Normal Butane

Safety Data Sheet

According to Federal Register / Vol. 89, No. 98 / Monday, May 20, 2024 / Rules and Regulations
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SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: Normal Butane

Synonyms: LPG, N-butane, C4, liquefied petroleum gas, refinery grade butane, mixed butanes, RGB

1.2 Recommended Use and Restrictions on Use

Use Of The Substance/Mixture : Chemical feedstock or solvent, combustion fuel, gasoline

Restrictions On Use : No additional information available

1.3. Name, Address, and Telephone of the Responsible Party

Customer

Placid Refining Co. LLC
1940 Highway 1 North
Port Allen, LA 70767
Ph: 225-387-0278
www.placidrefining.com

1.4. Emergency Telephone Number

Emergency Number : 800-424-9300 (CHEMTREC)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-US Classification

Flammable gas, Category 1A	H220
Gas under pressure : Liquefied gas	H280
Simple asphyxiant	SIAS
Hazardous to the aquatic environment — Acute Hazard, Category 2	H401
Hazardous to the aquatic environment — Chronic Hazard, Category 2	H411

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) :

GHS02 GHS04 GHS09

Signal Word (GHS-US) : Danger

Hazard Statements (GHS-US) : H220 - Extremely flammable gas.
H280 - Contains gas under pressure; may explode if heated.
H411 - Toxic to aquatic life with long lasting effects.
May displace oxygen and cause rapid suffocation.

Precautionary Statements (GHS-US) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 - Avoid release to the environment.
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 - In case of leakage, eliminate all ignition sources.
P391 - Collect spillage.
P410+P403 - Protect from sunlight. Store in a well-ventilated place.
P501 - Dispose of local, regional, national, and international regulations to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

2.3 Hazards associated with known or reasonably anticipated uses

This product is intended for various processes, and the hazards listed in Section 2.3 cannot cover all chemistries. Therefore, a Process Hazard Analysis (PHA) or other hazard assessment for specific end uses should be performed to ensure that hazards are fully understood, and adequate safety measures are in place. See Section 10 for relevant reactivity and stability information.

2.4. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions. Contact with gas escaping the container can cause frostbite.

2.5. Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Synonyms	Product Identifier	%	GHS US classification
n-Butane	Butane / BUTANE	(CAS-No.) 106-97-8	40 – 95	Flam. Gas 1A, H220 Press. Gas (Liq.), H280 Simple Asphyxiant
n-Pentane	Pentane / Normal pentane / PENTANE / Pentane, n-	(CAS-No.) 109-66-0	2 – 30	Flam. Liq. 1, H224 Asp. Tox. 1, H304 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
Isobutane	2-Methylpropane / Propane, 2-methyl- / ISOBUTANE / R600a / isobutane / R-600a / isobutane (containing ≥ 0,1 % butadiene)	(CAS-No.) 75-28-5	≤ 10	Flam. Gas 1A, H220 Press. Gas (Liq.), H280 Simple Asphyxiant
Ethane	Ethyl hydride / ETHANE / R-170	(CAS-No.) 74-84-0	≤ 1	Flam. Gas 1A, H220 Press. Gas (Liq.), H280 Simple Asphyxiant
Propane, 2-fluoro-2-methyl-	tert-Butyl fluoride / 2-Fluoro-2-methylpropane	(CAS-No.) 353-61-7	≤ 0.5	Flam. Gas 1B, H221 Press. Gas (Liq.), H280 Simple Asphyxiant

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

First-aid Measures General: If frostbite or freezing occurs, immediately flush with plenty of lukewarm water to GENTLY warm the affected area. Do not use hot water. Do not rub affected area. Get immediate medical attention. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid Measures After Inhalation: When symptoms occur: go into open air and ventilate suspected area. First, take proper precautions to ensure your own safety before attempting rescue (e.g. wear appropriate respiratory protective equipment, use the buddy system), then remove the exposed person to fresh air. Keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

First-aid Measures After Skin Contact: For brief contact with a small amount: Rewarm with body heat. Get immediate medical advice/attention. For extensive contact or a large amount: Immediately call a poison center/doctor and follow their advice. Specific treatment is urgent, incorrect first-aid practices will aggravate the injury. Protect affected area with a loose cover until proper medical treatment is received. Immediately remove contaminated clothing. Obtain medical attention if irritation develops or persists. Drench affected area with water for at least 15 minutes.

