, 1992) – Heavier than air; will sink (Relative to Air)

>> Relative vapor density (air = 1): 3

Vapor Pressure:

>> 0.43 mmHg at 68 °F ; 1.4 mmHg at 86 °F (NTP, 1992)

>> Vapor pressure, Pa at 20 °C: 57

LogP:

>> 0.79

LogS:

The base-10 logarithm of the aqueous solubility of this compound.

Stability/Shelf Life:

>> It has good stability

Autoignition Temperature:

>> 842 °F (USCG, 1999)

>> 452 °C

Viscosity:

>> 1.426 mPa-s at 25 °C

Corrosivity:

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

>> Corrosive material

Heat of Combustion:

>> 521.87 kg cal/gm at 25 °C

Heat of Vaporization:

>> 40.45 kJ/mol at 25 °C

Surface Tension:

>> 26.05 mN/m at 25 °C

Odor Threshold:

>> 0.001 mg/cu m (Odor low) 9 mg/cu m (Odor high)

Refractive Index:

>> Index of refraction: 1.3991 at 20 °C/D

Dissociation Constants:**pKa**

>> 4.82 (at 25 °C)

>> pKa = 4.82 at 25 °C

10. Stability And Reactivity

>> Water soluble.

11. Toxicological Information

Toxicity Summary:

>> Butyric acid is a cholinesterase or acetylcholinesterase (AChE) inhibitor. A cholinesterase inhibitor (or 'anticholinesterase') suppresses the action of acetylcholinesterase. Because of its essential function, chemicals that interfere with the action of acetylcholinesterase are potent neurotoxins, causing excessive salivation and eye-watering in low doses, followed by muscle spasms and ultimately death. Nerve gases and many substances used in insecticides have been shown to act by binding a serine in the active site of acetylcholine esterase, inhibiting the enzyme completely. Acetylcholine esterase breaks down the neurotransmitter acetylcholine, which is released at nerve and muscle junctions, in order to allow the muscle or organ to relax. The result of acetylcholine esterase inhibition is that acetylcholine builds up and continues to act so that any nerve impulses are continually transmitted and muscle contractions do not stop. Among the most common acetylcholinesterase inhibitors are phosphorus-based compounds,

which are designed to bind to the active site of the enzyme. The structural requirements are a phosphorus atom bearing two lipophilic groups, a leaving group (such as a halide or thiocyanate), and a terminal oxygen.

Carcinogen Classification:

This section provides the International Agency for Research on Cancer (IARC) Carcinogenic Classification and related monograph links. In the IARC Carcinogenic classification, chemicals are categorized into four groups: Group 1 (carcinogenic to humans), Group 2A (probably carcinogenic to humans), Group 2B (possibly carcinogenic to humans), and Group 3 (not classifiable as to its carcinogenicity to humans).

>> No indication of carcinogenicity to humans (not listed by IARC).

Health Effects:

>> Acute exposure to cholinesterase inhibitors can cause a cholinergic crisis characterized by severe nausea/vomiting, salivation, sweating, bradycardia, hypotension, collapse, and convulsions. Increasing muscle weakness is a possibility and may result in death if respiratory muscles are involved. Accumulation of ACh at motor nerves causes overstimulation of nicotinic expression at the neuromuscular junction. When this occurs symptoms such as muscle weakness, fatigue, muscle cramps, fasciculation, and paralysis can be seen. When there is an accumulation of ACh at autonomic ganglia this causes overstimulation of nicotinic expression in the sympathetic system. Symptoms associated with this are hypertension, and hypoglycemia. Overstimulation of nicotinic acetylcholine receptors in the central nervous system, due to accumulation of ACh, results in anxiety, headache, convulsions, ataxia, depression of respiration and circulation, tremor, general weakness, and potentially coma. When there is expression of muscarinic overstimulation due to excess acetylcholine at muscarinic acetylcholine receptors symptoms of visual disturbances, tightness in chest, wheezing due to bronchoconstriction, increased bronchial secretions, increased salivation, lacrimation, sweating, peristalsis, and urination can occur. Certain reproductive effects in fertility, growth, and development for males and females have been linked specifically to organophosphate pesticide exposure. Most of the research on reproductive effects has been conducted on farmers working with pesticides and insecticides in rural areas. In females menstrual cycle disturbances, longer pregnancies, spontaneous abortions, stillbirths, and some developmental effects in offspring have been linked to organophosphate pesticide exposure. Prenatal exposure has been linked to impaired fetal growth and development. Neurotoxic effects have also been linked to poisoning with OP pesticides causing four neurotoxic effects in humans: cholinergic syndrome, intermediate syndrome, organophosphate-induced delayed polyneuropathy (OPIDP), and chronic organophosphate-induced neuropsychiatric disorder (COPIND). These syndromes result after acute and chronic exposure to OP pesticides.

Exposure Routes:

>> The substance can be absorbed into the body by inhalation of its vapour.

Inhalation Exposure

>> Sore throat. Cough. Burning sensation. Shortness of breath. Laboured breathing. Symptoms may be delayed.

Skin Exposure

>> Pain. Redness. Blisters. Skin burns.

