ionz

SAFETY DATA SHEET

Updated on 26/09/2024

1. Material Identification

Product Name : Propane, 2-methyl
Catalog Number : io-2912
CAS Number : 75-28-5
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)

GHS Hazard Statements

>> H220 (99.7%): Extremely flammable gas [Danger Flammable gases]

>> H280 (37.7%): Contains gas under pressure; may explode if heated [Warning Gases under pressure]

Precautionary Statement Codes

>> P203, P210, P222, P280, P377, P381, P403, and P410+P403

NFPA 704 Diamond

NFPA Health Rating

>> 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

NFPA Fire Rating

>> 4 - Materials that rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and burn readily.

NFPA Instability Rating

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

Health Hazards:

>> Central nervous system depression ranging from dizziness and incoordination to anesthesia and respiratory arrest, depending on concentration and extent of inhalation. Irregular heartbeat is rare but is a dangerous complication at anesthetic levels. (USCG, 1999)

ERG 2024, Guide 115 (Isobutane)

>> Vapors may cause dizziness or asphyxiation without warning, especially when in closed or confined areas.

>> Some may be irritating if inhaled at high concentrations.

>> Contact with gas, liquefied gas or cryogenic liquids may cause burns, severe injury and/or frostbite.

>> Fire may produce irritating and/or toxic gases.

>> Excerpt from ERG Guide 115 [Gases - Flammable (Including Refrigerated Liquids)]:

>> EXTREMELY FLAMMABLE. Will be easily ignited by heat, sparks or flames. Will form explosive mixtures with air. Vapors from liquefied gas are initially heavier than air and spread along ground. CAUTION: Hydrogen (UN1049), Deuterium (UN1957), Hydrogen, refrigerated liquid (UN1966), Methane (UN1971) and Hydrogen and Methane mixture, compressed (UN2034) are lighter than air and will rise. Hydrogen and Deuterium fires are difficult to detect since they burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.) Vapors may travel to source of ignition and flash back. Cylinders exposed to fire may vent and release flammable gas through pressure relief devices. Containers may explode when heated. Ruptured cylinders may rocket. CAUTION: When LNG - Liquefied natural gas (UN1972) is released on or near water, product may vaporize explosively. (ERG, 2024)

ERG 2024, Guide 115 (Isobutane)

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>> Will be easily ignited by heat, sparks or flames.

>> Will form explosive mixtures with air.

>> Vapors from liquefied gas are initially heavier than air and spread along ground.

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>> Vapors may travel to source of ignition and flash back.

>> Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.

>> Containers may explode when heated.

>> Ruptured cylinders may rocket.

>> CAUTION: When LNG - Liquefied natural gas (UN1972) is released on or near water, product may vaporize explosively.

>> Extremely flammable. Gas/air mixtures are explosive.

3. Composition/Information On Ingredients

Chemical name : Propane, 2-methyl
CAS Number : 75-28-5
Molecular Formula : C4H10
Molecular Weight : 58.1200 g/mol

4. First Aid Measures

First Aid:

>> Excerpt from NIOSH Pocket Guide for Isobutane:

>> Eye: FROSTBITE - If eye tissue is frozen, seek medical attention immediately; if tissue is not frozen, immediately and thoroughly flush the eyes with large amounts of water for at least 15 minutes, occasionally lifting the lower and upper eyelids. If irritation, pain, swelling, lacrimation, or photophobia persist, get medical attention as soon as possible.

>> Skin: FROSTBITE - If frostbite has occurred, seek medical attention immediately; do NOT rub the affected areas or flush them with water. In order to prevent further tissue damage, do NOT attempt to remove frozen clothing from frostbitten areas. If frostbite has NOT occurred, immediately and thoroughly wash contaminated skin with soap and water.

>> 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. (NIOSH, 2024)

ERG 2024, Guide 115 (Isobutane)

>> 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 ingestedor 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 continuouscompressions. 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:

>> Clothing frozen to the skin should be thawed before being removed.

>> In case of contact with liquefied gas, only medical personnel should attempt thawing frosted parts.

>> In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.

>> 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. Refer for medical attention.