First-aid Measures After Eye Contact: Remove contact lenses, if present and easy to do. Continue rinsing. Rinse cautiously with water for at least 15 minutes. Obtain medical attention if irritation develops or persists.

First-aid Measures After Ingestion: Get immediate medical attention. Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

Symptoms/Injuries: May cause frostbite on contact with the liquid. Asphyxia by lack of oxygen: risk of death.

Symptoms/Injuries After Inhalation: In elevated concentrations may cause asphyxiation, central nervous system effects, and increased breathing rate. Symptoms of asphyxiation include headache, dizziness, rapid breathing, increased pulse, mood changes, tremors, cyanosis, muscular weakness, narcosis, numbness of the extremities, unconsciousness and death.

Symptoms/Injuries After Skin Contact: Contact with gas/liquid escaping the container can cause frostbite and freeze burns.

Symptoms/Injuries After Eye Contact: This gas is non-irritating; but direct contact with liquefied/pressurized gas or frost particles may produce severe and possibly permanent eye damage from freeze burns.

Symptoms/Injuries After Ingestion: Ingestion is not considered a potential route of exposure. Not considered a potential route of exposure, but contact with gas/liquid escaping the container can cause freeze burns and frostbite.

Chronic Symptoms: None expected under normal conditions of use.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Do not extinguish burning gas if flow cannot be shut off immediately. Extinguish secondary FIRES with appropriate materials. Foam, dry chemical, carbon dioxide, water spray, fog.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Extremely flammable gas.

Explosion Hazard: May form flammable/explosive vapor-air mixture. Container may explode in heat of fire.

Reactivity: Reacts with strong oxidizers: increased risk of fire. Stable at ambient temperature and under normal conditions of use.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Carbon oxides (CO, CO_2). Hydrocarbons.

Other Information: Use water spray to disperse vapors. Do not allow run-off from firefighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Eliminate every possible source of ignition. Avoid all contact with skin, eyes, or clothing.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Evacuate unnecessary personnel, isolate, and ventilate area. Ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment. Collect spillage.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: Notify authorities if liquid enters sewers or public waters. As an immediate precautionary measure, isolate spill or leak area in all directions.

Methods for Cleaning Up: Stop the source of the release, if safe to do so. Consider the use of water spray to disperse vapors. Isolate the area until gas has dispersed. Ventilate and gas test area before entering. For water based spills contact appropriate authorities and abide by local regulations for hydrocarbon spills into waterways. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Extremely flammable gas. Do not pressurize, cut, or weld containers. Do not puncture or incinerate container. Liquid gas can cause frost-type burns. Handle empty containers with care because residual vapors are flammable. Ruptured cylinders may rocket. Asphyxiating gas at high concentrations.

Precautions for Safe Handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Ensure adequate air ventilation.

Handling Temperature: Observe listed maximum temperatures and pressures for all receptacles containing product.

Hygiene Measures: Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep in fireproof place. Store locked up/in a secure area. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling.
Incompatible Materials: Halogenated compounds. Chlorine. Chlorine dioxide. Strong acids, strong bases, strong oxidizers.
Storage Temperature: Observe listed maximum temperatures and pressures for all receptacles containing product.

7.3. Specific End Use(s)

Chemical feedstock or solvent, combustion fuel, gasoline.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), or OSHA (PEL).

n-Butane (106-97-8)		
USA ACGIH	ACGIH® TLV® STEL	1000 ppm (explosion hazard (Butane, isomers)
USA NIOSH	NIOSH REL TWA	1900 mg/m³
USA NIOSH	NIOSH REL TWA	800 ppm
USA IDLH	IDLH	1600 ppm (>10% LEL)

Ethane (74-84-0)		
USA ACGIH	ACGIH chemical category	Simple asphyxiant See Appendix F: Minimal Oxygen Content

