

SAFETY DATA SHEET

PRODUCT NAME

BUTANE GAS CARTRIDGE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

- A. PRODUCT NAME BUTANE GAS CARTRIDGE MODEL BU-6 NET WEIGHT 8OZ (227G)
- B. RECOMMENDED USE OF PRODUCT AND LIMITATIONS
- USE OF PRODUCT For use Only in Portable Gas Appliances
- LIMITATIONS Extremely flammable
- C. IMPORTER
- COMPANY IWATANI CORPORATION OF AMERICA
- ADDRESS 2200 POST OAK BLVD. STE 1150 HOUSTON, TX 77056 (P) 713-965-9970
- EMERGENCY PHONE NUMBER 1-800-429-9300 (CHEM TREC)

2. HAZARDS IDENTIFICATION

- A. CLASSIFICATION
- Flammable gases : Category 1
- Gases under pressure : Liquefied gas
- Specific target organ toxicity – single exposure : Category 3 (Anesthesia effects)

B. LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS

SYMBOLS



SIGNAL WORDS DANGER, WARNING

HAZARD STATEMENTS

H220 Extremely flammable gas

H280 Contains gas under pressure : May explode if heated

H336 May cause drowsiness or dizziness

PRECAUTIONARY STATEMENTS

PREVENTION

P210 Keep away from heat/sparks/open flames/hot surface – No smoking

P251 pressurized container : Do not pierce or burn, even after use

P261 Avoid breathing dust/fume/gas/mist/vapours/spray

P271 Use only outdoors or in a well-ventilated area

RESPONSE

P304+P340 IF INHALED : Move victim to fresh air and keep at rest in a position comfortable for breathing

P312 Call a POISON CENTER or doctor/physician if you feel unwell

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

P233 Keep container tightly closed

P405 Store locked up

P410 Protect from sunlight.

DISPOSAL

P501 Dispose of contents/container in accordance with local/regional/national regulations

C. OTHER HAZARDS WHICH DO NOT RESULT IN CLASSIFICATION (NFPA)

	HEALTH	FIRE	REACTIVITY
ISOBUTANE	0	4	0
BUTANE	1	4	0
PROPANE	1	4	0

3. COMPOSITION/INFORMATION ON INGREDIENTS

A. MIXTURE

CHEMICAL NAME	SYNONYM	CAS No./ID	CONTENT(w%)
ISO-BUTANE	2-METHYL PROPANE	75-28-5	25 ~35
N-BUTANE	Butane, Liquefied Petroleum Gas	106-97-8	50 ~70
PROPANE	n-Propane, Propylhydride	74-98-6	0 ~ 5

4. FIRST AID MEASURES

- A. EYE CONTACT
- Get emergency medical treatment
- Wash skin and eyes with plenty of flowing water for at least 20 minutes
- B. SKIN CONTACT
- If you suffer from frostbite, flush with plenty of lukewarm water immediately.
- Cover up contaminated skin with a blanket. seek medical attention if ill effect or irritation develops
- C. INHALATION
- Get medical advice/attention if you feel unwell
- Ventilate with fresh air if open exceed mist and fume, get medical treatment if you have a cough or other
- D. INGESTION
- Prompt medical action is essential.
- Use a breathing equipment if get breathless by ingestion and inhalation
- E. MOST IMPORTANT SYMPTOMS/EFFECT, ACUTE AND DELAYS
- Contact with skin or eyes can cause frostbite.

F. INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED, IF NECESSARY	In case of inhalation, consider supplying oxygen.
5. FIRE FIGHTING MEASURES	
A. SUITABLE EXTINGUISH MEDIA	Water spray or Fog for surrounding area. Standard form, Special Alcohol-stable foam, Carbon Dioxide-CO2 Use dried sand and soil to extinguish by smothering
B. SPECIFIC HAZARDS ARISING FROM THE CHEMICAL	May burst or explode if exposed to heat or spark. Thermal decomposition may produce carbon monoxide and other toxic vapors Heavier than the air, and there is a possibility of ignition and backfire. May cause explosion if cylinder heats up. Low electrical conduction may cause static electricity, and be ignited by spark. Mixture of gas & air may explode.
C. SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTER	Fire fighters/rescuers must put on appropriate protector Get fire fighting on safe distance May be damaged if skin and eyes contact May cause pollution by opened contents Warning, because contents are lighter than water Remove cylinder from danger distance as to not be dangerous
D. SPECIAL FIREFIGHTING PROCEDURES	Use Equipment or Shielding required to protect personnel against bursting, rupturing or venting containers. Do not heat container. Store below 110°F in a Ventilated area.
E. UNUSUAL FIRE AND EXPLOSION HAZARDS	At elevated temperatures (over 54°C/130°F) CRV of containers will be operated, but rapidly excess heating or fire will be cause burst or rupture of a container. Extremely Flammable. Do not use near fire or flame.
6. ACCIDENTAL RELEASE MEASURE	
A. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES	Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition.
B. ENVIRONMENTAL PRECAUTIONS	Prevent flow to sewer/public waters. stop release
C. METHOD AND MATERIALS FOR CONTAINMENT AND CLEANING UP	Stop leak if you can do it without risk Absorb leaked materials with soil and sand, and throw away in a waste treatment container If spill is indoors, remove all possible sources of ignition and ventilate area immediately until all gases and vapors have been removed
7. HANDLING AND STORAGE	
A. PRECAUTIONS FOR SAFE HANDLING	Handle after reading all precautionary statements Avoid breathing dust/fume/gas/mist/vapours/spray Do not spray to flash resource point or flammable Avoid contact with skin and eyes Empty containers should not be re-used Protect cylinders from physical damage Use in a well-ventilated area
B. CONDITIONS FOR SAFE STORAGE	Keep away from heat/sparks/open flames/hot surface – No smoking Store in locking mechanism system and no youth handling Store in cool, well-ventilated area away from heat, spark or fire Keep away from foods and drinks Protect against direct sun radiation and storage under 40°C
8. EXPOSURE CONTROLS/PERSONAL PROTECTION	
A. EXPOSURE LIMITS IN THE AIR OF THE WORKPLACE, BIOLOGICAL LIMIT VALUES	
Iso-Butane:	
OSHA TWA	No data
ACGIH TWA	800ppm(1900mg/m³)
NIOSH recommended TWA 10 hour(s)	800ppm(1900mg/m³)
Propane:	
OSHA TWA	1000ppm(1800mg/m³)
ACGIH TWA	2500ppm
NIOSH recommended TWA	1000ppm(1800mg/m³)
N-Butane:	
OSHA TWA	800ppm(1900mg/m³)
ACGIH TWA	800ppm
NIOSH recommended TWA	800ppm(1900mg/m³)
EXPOSURE STANDARD	Industry safety & health law
B. APPROPRIATE ENGINEERING CONTROLS	Provide adequate ventilation Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

C. INDIVIDUAL PROTECTION MEASURE

RESPIRATORY PROTECTION

Eye Protection

An approved breathing apparatus may be appropriate. in case of emergency or leak, use a respirator

For the gas: Eye protection not required, but recommended.

For the liquid: Wear splash resistant safety goggles. Contact lences should not be worn.

Provide an emergency eyewash fountain and safety shower at work.

For the gas: Protective clothing is not required.

For the liquid: Wear appropriate protective, cold insulating clothing.