Skin First Aid

>> ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. 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.

5. Fire Fighting Measures

>> Vapors are heavier than air and will collect in low areas. Vapors may travel long distances to ignition sources and flashback. Vapors in confined areas may explode when exposed to fire. Containers may explode in fire. Storage containers and parts of containers may rocket great distances, in many directions.

>> Excerpt from ERG Guide 115 [Gases - Flammable (Including Refrigerated Liquids)]:

>> DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED. CAUTION: Hydrogen (UN1049), Deuterium (UN1957), Hydrogen, refrigerated liquid (UN1966) and Hydrogen and Methane mixture, compressed (UN2034) will burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.).

>> SMALL FIRE: Dry chemical or CO2.

>> LARGE FIRE: Water spray or fog. If it can be done safely, move undamaged containers away from the area around the fire. CAUTION: For LNG - Liquefied natural gas (UN1972) pool fires, DO NOT USE water. Use dry chemical or high-expansion foam.

>> FIRE INVOLVING TANKS: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Do not direct water at source of leak or safety devices; icing may occur. 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. For massive fire, use unmanned master stream devices or monitor nozzles; if this is impossible, withdraw from area and let fire burn. (ERG, 2024)

>> Shut off supply; if not possible and no risk to surroundings, let the fire burn itself out. In other cases extinguish with water spray. In case of fire: keep cylinder cool by spraying with water. Combat fire from a sheltered position.

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 115 [Gases - Flammable (Including Refrigerated Liquids)]:

>> IMMEDIATE PRECAUTIONARY MEASURE: Isolate spill or leak area for at least 100 meters (330 feet) in all directions.

>> LARGE SPILL: Consider initial downwind evacuation for at least 800 meters (1/2 mile).

>> FIRE: If tank, rail tank car or highway tank is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions. In fires involving Liquefied Petroleum Gases (LPG) (UN1075), Butane (UN1011), Butylene (UN1012), Isobutylene (UN1055), Propylene (UN1077), Isobutane (UN1969), and Propane (UN1978), also refer to the "BLEVE - Safety Precautions" section. (ERG, 2024)

Evacuation: ERG 2024, Guide 115 (Isobutane)

>> Immediate precautionary measure

>> Isolate spill or leak area for at least 100 meters (330 feet) in all directions.

>> Large Spill

>> Consider initial downwind evacuation for at least 800 meters (1/2 mile).

>> Fire

>> If tank, rail tank car or highway tank is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

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Spillage Disposal:

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

>> Evacuate danger area! Consult an expert! Ventilation. Remove all ignition sources. NEVER direct water jet on liquid. Personal protection: filter respirator for organic vapours of low boiling point adapted to the airborne concentration of the substance.

Accidental Release Measures

Public Safety: ERG 2024, Guide 115 (Isobutane)

>> 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.

>> Many gases are heavier than air and will spread along the ground and collect in low or confined areas (sewers, basements, tanks, etc.).

Spill or Leak: ERG 2024, Guide 115 (Isobutane)

>> ELIMINATE all ignition sources (no smoking, flares, sparks or flames) from immediate area.

>> All equipment used when handling the product must be grounded.

>> Do not touch or walk through spilled material.

>> Stop leak if you can do it without risk.

>> If possible, turn leaking containers so that gas escapes rather than liquid.

>> Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.

>> Do not direct water at spill or source of leak.

>> CAUTION: For LNG - Liquefied natural gas (UN1972), DO NOT apply water, regular or alcohol-resistant foam directly on spill. Use a high-expansion foam if available to reduce vapors.

>> Prevent spreading of vapors through sewers, ventilation systems and confined areas.

>> Isolate area until gas has dispersed.

>> CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.

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>> CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.

7. Handling And Storage

Safe Storage:

>> Fireproof. Cool.

Storage Conditions:

>> Keep container tightly closed in a dry and well-ventilated place. Contents under pressure. Storage class (TRGS 510): Gases.

