

Safety Data Sheet

Product Name	BUTANE GAS CARTRIDGE
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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

A. Product Name	BUTANE GAS CARTRIDGE
B. Recommendations of product use	Fuel for residential use (for portable gas stove)
C. Manufacturer Information	
Company Name	Linyi Baililai International Trading CO., LTD.
Address	South of yongan road, Zaoyuan town, lanshan district, linyi city, Shandong province, China
Tel. No.	05398943877
Emergency Contact	05398543788

SECTION 2. HAZARDS IDENTIFICATION

A. HAZARDS/RISK CLASSIFICATION

<Propane>	Flammable Gas = Category 1, High Pressure Gas = Liquefied Gas
<Iso Butane>	Flammable Gas = Category 1, High Pressure Gas = Liquefied Gas
<Butane>	Flammable Gas = Category 1, High Pressure Gas = Liquefied Gas

B. Warning Label Items, including Precautionary Statements

<Propane>

Pictograms



Signal Word

Danger

Hazard Statements

H220 Extremely Flammable Gas.
H270 May cause cause or intensify fire; oxidizer
H280 Gases under pressure; May explode if heated.

Precautionary Statements

Prevention

P210 Keep away from heat/sparks/open flame/hot surfaces
- No Smoking.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P370+P376 In case of fire: Remove product if safe to do so.
P377 Leaking gas fire : Do not extinguish, unless leak can be stopped safely.
P381 Eliminate all ignition sources if safe to do so.

Storage

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

<Iso Butane>

Pictograms



Signal Word

Danger

Hazard Statements

H220 Extremely Flammable Gas.
H280 Gases under pressure; May explode if heated.

Precautionary Statements

Prevention

P210 Keep away from heat/sparks/open flame/hot surfaces
- No Smoking.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P377 Leaking gas fire : Do not extinguish, unless leak can be stopped safely.

P381 Eliminate all ignition sources if safe to do so.

Storage

P403 Store in a well-ventilated place.

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

<Butane>

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Signal Word

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- No Smoking.

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Response

P377 Leaking gas fire : Do not extinguish, unless leak can be stopped safely.

P381 Eliminate all ignition sources if safe to do so.

Storage

P403 Store in a well-ventilated place.

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

C. Other hazards not covered by the hazard classification (NFPA-STANDARD)

<Propane>

Health: 1 / Fire : 4 / Reactivity : 0

<Iso Butane>

Health: 0 / Fire : 4 / Reactivity : 0

<Butane>

Health: 1 / Fire : 4 / Reactivity : 0

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Material Name	CAS No.	UN No.	Content(wt%)
Propane	74-98-6	1978	Under 5
Iso Butane	75-28-5	1969	20~40
Butane	106-97-8	1011	60~80
etc	-	-	Under 3

SECTION 4. FIRST AID MEASURES

A. Eye Contact

Remove contact lenses if present.

Flush eye thoroughly with water or normal saline for 20 to 30 minutes. Immediately call a hospital/poison center. Do not give ointment, oil or medicine without doctor's precise opinion.

If symptoms(redness, irritation, etc.) occur, go to the hospital immediately.

B. Skin Contact

Exposure to compressed gas may cause frostbite. Frostbite treatment may be required.

Immediately remove contaminated clothings and avoid from contaminated sources.

Wash with soap and water. Carefully wipe with a clean, soft towel.
If symptoms, such as irritation, inflammation occurs, call a doctor or move to a hospital immediately.

C. Inhalation

Move to fresh air.
If breathing is irregular, give oxygen. If breathing is stopped, administer artificial respiration.
If symptoms(irritation, cough, wheezing, etc.) occurs, seek medical attention.

D. Ingestion

If swallowed, obtain immediate medical attention.

E. Notes to physician

Have the medical personnel know about the material and take protective measure.

SECTION 5. EXPLOSION, FIRE FIGHTING MEASURES

A. Suitable Extinguishing Media

Use alcohol foam, carbon dioxide, powder fire extinguisher or water spray. Use dry sand or earth to smother fire.

B. Specific Hazards Arising from Chemicals

Extremely flammable gas.
Violent reaction may cause fire and explosion.
Vapors are heavier than air and may travel long distances to a point of ignition and flash back.
Pyrolysate: carbon oxides, other decomposition product
Easily ignited by heat, sparks and flames.
Fire exposed cylinders can release flammable gases.
Vapors may cause dizziness or asphyxiant without awareness.