Body Protection

Hand Protection

Wear insulated gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

PROPERTIES	N-Butane	Iso-Butane	Propane
A. APPEARANCE FORM	liquid & vapor	liquid & vapor	liquid & vapor
APPEARANCE COLOR	colorless	colorless	colorless
B. ODOR	faint odor	faint odor	faint odor
C. ODOR THRESHOLD	No data	No data	No data
D. pH	Not applicable	Not applicable	Not applicable
E. MELTING/FREEZING POINT	-138℃	-160℃	-187℃
F. INITIAL BOILING POINT AND RANGE	-1℃	-12℃	-42℃
G. FLASH POINT	-60℃ (c.c.)	-88℃	-104℃
H. EVAPORATION RATE	No data	No data	No data
I. FLAMMABILITY(SOLID, GAS)	flammable gas	flammable gas	flammable gas
J. UPPER/LOWER FLAMMABILITY OR	1.8-8.4 vol%	1.8-8.4 vol%	2.2-9.5 vol%
K. VAPOR PRESSURE	1557mmHg (at 20℃)	2280mmHg (at 20℃)	5625mmHg (at 20℃)
L. SOLUBILY	3.25mL/100mL(at 20℃)	No data	0.007g/100mL (at 20℃)
M. VAPOR DENSITY	2.10 g/cm3(air=1)	2.59 g/cm3(air=1)	1.55 g/cm3(air=1)
N. RELATIVE DENSITY	0.578 (20℃/4℃ liquid)	0.578 (20℃/4℃ liquid)	0.501 (20℃/4℃ liquid)
O. PARTITION COEFFICIENT OF	log Pow 2.89	log Pow 2.80	log Pow 2.36
P. AUTO-IGNITION TEMPERATURE	287℃	460℃	466℃
Q. DECOMPOSITION TEMPERATURE	No data	No data	No data
R. VISCOSITY	No data	No data	No data
S. EXPLOSIVE PROPERTIES	No data	No data	No data

10. STABILITY AND REACTIVITY

A. CHEMICAL STABILITY

Material is stable under normal conditions.

B. POSSIBILITY OF HAZARDOUS REACTIVITY

Stable at a normal temperature and pressure.

C. CONDITION TO AVOID

Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material.

D. INCOMPATIBLE MAERIALS

Strong oxidizers such as hydrogen peroxide,nitric acid,sulphuric acid,etc.

E. HAZARDROUS DECOMPOSITION

Toxic carbon compounds(CO2,etc)

11. TOXICOLOGICAL INFORMATION

A. INFORMATION ON THE LIKELY ROUTES

INHALATION EXPOSURE

Irritation, vomiting, difficulty in breathing, irregular heart beating, headache, sleepiness, dizziness, spasm, coma

INGESTION EXPOSURE

May cause ingestion irritation.

SKIN EXPOSURE

Frostbite.

EYE EXPOSURE

Frostbite.