8. Exposure Control/ Personal Protection

REL-TWA (Time Weighted Average)

>> 800 ppm (1900 mg/m³)

>> TWA 800 ppm (1900 mg/m3)

>> none See Appendix G

TLV-STEL

>> 1000.0 [ppm]

>> 15 min Short Term Exposure Limit (STEL): 1000 ppm. Explosion hazard: the substance is a flammable asphyxiant or excursions above the TLV could approach 10% of the lower explosive limit.

>> 1000 ppm as STEL.

TLV-STEL (Short Term Exposure Limit)

>> 1000 ppm [2012]

MAK (Maximale Arbeitsplatz Konzentration)

>> 2400 mg/m

Emergency Response: ERG 2024, Guide 115 (Isobutane)

>> DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.

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>> Small Fire

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>> Large Fire

>> Water spray or fog.

>> If it can be done safely, move undamaged containers away from the area around the fire.

>> CAUTION: For LNG - Liquefied natural gas (UN1972) pool fires, DO NOT USE water. Use dry chemical or high-expansion foam.

>> Fire Involving Tanks

>> Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles.

>> Cool containers with flooding quantities of water until well after fire is out.

>> Do not direct water at source of leak or safety devices; icing may occur.

>> 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.

>> For massive fire, use unmanned master stream devices or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Inhalation Risk:

>> A harmful concentration of this gas in the air will be reached very quickly on loss of containment.

Effects of Short Term Exposure:

>> Rapid evaporation of the liquid may cause frostbite. The substance may cause effects on the cardiovascular system. This may result in impaired functions and respiratory failure. Exposure at high levels could cause death.

Fire Prevention

>> NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding) if in liquid state.

Inhalation Prevention

>> Use ventilation, local exhaust or breathing protection.

Skin Prevention

>> Cold-insulating gloves. Protective clothing.

Eye Prevention

>> Wear safety goggles or face shield.

Ingestion Prevention

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

Exposure Control and Personal Protection

Protective Clothing: ERG 2024, Guide 115 (Isobutane)

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

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

>> Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

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

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Maximum Allowable Concentration (MAK)

>> 1000.0 [ppm] (for Butane, isomers)[German Research Foundation (DFG)]

9. Physical And Chemical Properties

Molecular Weight:

>> 58.12

Exact Mass:

>> 58.078250319

Physical Description:

>> Isobutane is a colorless gas with a faint petroleum-like odor. It is shipped as a liquefied gas under its vapor pressure. Contact with the liquid can cause frostbite. It is easily ignited. The vapors are heavier than air. Any leak can either be liquid or vapor. It can asphyxiate by the displacement of air. Under prolonged exposure to fire or intense heat the containers may rupture violently and rocket.

>> COLOURLESS COMPRESSED LIQUEFIED GAS WITH CHARACTERISTIC ODOUR.

Color/Form:

>> Colorless gas [Note: Shipped as a liquified compressed gas. A liquid below 11 °F]

Odor:

>> Gasoline-like or natural gas odor.

Boiling Point:

>> 10.8 °F at 760 mmHg (USCG, 1999)

>> -12 °C

Melting Point:

>> -255 °F (NIOSH, 2024)

>> -160 °C

Flash Point:

>> -117 °F (USCG, 1999)

>> Flammable gas

Solubility:

>> Slight (NIOSH, 2024)

>> Solubility in water at 20 °C: none

Density:

>> 0.557 at 68 °F (USCG, 1999) - Less dense than water; will float

>> Relative density (water = 1): 0.6 (liquid)

Vapor Density:

>> 2.06 (NIOSH, 2024) - Heavier than air; will sink (Relative to Air)

>> Relative vapor density (air = 1): 2

Vapor Pressure:

>> 3.1 atm at 70 °F (NIOSH, 2024)

>> Vapor pressure, kPa at 20 °C: 304

LogP:

>> log Kow = 2.76

>> 2.8

Stability/Shelf Life:

>> Stable under recommended storage conditions.

Autoignition Temperature:

>> 890 °F (USCG, 1999)

>> 460 °C

Decomposition:

>> When heated to decomposition it emits acrid smoke and irritating fumes.

Viscosity:

>> 0.238 cP at -10 °C

Corrosivity:

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

>> No corrosive action on metals.