Isobutane (75-28-5)		
USA ACGIH	ACGIH® TLV® STEL	1000 ppm (explosion hazard (Butane, isomers)
USA NIOSH	NIOSH REL TWA	1900 mg/m³
USA NIOSH	NIOSH REL TWA	800 ppm

n-Pentane (109-66-0)		
USA ACGIH	ACGIH® TLV® TWA	1000 ppm (Pentane, all isomers)
USA NIOSH	NIOSH REL TWA	350 mg/m³
USA NIOSH	NIOSH REL TWA	120 ppm
USA NIOSH	NIOSH REL C	1800 mg/m³
USA NIOSH	NIOSH REL C	610 ppm
USA IDLH	IDLH	1500 ppm (10% LEL)
USA OSHA	OSHA PEL TWA	2950 mg/m³
USA OSHA	OSHA PEL TWA	1000 ppm

8.2. Exposure Controls

Appropriate Engineering Controls : Suitable eye/body wash equipment should be available in the vicinity of any potential exposure. Proper grounding procedures to avoid static electricity should be followed. Ensure adequate ventilation, especially in confined areas. Gas detectors should be used when flammable gases or vapors may be released. Ensure all national/local regulations are observed. Use explosion-proof equipment. Oxygen detectors should be used when asphyxiating gases may be released.

Personal Protective Equipment : Insulated gloves. Protective clothing. Protective goggles. Insufficient ventilation: wear respiratory protection.

Materials for Protective Clothing : Chemically resistant materials and fabrics. Wear fire/flame resistant/retardant clothing.

Hand Protection : Wear chemically resistant protective gloves. If material is cold, wear thermally resistant protective gloves.

Eye and Face Protection : Chemical goggles or face shield.

Skin and Body Protection : Wear suitable protective clothing.

Respiratory Protection : If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Thermal Hazard Protection : Wear thermally resistant protective clothing.

Environmental Exposure Controls : Avoid unnecessary release into the environment.
Other Information : When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State : Gas
Color : Clear, colorless gas.
Odor : May contain ethyl mercaptan for leak detection, which has a skunk-like odor.
pH : No data available
Melting Point : -215 °F (-137.22 °C)
Freezing Point : No data available
Boiling Point : -1 °C (30.2 °F)
Flash Point : -60 °C (-76 °F)
Auto-ignition Temperature : 550 °F (287.78 °C)
Decomposition Temperature : No data available
Flammability (solid, gas) : Extremely flammable gas
Vapor Pressure : 40 psia 37.78°C (100°F)
Relative Vapor Density at 20°C : 2 @21.11°C (70°F)
Relative Density : No data available
Specific Gravity : 0.58
Solubility : Insoluble in water.
Partition Coefficient: N-Octanol/Water : No data available
Viscosity, Kinematic : No data available
Particle Aspect Ratio : Not applicable
Particle Aggregation State : Not applicable
Particle Agglomeration State : Not applicable
Particle Specific Surface Area : Not applicable
Particle Dustiness : Not applicable
Explosive Properties : Contains gas under pressure; may explode if heated.

9.2. Other Information

Gas Group : Press. Gas (Liq.)

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reacts with strong oxidizers: increased risk of fire. Stable at ambient temperature and under normal conditions of use.

10.2. Chemical Stability

Contains gas under pressure; may explode if heated.

10.3. Possibility of Hazardous Reactions, Including those Associated with Foreseeable Emergencies

Hazardous polymerization will not occur.

10.4. Conditions to Avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks. Incompatible materials. Avoid ignition sources. Direct sunlight, extremely high or low temperatures, open flames, sources of ignition and incompatible materials.

10.5. Incompatible Materials

Halogenated compounds. Chlorine. Chlorine dioxide. Strong acids, strong bases, strong oxidizers.

