

MAXSUN CO.,LTD.

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MATERIAL SAFETY DATA SHEET**SECTION I - PRODUCT AND COMPANY IDENTIFICATION**

Company Name: DAE RYUK CAN CO.,LTD.	Regular Telephone No. (02)552-6789 Emergency Telephone No. (02)552-6789
Address: 733-25 Yeoksam-dong, Kangnam-ku, Seoul, Korea	D.O.T. Proper Shipping Name: PETROLEUM GASES, LIQUEFIED
Product Trade Name or Brand Name: MSR ISO PRO	Class 2.1, Flammable gas UN1075
Other Product Description or Identification: For use Only in Portable Gas Appliances	U.S.A. Emergency Contact Number: 1 800 535 5053
Creation Date: 2002. 10. 31	Revision Date: 2008.12

SECTION II - COMPOSITION, INFORMATION ON INGREDIENTS

Ingredient Chemical Name	TRADE NAMES/ SYNONYMS	CAS NUMBER	EINECS Number	Approximate Weight %
Propane	n-Propane, Propylhydride	74-98-6	200-827-9	7~11%
Iso-Butane	2-Methyl Propane	75-28-5	200-857-2	84~88%
n-Butane	Butane, Liquefied Petroleum Gas	106-97-8	203-448-7	5%
others hydrocarbon				

SECTION III - HAZARDS IDENTIFICATION**NFPA Ratings(scale 0-4):** health=2 fire=4 reactivity=0**EC Classification(calculated):** No classification assigned.**Emergency Overview:****Color:** colorless**Physical Form:** liquefied gas**Odor:** faint odor**Major Health Hazards:** respiratory tract irritation, central nervous system depression, difficulty breathing.**Physical Hazards:** Flammable gas. May cause flash fire. Flash back hazard. Containers may rupture or explode if exposed to heat.**Potential Health Effects:****Inhalation:****Short Term Exposure:** irritation, nausea, vomiting, difficulty, breathing, headache, drowsiness, symptoms of drunkenness, tingling sensation, suffocation, convulsion, coma.**Long Term Exposure:** no information on significant adverse effects.**Skin Contact:****Short Term Exposure:** no information on significant adverse effects.**Long Term Exposure:** no information on significant adverse effects.**Eye Contact:****Short Term Exposure:** no information on significant adverse effects.**Long Term Exposure:** no information is available.**Ingestion:****Short Term Exposure:** ingestion of a gas is unlikely.**Long Term Exposure:** ingestion of a gas is unlikely.

Carcinogen Status:

OSHA: N

NTP: N

IARC: N

SECTION IV - FIRST AID MEASURES

Inhalation: Remove from exposure immediately. Use a bag valve mask or similar device to perform artificial respiration(rescue breathing) if needed. Get medical attention.

Skin Contact: Wash if needed. If frostbite, freezing, or cryogenic burns occur, warm affected area in warm water. If this is not available, gently wrap affected parts in blankets. Allow circulation to return naturally. Get medical attention immediately.

Eye Contact: Wash eyes immediately with large amount of water, occasionally lifting upper and lower lids, until no evidence of chemical remains.
Continue irrigating with normal saline until ready to transport to hospital.
Cover with sterile bandages. Get medical attention immediately.

Ingestion: If vomiting occurs, keep head lower than hips to help prevent aspiration. Get medical attention, if needed.

SECTION V - FIRE FIGHTING MEASURES

Flash Point	Butane	-76°F(-60°C)	Flammable Limits in Air: (vol.% @21°C/70°F)	Butane	LEL-UEL=1.9 - 8.5
	Propane	-157°F(-105°C)		Propane	LEL-UEL=2.1 - 9.5
Autoignition:	Butane	761°F(405°C)			
	Propane	842°F(450°C)			

Extinguishing Media:

Water Fog, Standard form, Special Alcohol-stable foam, Carbon Dioxide-CO₂, Dry Chemical

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.

Unusual Fire and Explosion Hazards:

Rapidly excess heating or fire will be caused burst or rupture of a container.

Danger: *Extremely Flammable.* Do not use near fire or flame.

SECTION VI - ACCIDENTAL RELEASE MEASURES**Occupational Release:**

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 deny entry. Remove sources of ignition. Ventilate closed spaces before entering.

SECTION VII - HANDLING AND STORAGE

Store and handle in accordance with all current, regulations and standards. Grounding and bonding required. Subject to storage regulations: U.S. OSHA 29 CFR 1910.110. Keep separated from incompatible substances.