Heat of Combustion:

>> -680.84 kcal/mol at 25 °C (liquid); -685.71 kcal/mol at 25 °C (gas)

Heat of Vaporization:

>> 4.570 kcal/mol at 25 °C

Surface Tension:

>> 14.1 dyne/cm at -10 °C

Ionization Potential:

>> 10.74 eV

Refractive Index:

>> Index of refraction: 1.3518 at 25 °C/D

10. Stability And Reactivity

>> Highly flammable.

>> Highly Flammable

11. Toxicological Information

Toxicity Summary:

>> IDENTIFICATION AND USE: Isobutane is a colorless gas. It is used in organic synthesis, as a refrigerant, in motor fuels, and as aerosol propellant, as well as in synthetic rubber, and in instrument calibration fluid. HUMAN STUDIES: Isobutane is a simple asphyxiant. Acute exposure may cause tachypnea and tachycardia. In severe cases, hypotension, apnea, and cardiac arrest develop. Direct contact with the liquid produces chemical burns. Toxicologically, the vapor exerts no effect on skin and eyes. A case of ventricular fibrillation due to isobutane toxicity after unintentional inhalation of air freshener has been reported. The intentional inhalation of a volatile substance ("sniffing") causing euphoria and hallucinations is a form of substance abuse in children and adolescents with a high morbidity and mortality. Sudden death can be caused by cardiac arrhythmia, asphyxia or trauma. Fatal cases of isobutane sniffing of cigarette lighter

refill containing isobutane has been reported. ANIMAL STUDIES: Studies in rabbits exposed through the eyes to undiluted hairspray containing 22% isobutane showed that irritation of the eye was immediately evident with transient iritis and mild conjunctivitis. Acute exposure in dogs to 55 mg/L isobutane was fatal, and 45 mg/L caused anesthesia. Two-hour exposures of mice to 41 mg/L isobutane caused death in 60% of the exposed animals, whereas exposure to 52 mg/L was lethal to 100% of the animals within an average of 28 min. Isobutane is a CNS depressant in the mouse at 15% in 60 min, and at 23% in 26 min. Isobutane caused apnea and finally cardiac arrest in anesthetized rats. Isobutane tested negative in the Ames Salmonella mutagenicity assay.

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:

>> Butane targets the central nervous system and cardiovascular system. Inhalation of butane can cause frostbite which can result in death from asphyxiation and ventricular fibrillation. (L1283, L1284)

Exposure Routes:

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

>> inhalation, skin and/or eye contact (liquid)

Inhalation Exposure

>> Shortness of breath. Suffocation.

Skin Exposure

>> ON CONTACT WITH LIQUID: FROSTBITE.

>> drowsiness, narcosis, asphyxia; liquid: frostbite

Target Organs:

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

>> central nervous system

Adverse Effects:

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

>> Neurotoxin - Acute solvent syndrome

>> Other Poison - Simple Asphyxiant

Toxicity Data:

>> LC50 (rat) = 570,000 ppm/15 min

Treatment:

Treatment when exposed to toxin

>> Treatment for butane poisoning is supportive and symptomatic. Stimulants should not be administered. Recovery normally occurs quickly once exposure has ceased but support of the cardiovascular and respiratory systems may be needed. (L1284)

Antidote and Emergency Treatment:

>> Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. /Simple asphyxiants and related compounds/

Human Toxicity Excerpts:

>> /HUMAN EXPOSURE STUDIES/ Eight adult volunteers of both sexes were exposed to isobutane in a controlled-environment chamber for the purpose of monitoring their physiological responses to a series of gas concentrations ranging from 250 to 1,000 ppm. First, the response to exposure periods of 1 min, 2 min, 1 hr, 2 hr, and 8 hr were studied. There being no untoward responses to these acute exposures, the eight volunteers were exposed repetitively to isobutane at concentrations of 500 ppm, 1, 2 or 8 hr per day, five days per week for two weeks. Then exposures to two

mixtures of isobutane and propane for 1, 2 or 8 hr per day for two days were studied. During the investigation all subjects were kept under comprehensive medical surveillance. No untoward subjective responses or abnormal physiological responses occurred during or following these exposures. Special emphasis was placed on evaluating the cardiac and pulmonary response to these exposures through the use of continuous ECG telemetry and serial computerized spirometric measurements. The following serial laboratory studies were unaltered by the exposures: complete blood count, urinalysis, serum alkaline phosphatase, SGOT, LDH, serum bilirubin, blood sugar, serum calcium, serum phosphorus, BUN, spontaneous electroencephalogram, visual evoked response, a battery of cognitive tests, and an adrenocorticotropic hormone (ACTH) stimulation test.