B. DELAYED AND IMMEDIATE EFFECTS AND ALSO CHRONIC EFFECTS FROM SHORT AND LONG TERM EXPOSURE

ACUTE TOXIC

ORAL

LD50(rat) :No data

SKIN

LD50(rabbit) :No data

INHALATION

LD50(rat) :658,000mg/m3,LD50(mouse) :680,000mg/m3

SKIN CORROSION/IRRITATION

No data

SERIOUS EYE DAMAGE/IRRITANT

No data

RESPIRATORY SENSITIZATION

No data

SKIN SENSITIZATION

No data

CARCINOGENICITY

KOREAN INDUSTRIAL RAW OF

No data

KOREAN DEPARTMENT OF LABOR

No data

IARC

No data

OSHA

No data

ACGIH

No data

NTP

No data

EU CLP

No data

GERM-CELL MUTAGENICITY

No data

GENERATIVE TOXICITY

No data

SPECIFIC TARGET ORGAN

No data

SPECIFIC TARGET ORGAN

No data

ASPIRATION HAZARD

No data

12. ECOLOGICAL INFORMATION

A. AQUATIC/TERRESTRIAL ECOLOGY TOXICITY

FISH	No data
DAPHNIA	No data
ALGAE	No data

B. PERSISTENCE AND DEGRADABILITY

PERSISTENCE	Not applicable
DEGRADABILITY	No data

C. BIOACCUMULATIVE POTENTIAL

BIODEGRADATION	No data
BIOACCUMULATION	No data

D. MOVILITY IN SOIL

Absorbs to soil and has low mobility

E. OTHER HAZARDOUS EFFECTS

No data

13. DISPOSAL CONSIDERATIONS

A. DISPOSAL METHODS	All disposal practices must be in compliance with all laws and regulations Consult local, state, and federal regulations for specific requirements
B. PRECAUTIONS	the contents of containers must be disposed according to related regulations

14. TRANSPORT INFORMATION

A. UN NUMBER	UN1075
B. UN PROPER SHIPPING NAME	PETROLEUM GASES, LIQUEFIED, class 2.1, F-D, S-U
C. HAZARD CLASS(ES)	Class 2.1
D. PACKING GROUP	No data
E. MARINE POLLUTANT SUBSTANCES	Not applicable
F. SPECIAL PRECAUTIONS FOR USER	Passenger plane or train:Prohibited

15. REGULATORY INFORMATION

A. REGULATORY INFORMATION	This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
---------------------------	--

B. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS SPECIFIC FOR THE PRODUCT IN QUESTION:

1)USA

CERCLA SECTION 103 (40CFR302.4)	Not regulated
SARA SECTION 302(40CFR355.30)	Not regulated
SARA SECTION 304(40CFR355.40)	Not regulated
SARA SECTION 313(40CFR372.65)	Not regulated
SARA SECTION 311/312 (40CFR370.21)	Acute:Yes Chronic:No Fire:Yes Reactivity:No Sudden Pressure:Yes
OSHA PROCESS SAFETY(29CFR1910.119)	Not regulated

2)EU classification and Labelling information

CLASSIFICATION	F
RISK PHRASES	R12:Extremely flammable
SAFTY PHRASES	S2:Keep out of the reach of children S9:Keep container in a well-ventilated place S16:Keep away from sources of ignition – No smoking

16. OTHER INFORMATION

A. SOURCE OF DATA

ECB-ESIS(European chemical Substances Information System)(<http://ecb.jrc.it/esis>)
ECOTOX Database, EPA(<http://cfpub.epa.gov/ecotox>)
HSDB, U.S. National Library of Medicine(<http://toxnet.nlm.nih.gov>)
IUCLID Chemical Data Sheet, EC-ECB
International Chemical Safety Cards(ICSC)
<http://www.nema.go.kr/hazmat/>
<http://ncis.nier.go.kr>
Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>)
ECB-ESIS(European chemical Substances Information System)(<http://ecb.jrc.it/esis>)
International Chemical Safety Cards(ICSC)(<http://www.nihs.go.jp/ICSC>)
TOXNET, U.S. National Library of Medicine(<http://toxnet.nlm.nih.gov>)
The Chemical Database, The Department of Chemistry at the University of Akron (<http://ull.chemistry.uakron.edu/erd>)
NLM:HSDB
NLM:ChemIDPlus
TOMES:Loli
TOPKAT:Skin Irritation
Ecological Structure Activity Relationships(ECOSAR)
Korea Occupational Safety & Health Agency
EPI Suite
Quantitative Structure Activity Relation(QSAR)

Globally Harmonized System of classification and labeling of chemical(GHS), United Nations.

B. THE DATE OF PREPARATION OF THE SDS December. 22. 2012

C. THE NUMBER OF TIMES REVISED AND THE DATE OF PREPARATION OF THE LATEST REVISION

THE NUMBER OF TIMES REVISED No. 1

THE DATE OF PREPARATION OF January. 23. 2015

D. OTHERS

The information contained herein is to the best of our knowledge and belief accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee for result obtained, and assume no responsibility for damages incurred by use of this product. It is the responsibility of the user to comply with all federal, state and local laws and regulations.