10.6. Hazardous Decomposition Products

Carbon oxides (CO, CO2). hydrocarbons.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects

Likely Routes of Exposure: Dermal, Eye Contact, Inhalation, Oral
Acute Toxicity (Oral): Not classified.
Acute Toxicity (Dermal): Not classified.
Acute Toxicity (Inhalation): Not classified.

n-Butane (106-97-8)	
LC50 Inhalation Rat	30957 mg/m³ (Exposure time: 4 h)
LC50 Inhalation Rat	276798.8 ppm

Ethane (74-84-0)	
LC50 Inhalation Rat	> 1443 mg/l (Exposure time: 15 min Source: ECHA)

Isobutane (75-28-5)	
LC50 Inhalation Rat	> 800000 ppm (Exposure time: 15 min Source: ECHA_API)

n-Pentane (109-66-0)	
LD50 Oral Rat	> 2000 mg/kg (Source: EU_RAR)
LD50 Dermal Rabbit	3000 mg/kg (Source: OECD_SIDS)
LC50 Inhalation Rat	364 g/m³ (Exposure time: 4 h Source: NLM_CIP)
LC50 Inhalation Rat	> 20 mg/l/4h

Skin Corrosion/Irritation: Not classified.

Serious Eye Damage/Irritation: Not classified.

Respiratory or Skin Sensitization: Not classified.

Germ Cell Mutagenicity: Not classified.

Carcinogenicity: Not classified.

Reproductive Toxicity: Not classified.

Specific Target Organ Toxicity (Single Exposure): Not classified.

Specific Target Organ Toxicity (Repeated Exposure): Not classified.

Aspiration Hazard: Not applicable

Symptoms/Injuries After Inhalation: In elevated concentrations may cause asphyxiation, central nervous system effects, and increased breathing rate. Symptoms of asphyxiation include headache, dizziness, rapid breathing, increased pulse, mood changes, tremors, cyanosis, muscular weakness, narcosis, numbness of the extremities, unconsciousness and death.

Symptoms/Injuries After Skin Contact: Contact with gas/liquid escaping the container can cause frostbite and freeze burns.

Symptoms/Injuries After Eye Contact: This gas is non-irritating; but direct contact with liquefied/pressurized gas or frost particles may produce severe and possibly permanent eye damage from freeze burns.

Symptoms/Injuries After Ingestion: Ingestion is not considered a potential route of exposure. Not considered a potential route of exposure, but contact with gas/liquid escaping the container can cause freeze burns and frostbite.

Chronic Symptoms: None expected under normal conditions of use.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

n-Pentane (109-66-0)	
LC50 Fish 1	9.87 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 - Crustacea [1]	9.74 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 Fish 2	11.59 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
NOEC Chronic Algae	2 mg/l

12.2. Persistence and Degradability

Normal Butane	
Persistence and Degradability	May cause long-term adverse effects in the environment.

12.3. Bioaccumulative Potential

Normal Butane	
Bioaccumulative Potential	Bioaccumulation of product components cannot be excluded.

n-Butane (106-97-8)	
Partition coefficient n-octanol/water (Log Pow)	2.31 (at 20 °C (at pH 7)

Ethane (74-84-0)	
Partition coefficient n-octanol/water (Log Pow)	1.09 – 2.8 (at 20 °C (at pH 7)

Isobutane (75-28-5)	
BCF Fish 1	1.57 – 1.97
Partition coefficient n-octanol/water (Log Pow)	1.09 – 2.8 (at 20 °C (at pH 7)

n-Pentane (109-66-0)	
Partition coefficient n-octanol/water (Log Pow)	3.45 (at 25 °C (at pH 7)

12.4. Mobility in Soil

Normal Butane	
Ecology - Soil	Adsorption to solid soil phase is not expected.

12.5. Other Adverse Effects

Other Adverse Effects : None known.
Other Information : Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste Treatment Methods

Waste Treatment Methods: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage Disposal Recommendations: Do not dispose of waste into sewer. Do not empty into drains.
Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, and international regulations.
Additional Information: Container may remain hazardous when empty. Continue to observe all precautions. Handle empty containers with care because residual vapors are flammable. Empty gas cylinders should be returned to the vendor for recycling or refilling. Do not puncture or incinerate container.
Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. In Accordance with DOT

Proper Shipping Name : PETROLEUM GASES, LIQUEFIED
Hazard Class : 2.1
Identification Number : UN1075
Label Codes : 2.1

Marine Pollutant : Marine pollutant
ERG Number : 115

14.2. In Accordance with IMDG

Proper Shipping Name : PETROLEUM GASES, LIQUEFIED
Hazard Class : 2
Division : 2.1
Identification Number : UN1075
Label Codes : 2.1
EmS-No. (Fire) : F-D
EmS-No. (Spillage) : S-U