C. Protective Equipment and Precautions for Fire Prevention

Remove cartridge from fire area if you can do it without risk.
Water spray for a long time to cool cartridge even after extinguish the fire.
In case of fire at the place of shipment or storage: Cool containers with unmanned hose holder or monitor nozzle for a considerable amount of time after extinguish the fire.
If this is not possible, take the following measures: Keep unnecessary people away, isolate hazard area and deny entry. Let it burn.
For transport vehicle: Stop leak if there is no risk. If you can not stop the leak immediately, let it burn.
Separate product from other flammable materials after extinguish the fire.
Block the flow of gas.
Stop the leak first then try to extinguish the fire.
Keep in a protected place or a safe distance to spread the water.
Do not inhale substance or combustion products.
If the fire can not be extinguished or the container is exposed to direct flames, evacuate. Evacuation radius: 500 m (1/3 mi)

SECTION 6. ACCIDENTAL RELEASE MEASURES

A. Personal Precautions

Isolate contaminated areas, and restrict access by other than authorized personnel.
Do not touch the spilled material and avoid skin exposure.
Ventilate the area before entering.
Use water spray to reduce vapors and eliminate all ignition sources as very small particles may cause fire or explosion.
Stop the leak if it is not dangerous.

B. Environmental Precautions

C. Methods for cleaning up

Atmosphere, Soil, Water: No data

if Small or large quantity leakage: No data

SECTION 7. HANDLING AND STORAGE

A. Precautions for safe handling

Do not over pressed, expose, cut, weld, solder, bond, punch, grind or expose to heat, flames, sparks, static electricity or other sources of ignition.

Follow all MSDS label precautions as product residue can remain after emptying container handle / store carefully.

Carefully open the cap before opening.

Always ground all equipment when handling material.

Note the substances and conditions to avoid.

Do not handle until you have read and understood all safety precautions.

Avoid inhalation (dust, fume, gas, mist, vapors and spray).

Handle it outdoors or in a well-ventilated area.

B. Conditions for safe storage

Keep away from heat, sparks, flames and high heat.

Keep sterling container tightly closed in a well-ventilated storage.

Store in a well-ventilated place and away from direct sunlight.

Do not expose containers to heat, as they may increase pressure when exposed to heat.

Note the substances and conditions to avoid.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

A. Exposure Guidelines

<Propane>

Domestic Regulation: No data available

ACGIH Regulation:

OSHA Regulation: PEL-TWA 1000 ppm (1800 mg/m³)

Biological Exposure Standard: No data available

<Iso Butane>

Domestic Regulation: TWA 800 ppm

ACGIH Regulation: TWA 1000 ppm

Biological Exposure Standard: No data available

<Butane>

Domestic Regulation: TWA 800 ppm

ACGIH Regulation: TWA 1000 ppm

Biological Exposure Standard: No data available

B. Engineering Measures

Use process isolation, local exhaust ventilation or other engineering controls to regulate air levels below exposure limits.

C. Personal Protective Equipment

Respiratory Protection

Wear a respirator that has been approved by the Korean Occupational Safety and Health Administration in accordance with the physicochemical properties of the substance being exposed.

Eye Protection

Protect your eyes, if possible in the gaseous state, do not wear contact lenses, wear protective eyewear, protected from arsenic object, hazardous liquids. Install eyewash and emergency cleaner (shower) near work area.

Hand Protection

Wear insulated gloves.

Body Protection

No protection is required in the gaseous state. In liquid, wear suitable protective clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

	Propane	Iso Butane	Butane
A. Exterior	Compressed liquefied gas, colorless		
B. Odor	Odorless	Unpleasant odor	
C. Odor Threshold	No data available		
D. pH	Not applicable		
E. Melting / Freezing Point	No data available	-138.3 °C	-138 °C
F. Initial Boiling Point & Boiling Point Range	-48~-1 °C	-11.7 °C	-0.5 °C
G. Flash Point	-73 °C		-60 °C
H. Evaporation Rate	1(N-Butyl Acetate=1)	Not applicable	Not applicable
I. Flammability (Solid, Gas)	No data available		
J. Upper/Lower Flammability or Explosive Limit	9.5/1.9 (vol%)	8.4/1.8 (vol%)	8.4/1.8 (vol%)
K. Vapor Pressure	4066 mmHg(20°C)	2611 mmHg(25°C)	213.7 mmHg(21.1°C)
L. Solubility	insoluble	0.00489 g/100ml (25°C)	0.006 g/100ml (25°C)
M. Vapor Density	1.8	2.01	2.1
N. Specific Gravity	0.508 g/m ³ (15°C)	0.584 g/m ³ (15°C)	0.584 g/m ³ (15°C)
O. Partition Coefficient(N-octanol/H2O)	No data available	2.76	2.89
P. Auto Ignition Temperature	427.5°C	460°C(Closed cup)	365°C
Q. Decomposition Temperature	No data available		
R. Viscosity	No data available		

SECTION 10. STABILITY AND REACTIVITY

- A. Chemical Stability** Stable at normal temperature or pressure will not polymerized.
- B. Conditions to Avoid** Containers may rupture or explode if exposed to heat.
Minimize contact with other substances.
Avoid contact with heat, flames, sparks and other sources of ignition.
- C. Incompatible materials** Combustible material, oxidizing agent
- D. Hazardous Reactions** Generate other decomposition products upon thermal decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

- A. Information about Possible Exposure Path**
May cause irritation, nausea, vomiting, shortness of breath, irregular heartbeat, headache, drowsiness, fatigue, dizziness, disorientation, mood swings, tingling sensation, incoordination, simple asphyxiant, convulsions, loss of consciousness, narcosis.
Significant ingestion is unlikely to occur.
May cause frostbite.