Non-Human Toxicity Excerpts:

>> /LABORATORY ANIMALS: Acute Exposure/ Studies in rabbits exposed in the eyes to undiluted hairspray containing 22% isobutane showed that irritation of the eye was immediately evident with transient iritis and mild conjunctivitis.

Non-Human Toxicity Values:

>> LC50 Rat inhalation 57 pph/15 min

12. Ecological Information

Sediment/Soil Concentrations:

Concentrations of this compound in sediment/soil.

>> SEDIMENT: Hydrocarbon gases are present in low concentrations in the upper 2 m of sediment from the shelf, slope and basin of the Bering Sea; the concentration range of isobutane in the 19 core samples analyzed were 4 to 340 nL/L interstitial water, with a median of 9 nL/L. It is believed that these chemicals are derived from low temperature biological and chemical processes on the sea floor(1).

13. Disposal Considerations

Spillage Disposal

>> Evacuate danger area! Consult an expert! Ventilation. Remove all ignition sources. NEVER direct water jet on liquid. Personal protection: filter respirator for organic vapours of low boiling point adapted to the airborne concentration of the substance.

Disposal Methods

>> SRP: 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 air, soil or water; effects on animal, aquatic and plant life; and conformance with environmental and public health regulations. If it is possible or reasonable use an alternative chemical product with less inherent propensity for occupational harm/injury/toxicity or environmental contamination.

>> SRP: Wastewater from contaminant suppression, cleaning of protective clothing/equipment, or contaminated sites should be contained and evaluated for subject chemical or decomposition product concentrations. Concentrations shall be lower than applicable environmental discharge or disposal criteria. Alternatively, pretreatment and/or discharge to a permitted wastewater treatment facility is acceptable only after review by the governing authority and assurance that "pass through" violations will not occur. Due consideration shall be given to remediation worker exposure (inhalation, dermal and ingestion) as well as fate during treatment, transfer and disposal. If it is not practicable to manage the chemical in this fashion, it must be evaluated in accordance with EPA 40 CFR Part 261, specifically Subpart B, in order to determine the appropriate local, state and federal requirements for disposal.

>> Product: Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material; Contaminated packaging: Dispose of as unused product.

>> Dissolve of mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. All federal, state, and local environmental regulations must be observed.

14. Transport Information

DOT

Propane, 2-methyl
2.1

IATA

Propane, 2-methyl
2.1,

15. Regulatory Information

DHS Chemicals of Interest (COI):

This section provides the Department of Homeland Security (DHS) Chemicals of Interest (COI) and related information (Ref: 6 eCFR part 27 - https://www.ecfr.gov/current/title-6/chapter-I/part-27).

Chemicals of Interest(COI)

>> Isobutane

Release: Minimum Concentration (%)

>> 1

Release: Screening Threshold Quantities (in pounds)

>> 10000

Security Issue: Release - Flammables

>> Flammable chemical that can be released at a facility.

Regulatory Information

The Australian Inventory of Industrial Chemicals

>> Chemical: Propane, 2-methyl-

REACH Registered Substance

>> Status: Active Update: 02-03-2023 https://echa.europa.eu/registration-dossier/-/registered-dossier/15456

New Zealand EPA Inventory of Chemical Status

>> Propane, 2-methyl- (isobutane): HSNO Approval: HSR001003 Approved with controls

16. Other Information

Toxic Combustion Products:

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

>> Special hazards arising from the substance or mixture: Carbon oxides.

Other Safety Information

Chemical Assessment

>> IMAP assessments - Propane, 2-methyl-: Human health 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."