Marine Pollutant : Marine pollutant

14.3. In Accordance with IATA

Proper Shipping Name : PETROLEUM GASES, LIQUEFIED
Identification Number : UN1075
Hazard Class : 2
Label Codes : 2.1
Division : 2.1
ERG Code (IATA) : 10L

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

Normal Butane	
SARA Section 311/312 Hazard Classes	Health hazard - Simple asphyxiant Physical hazard - Flammable (gases, aerosols, liquids, or solids) Physical hazard - Gas under pressure

Propane, 2-fluoro-2-methyl- (353-61-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Inactive

n-Butane (106-97-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Ethane (74-84-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Isobutane (75-28-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

n-Pentane (109-66-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

15.2. US State Regulations

n-Butane (106-97-8)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List

Ethane (74-84-0)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List

Isobutane (75-28-5)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List

n-Pentane (109-66-0)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List

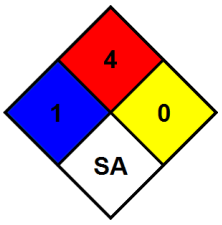
SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 11/21/2025
Indication of Changes : New format – OSHA 2024 regulations.
Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200

GHS Full Text Phrases:

H220	Extremely flammable gas
H221	Flammable gas
H224	Extremely flammable liquid and vapor
H280	Contains gas under pressure; may explode if heated
H304	May be fatal if swallowed and enters airways
H401	Toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects
SIAS	May displace oxygen and cause rapid suffocation

NFPA Health Hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA Fire Hazard : 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 Reactivity Hazard : 0 - Material that in themselves are normally stable, even under fire conditions.
NFPA Specific Hazards : SA - This denotes gases which are simple asphyxiants.



Glossary of Data Source Abbreviations

ATSDR: Agency for Toxic Substances and Disease Registry (U.S. Department of Health and Human Services)
AU_WES: Australia WES
CHEMVIEW: ChemView (U.S. Environmental Protection Agency)
EC_RAR: European Commission Renewal Assessment Report
EC_SCOEL: European Commission Scientific Committee on Occupational Exposure Limits
ECETOC: European Centre for Ecotoxicology and Toxicology of Chemicals Reports
ECHA_API: European Chemicals Agency API
ECHA_RAC: ECHA Committee for Risk Assessment
EFSA: European Food Safety Authority
EPA: U.S. Environmental Protection Agency
EPA_AEGL: Acute Exposure Guideline Levels (U.S. Environmental Protection Agency)
EPA_FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act Reregistration Eligibility Decision (U.S. Environmental Protection Agency)
EPA_HPV: High Production Volume Chemicals (U.S. Environmental Protection Agency)
EPA_TRED: Risk Assessment for Tolerance Reassessment Eligibility Decision (U.S. Environmental Protection Agency)
EU_CLH: European Union Harmonised Classification and Labelling Proposal
EU_RAR: European Union Risk Assessment Report
FOOD_JOURN: Food Research Journal (1956)
IARC: The International Agency for Research on Cancer
IDLH: National Institute for Occupational Health and Safety Immediately Dangerous to Life or Health Value Profiles
IUCLID: International Uniform Chemical Information Database
JAPAN_GHS: Japan GHS Basis for Classification Data
JP_J-CHECK: Japan J-Check
KR_NIER: South Korea National Institute of Environmental Research Evaluations
NICNAS: Australia National Industrial Chemicals Notification and Assessment Scheme
NIOSH: National Institute for Occupational Health and Safety (U.S. Department of Health and Human Services)
NLM_CIP: National Library of Medicine ChemID plus database
NLM_HSDB: National Library of Medicine Hazardous Substance Data Bank
NLM_PUBMED: National Library of Medicine PubMed database
NTP: National Toxicology Program
NZ_CCID: New Zealand Chemical Classification and Information Database
OECD_EHSP: Environment, Health, and Safety Publication (Organisation for Economic Co-operation and Development)
OECD_SIDS: Screening Information Data Sets (Organisation for Economic Co-operation and Development)
WHO: World Health Organization

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS US (GHS HazCom)