B. Health Hazard Information

	Propane	Iso Butane	Butane
Acute Toxicity			
Oral	No data available	No data available	No data available
Percutaneous	No data available	No data available	No data available
Inhalation	dust LD50 570000 ppm 15 min Rat	LC50 658 mg/L 4 hr Rat	vapor LC50> 800000 ppm 15 min Rat(Similar material CAS No. 74-98-6)
Skin irritation	No data available(EU Directive 67/548). Rabbit/irritating (IUCLID)	No data available	No data available
Eye irritation	No data available(EU Directive 67/548/EEC). Rabbit/not irritating	Rabbit/non-irritating	non-irritating
Respiratory Sensitization	No data available	No data available	No data available
Skin Sensitization	No data available	No data available	No data available
Carcinogenicity	No data available	No data available	No data available
Occupational Safety and Health	No data available	No data available	No data available

Skin Sensitization	No data available	No data available	No data available
Carcinogenicity	No data available	No data available	No data available
Occupational Safety and Health Act	No data available	No data available	No data available
Notification of Ministry of Employment and Labor	No data available	1A(Exposure Standard Notification No. 2018-62)	1A(containing \geq 0.1% butadiene)
IARC	No data available	No data available	No data available
OSHA	No data available	No data available	No data available
ACGIH	No data available	No data available	A3
NTP	No data available	No data available	No data available
EU CLP	No data available	1A	1A(containing \geq 0.1% butadiene (203-450-8))
Germ Cell Mutagenicity	No data available	Bacterial reverse mutation test, Negative. EU CLP: 1B(containing \geq 0.1% 1,3-butadiene)	·Mammalian(human) Chromosomal Aberration Test: Negative, in presence and in absence of the metabolic activation system(OECD Guideline 473, GLP) ·Bacterial reverse mutation test: Negative, in presence and in absence of the metabolic activation system(OECD Guideline 471) ·Drosophila SLRL test: Negative ·Mammalian(rat) Erythrocyte Micronucleus Test: Negative(OECD
Reproductive Toxicity	No data available	No data available	Reproductive and developmental toxicity test(rat): no specific abnormality related to reproduction and development(OECD Guideline 422, GLP)
Specific Target Organ Toxicity(single exposure)	No data available	No data available	Acute inhalation toxicity test(mouse): CNS depression, rapid heart rate, symptom of apnea(LC50(120min) = 1237mg/L air)
Specific Target Organ Toxicity(repeated exposure)	(EU Directive 67/548/EEC). Central nervous system(TOMES)	No data available	4-week repeated inhalation toxicity test(rat): No specific abnormality other than weight loss(NOAEC = 4000 ppm) (OECD Guideline 422, GLP)
Aspiration Hazard	No data available	No data available	No data available
Other Hazards	No data available	No data available	No data available

SECTION 12. ECOLOGICAL INFORMATION

A. Aquatic, Terrestrial, Environmental Ecotoxicity	Not applicable
B. Persistence and Degradability	Not applicable
C. Biocompatibility	
Biodegradable	65.7% (35 days aerobic, microbial, very well decomposed)
Enrichment	BCF
D. Soil Mobility	Not applicable
E. Other Adverse Effects	Not applicable

SECTION 13. DISPOSAL CONSIDERATION

Disposal Dispose of container and unused contents in accordance with local requirements.

SECTION 14. TRANSPORT INFORMATION

A. UN No. 2037
B. Proper Shipping Name RECEPTACLES, SMALL, CONTAINING GAS
C. Class 2.1
D. Packaging Group -
E. Marine Pollutant No
F. Ems Number Fire: F-D / Spill: S-U

SECTION 15. REGULATORY INFORMATION

A. Regulation by the Industrial Safety and Health Act Propane: Material to be exposed, Iso Butane: No data, Butane: Exposure standard setting substance
B. Restriction on Hazardous Chemical Substances Control Act No Data
C. Regulation under dangerous goods safety management Law No Data
D. Regulation by waste management Law No data

SECTION 16. OTHER INFORMATION

A. Source of Data China Occupational Safety and Health Agency, S-OIL Corporation
B. Date Created First 2012-03-05
C. Number of Revisions and Date of Last Revision 3 / 2021-01-06