SECTION VIII - EXPOSURE CONTROLS, PERSONAL PROTECTION

Exposure Limits:

iso-Butane:

800ppm(1900mg/m³) ACGIH TWA
 800ppm(1900mg/m³) NIOSH recommended TWA 10 hour(s)

n-Butane:

800ppm(1800mg/m³) OSHA TWA(vacated by 58 FR 35338, June 30, 1993)
 800ppm(1800mg/m³) ACGIH TWA
 800ppm(1800mg/m³) NIOSH recommended TWA

Propane:

1000ppm(1800mg/m³) OSHA TWA
 2500ppm(1800mg/m³) ACGIH TWA
 1000ppm(1800mg/m³) NIOSH recommended TWA

Liquified Petroleum Gas(LPG):

1000ppm(1800mg/m³) OSHA TWA
 1000ppm(1800mg/m³) ACGIH TWA
 1000ppm(1800mg/m³) NIOSH recommended TWA

Ventilation: Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

Eye Protection: For the gas: Eye protection not required, but recommended.
For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in

Clothing: For the gas: Protective clothing is not required.
For the liquid: Wear appropriate protective, cold insulating clothing.

Gloves: Wear insulated gloves.

Respirator: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.
 For Unknown Concentrations or Immediately Dangerous to life or health-any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
 Any self-contained breathing apparatus with a full facepiece.

SECTION IX - PHYSICAL AND CHEMICAL DATA

95% Boiling Point: @101.3Kpa(760mmhg)	below 0°C(32.0°F)	Specific Gravity/Density (vs. Water @4°C/39.2°F)	0.562 mg/m ³
Vapor Pressure Maximum: @21°C(70°F)	3.58kg/cm ² (50.9Psig)	Percent Volatiles (Ambient/ 21°C/70°F)	Approximately 99.99% by Volume
Vapor Density vs. Air=1 @15-32°C(60-90°F)	Heavier > 1.0	Evaporation Rate: (vs. n-Butyl Acetate=1)	> 1.0
Solubility in Deionized Water: Negligible<0.1% by wt% (Weight% @ 10°C/50°F)			
Appearance and Odor: Clear & odorant Added			

SECTION X - STABILITY AND REACTIVITY

Chemical Stability: Stable at normal temperatures and pressure.

Incompatibility: Oxidizing materials

Hazardous Decomposition Products(From burning, welding, oxidation, high temperature): Oxides of carbon

Hazardous Polymerization: Will not polymerize

Conditions to Avoid: Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Containers may rupture or exposed to heat

SECTION X I - TOXICOLOGICAL INFORMATION

iso-Butane:

Toxicity Data:

57pph/15 minute(s) inhalation-rat LC50

Local Effects:

Irritant: inhalation

Acute Toxicity Level:

Relatively Non-toxic: inhalation

Target Organs: central nervous system

Additional Data: Stimulants such epinephrine may induce ventricular fibrillation.

n-Butane:

Toxicity Data:

658mg/m³/4 hour(s) inhalation-rat LC50

Acute Toxicity Level:

Relatively Non-toxic: inhalation

Target Organs: central nervous system

Additional Data: Stimulants such as epinephrine may induce ventricular fibrillation

Propane:

Toxicity Data:

Acute Toxicity Level:

Relatively Non-toxic: inhalation

Target Organs: central nervous system

Additional Data: Stimulants such as epinephrine may induce ventricular fibrillation

SECTION X II - ECOLOGICAL INFORMATION

Not available

SECTION X III - DISPOSAL CONSIDERATIONS

Subject to Disposal Regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001. Dispose in accordance with all applicable regulations.

SECTION X IV - TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101. SHIPPING NAME-UN NUMBER; HAZARD CLASS; PACKING GROUP; LABEL;

*** Maritime transport IMDG**

- IMDG Class: 2.1
- UN Number : 1075
- Packaging Group : No
- Marine pollutant : No
- Proper shipping name: PETROLEUM GASES, LIQUEFIED

SECTION X V - REGULATORY INFORMATION

U.S. Regulations:

TSCA INVENTORY STATUS: Y
TSCA 12(b) EXPORT NOTIFICATION: Not listed.
CERCLA SECTION 103 (40CFR302.4): N
SARA SECTION 302(40CFR355.30): N
SARA SECTION 304(40CFR355.40): N
SARA SECTION 313(40CFR372.65): N
SARA HAZARD CATEGORIES, SARA SECTION 311/312 (40CFR370.21):
ACUTE: Y
CHRONIC: N
FIRE: Y
REACTIVE: N
SUDDEN RELEASE: Y
OSHA PROCESS SAFETY(29CFR1910.119): N

State Regulations:

California Proposition 65: N

European Regulations:

Iso-Butane-EC NUMBER200-857-2
n-Butane. -EC NUMBER203-448-7
Propane-EC NUMBER; 200-827-9

SECTION X VI- OTHER INFORMATION

Precautions to be taken in Handling and Storage: Keep out of reach of Children. Do not expose to heat or store at temperature Above 110 °F keep contents at temperature above 32°F

Other Precautions:

Use in well ventilated area.

Special Precautionary Statements: Please read and follow the directions on the product label. they are your best guide to using this product in the most effective way and give the necessary safety precautions to protect your health.