

N-BUTANE
CAS No. 106-97-8

Chemical Safety Data Sheet

SECTION 1 IDENTIFICATION

GHS Product identifier: N-BUTANE

Other means of identification: BUTANE, R600

Recommended use of the chemical and restrictions on use: Solvent/Refrigerant

Supplier's details:

Dongying Liangxin Petrochemical Technology Development Limited Company

Address: No.117 Guangqing Road, Dingzhuang, Guangrao, Dongying City, Shandong Province

Phone: +86 178 1030 0898

Emergency phone number:

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

FLAMMABLE GASES - Category 1

GASES UNDER PRESSURE - Liquefied gas

GHS Label elements, including precautionary statements



Signal word: Danger.

Hazard statement(s): H224: Extremely flammable liquid and vapor.

H280: Contains gas under pressure; may explode if heated

Precautionary statement(s):

Prevention:

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P280 Wear protective gloves/ eye protection/ face protection.

Response: P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage: P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification: /

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SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Concentration%
N-butane	106-97-8	99.99%

SECTION 4 FIRST AID MEASURES
Description of necessary first aid measures

If inhaled: Consult a physician after significant exposure. If unconscious, place in recovery position and seek medical advice.

In case of skin contact : If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed: /

Indication of immediate medical attention and special treatment needed: /

SECTION 5 FIREFIGHTING MEASURES
Suitable extinguishing media

: Alcohol-resistant foam. Carbon dioxide (CO₂). Dry chemical.

Unsuitable extinguishing media

: High volume water jet.

Specific hazards during fire fighting

: Do not allow run-off from fire fighting to enter drains or water courses.

Special protective equipment for fire-fighters

: Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

Fire and explosion protection

: Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

Hazardous decomposition products

: No data available.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

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Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7 HANDLING AND STORAGE

Handling

Advice on safe handling : Avoid formation of aerosol. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion

: Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

Storage

Requirements for storage areas and containers

: No smoking. Keep container tightly closed in a dry and well ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

OCCUPATIONAL EXPOSURE LIMITS (OEL):

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
China Occupational Exposure Limits for Hazardous Agents in the Workplace	Nbutane	butane (all isomers)	1900 mg/m ³	1000 ppm	Not Available	Not Available

EMERGENCY LIMITS:

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
butane	butane	1000 ppm	1000 ppm	2100 ppm

Engineering measures

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed

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below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection : Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as:. Air-Purifying Respirator for Organic Vapors. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Flame retardant antistatic protective clothing. Workers should wear antistatic footwear.

Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form : Liquefied gas

Physical state : Liquid

Color : Colorless

Odor : Odorless

Safety data

Flash point : -60 °C (-76 °F)

Lower explosion limit : 1.8 %(V)

Upper explosion limit : 8.4 %(V)

Autoignition temperature : 365 °C (689 °F)

Thermal decomposition : No data available

Molecular formula : C₄H₁₀

Molecular weight : 58.14 g/mol

Melting point/range : -138 °C (-216 °F)

Boiling point/boiling range : -0.5°C (31.1 °F)

Vapor pressure : 16.00 - 18.00 PSI at 38 °C (100 °F) Method: Reid

Density : 0.58 g/cm³ at 25 °C (77 °F)

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Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Hazardous reactions : Further information: No decomposition if stored and applied as directed.

Hazardous reactions: Vapors may form explosive mixture with air.

Conditions to avoid : Heat, flames and sparks.

Thermal decomposition : No data available

Hazardous decomposition products : No data available

Other data : No decomposition if stored and applied as directed.

SECTION 11 TOXICOLOGICAL INFORMATION

Butane Acute oral toxicity : LD50: > 5,000 mg/kg Method: Estimated based on individual component values.

Butane Acute inhalation toxicity : LC50: > 31 mg/l Exposure time: 4 h Species: Rat Test atmosphere: vapor

Butane Acute dermal toxicity : LD50: > 5,000 mg/kg Method: Estimated based on individual component values.

Butane Skin irritation : Rapid evaporation of the liquid may cause frostbite.

Butane Sensitization : No adverse effects expected.

Butane Repeated dose toxicity : Method: Estimated based on individual component values. No adverse effects expected

Butane Genotoxicity in vitro : Test Type: Ames test Result: negative

Butane Carcinogenicity : Method: Not expected to be carcinogenic based on individual component data.

Toxicology Assessment

Butane CMR effects : Carcinogenicity: Not classifiable as a human carcinogen. Mutagenicity: This information is not available. Teratogenicity: Embryotoxicity classification not possible from current data. Reproductive toxicity: Fertility classification not possible from current data.

Butane Further information : Solvents may degrease the skin.

SECTION 12 ECOLOGICAL INFORMATION

Biodegradability : This material is expected to be readily biodegradable.

Elimination information (persistence and degradability)

Bioaccumulation

Additional ecological information :Butane : No data available

Ecotoxicology Assessment

Short-term (acute) aquatic hazard : Harmful to aquatic life.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible.

Product : Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

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Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14 TRANSPORT INFORMATION

UN number: 1011.
UN proper shipping name: BUTANE.
Transport hazard class(es): 2.1
Packaging group: -
Environmental hazards: /
Special precautions for user: /

SECTION 15 REGULATORY INFORMATION

Regulations: This safety data sheet is in compliance with the following national standards: GB 16483-2008, GB 13690-2009, GB/T 15098-2008, GB 18218-2009, GB 15258-2009, GB 6944-2012, GB 190-2009, GB 191-2009, GB 12268-2008, GA 57-1993, GBZ 2-2007 as well as the following national regulations: Dangerous Goods Transport Administrative Regulation [Published by the Ministry of Railways, 2008], Dangerous Chemicals Safety Administrative Regulation [Published by the State Council, 2011].

SECTION 16 OTHER INFORMATION

References	“Model Regulations on the Transport of Dangerous Goods” “The Globally Harmonized System of Classification and Labelling of Chemicals”
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Note 1: As a result of product features without the existence of certain information (such as boiling point does not exist for the solid) in the table with "/" logo.