Eye Exposure

>> Pain. Redness. Severe deep burns. Loss of vision.

Ingestion Exposure

>> Burning sensation. Abdominal pain. Shock or collapse.

>> Symptoms of low dose exposure include excessive salivation and eye-watering. Acute dose symptoms include severe nausea/vomiting, salivation, sweating, bradycardia, hypotension, collapse, and convulsions. Increasing muscle weakness is a possibility and may result in death if respiratory muscles are involved. Hypertension, hypoglycemia, anxiety, headache, tremor and ataxia may also result.

Adverse Effects:

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

>> Dermatotoxin – Skin burns.

Toxicity Data:

>> LC (rat) > 500 mg/m³

Treatment:

Treatment when exposed to toxin

>> If the compound has been ingested, rapid gastric lavage should be performed using 5% sodium bicarbonate. For skin contact, the skin should be washed with soap and water. If the compound has entered the eyes, they should be washed with large quantities of isotonic saline or water. In serious cases, atropine and/or pralidoxime should be administered. Anti-cholinergic drugs work to counteract the effects of excess acetylcholine and reactivate AChE. Atropine can be

used as an antidote in conjunction with pralidoxime or other pyridinium oximes (such as trimedoxime or obidoxime), though the use of '-oximes' has been found to be of no benefit, or possibly harmful, in at least two meta-analyses. Atropine is a muscarinic antagonist, and thus blocks the action of acetylcholine peripherally.

Interactions:

>> n-Butyrate was previously found to increase the epidermal growth factor receptor binding in primary cultures of rat hepatocytes. /It was shown/ that butyrate and dexamethasone synergistically modulate the surface expression of epidermal growth factor receptors. The butyrate-induced enhancement of high-affinity epidermal growth factor binding was only slight in the absence of glucocorticoid, but was strongly and dose-dependently amplified by dexamethasone. Butyrate counteracted the inhibition by insulin of the dexamethasone-induced increase in epidermal growth factor binding. The results indicate that the glucocorticoid has a permissive effect on a butyrate-sensitive process that determines the surface expression of the high-affinity class of epidermal growth factor receptors.

Antidote and Emergency Treatment:

>> /SRP:/ Basic treatment: Establish a patent airway (oropharyngeal or nasopharyngeal airway, if needed). Suction if necessary. Watch for signs of respiratory insufficiency and assist respirations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for 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 0.9% saline (NS) during transport Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Activated charcoal is not effective Do not attempt to neutralize because of exothermic reaction. Cover skin burns with dry, sterile dressings after decontamination /Organic acids and related compounds/

Human Toxicity Excerpts:

>> /SIGNS AND SYMPTOMS/ Butyric acid can act as a mild skin irritant in humans ... Application to intact human skin elicits a moderate burning sensation only after 52 min, and erythema is hardly noticeable. Slight epidermal scaling may follow within 24 hr.

Non-Human Toxicity Excerpts:

>> /LABORATORY ANIMALS: Acute Exposure/ After a 90 min exposure to a butyric acid aerosol (40 mg/L), rabbits displayed increased lethargy and dyspnea. Signs of bronchial and capillary dilation and emphysema were evident upon necropsy.[Bingham, E.; Cohrssen, B.; Powell, C.H.; Patty's Toxicology Volumes 1-9 5th ed. John Wiley & Sons. New York, N.Y. (2001), p. 5:708]

Non-Human Toxicity Values:

>> LD50 Rat oral 8.79 g/kg

12. Ecological Information

ICSC Environmental Data:

>> The substance is harmful to aquatic organisms.

Sediment/Soil Concentrations:

Concentrations of this compound in sediment/soil.

>> SEDIMENT: n-Butanoic acid was detected in the sediment of Loch Eil, Scotland, at a conc ranging from trace to 160 ug/g dry weight(1). Detected at a conc of 0.273 mg/g in the sediment of Lake Biwa, Japan, 1981(2).

13. Disposal Considerations

Spillage Disposal

>> Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Cautiously neutralize remainder with soda lime. 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 material's 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.

- >> The following wastewater treatment technologies have been investigated for butyric acid: Concentration process: Biological treatment.
- >> The following wastewater treatment technologies have been investigated for butyric acid: Concentration process: Activated carbon.
- >> The following wastewater treatment technologies have been investigated for butyric acid: Concentration process: Resin adsorption.

14. Transport Information

DOT

Butyric acid

8

UN Pack Group: III

Reportable Quantity of 5000 lb or 2270 kg

IATA

Butyric acid

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.

- >> Butyric acid 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: Butanoic acid

REACH Registered Substance

- >> Status: Active Update: 27-07-2021 <https://echa.europa.eu/registration-dossier/-/registered-dossier/13507>

New Zealand EPA Inventory of Chemical Status

- >> Butyric acid: 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.

- >> Products of combustion include carbon dioxide and carbon monoxide as well as irritating fumes.

Other Safety Information

Chemical Assessment

- >> IMAP assessments – Butanoic acid: Environment tier I assessment
- >> IMAP assessments – Butanoic acid: Human health tier II 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."