



Germ cell mutagenicity	Classification not possible
Carcinogenicity	Classification not possible
Reproductive toxicity	Classification not possible
Specific target organ systemic toxicity(single exposure)	Class 3(respiratory tract irritation)
Specific target organ systemic toxicity(repeated exposure)	Classification not possible
Aspiration hazards	Not classified
Environmental hazards	
Hazards to the aquatic environment(acute)	Classification not possible
Hazards to the aquatic environment(inveteracy)	Classification not possible

## Label element

Pictogram



Signal word

Danger

Hazard and toxicity info

(anesthetic properties)leads drowsy or dizzy  
 Extremely flammable aerosol  
 Extremely flammable gas

Caution

[Precaution]

Use only outdoor or well ventilated place.  
 Pressurized container: Do not punch a hole. Do not put in flame.  
 Keep away from heat, spark, flame and similar ignition sources. – No smoking  
 Avoid inhaling gas, mist, vapor and spray.

[Handling]

Do not spray to flame or incandescent body.  
 Eliminate the ignition point if it is not danger.  
 Ask physician for advice if feel bad.

[Storage]

Inhaled: Move to ventilated place and take a rest.  
 In case of fire by gas leak: Do not start fire fighting until gas leak is fully finished.  
 Keep away from direct sunshine. Do not store in heat place over than 40°C.  
 Store in locked place.  
 Seal up the container and store in a well ventilated place.  
 Store in a cool place.

[Disposal]

Ask assigned disposal agency.

## 3. Composition/information on ingredients

Composition		CAS No.	Density (volume%)	Chemical formula	Reference number in gazette list	Industrial safety and health law	
Prod. No. 70-60 Kotelyzer Gas Net 150g	{	propane	74-98-6	5.0~10.0	CH <sub>3</sub> CH <sub>2</sub> CH <sub>3</sub>	(2)-3	N/A
		n-butane	106-97-8	60.0~70.0	C <sub>4</sub> H <sub>10</sub>	(2)-4	No.482
		Isobutene	75-28-5	25.0~35.0	C <sub>4</sub> H <sub>10</sub>	(2)-4	No.482

Prod. No. 70-60 Kotelyzer Gas Net 270g	{	propane	74-98-6	5.0~10.0	CH <sub>3</sub> CH <sub>2</sub> CH <sub>3</sub>	(2)-3	N/A
		n-butane	106-97-8	60.0~70.0	C <sub>4</sub> H <sub>10</sub>	(2)-4	No.482
		Isobutene	75-28-5	25.0~35.0	C <sub>4</sub> H <sub>10</sub>	(2)-4	No.482
Prod. No. 70-60 Kotelyzer Gas Net 270g for Winter	{	propane	74-98-6	20.0~30.0	CH <sub>3</sub> CH <sub>2</sub> CH <sub>3</sub>	(2)-3	N/A
		n-butane	106-97-8	50.0~60.0	C <sub>4</sub> H <sub>10</sub>	(2)-4	No.482
		Isobutene	75-28-5	20.0~30.0	C <sub>4</sub> H <sub>10</sub>	(2)-4	No.482

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#### 4. First-aid measures

Give prompt medical care in each cases.

Eye contact	: Immediately, flush eyes thoroughly with water at least 15 minutes. If the sufferer wears contact lens and able to remove them easily, remove them and flush eyes further. Ask physician for advice.
Skin contact	: Take off the contaminated clothes, shoes and flush skin thoroughly with Water and soap. Do not use solvent and thinner. In case of frosted by gas, do not attempt to take off clothes and flush with water or hot water. Ask physician for advice if pain or scar remains.
Inhalation	: Bring sufferer to ventilated place. Give him artificial respiration if breathing is unsteady or stopped. Ask physician for advice.
Ingestion	: If ingested accidentally, wash the mouth with water and ask physician for advice. Do not induce vomiting without physician's advice.
Acute symptom or late symptom	: Irritation to eye or respiratory tract, CNS-depressant property, anesthetic action, dizzy, drowse, headache, vomit, frost injury in case of contact to skin.
Most serious symptom	: not determined
Remarks for rescue	: Wear proper protective cloth. Watch out for fire.
Remarks to physician	: not determined

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#### 5. Fire-fighting measures

Extinguishing media	Carbon dioxide gas, powder/form chemical, dry sand, water spray, mist.
Hazards under fire	Keep away aerosol container from fire. Do not inhale smoke. Combustion gas contains toxic like carbon monoxide. May cause polymerize explosively in case of fire. Possibly irritated, toxic gas created under fire.
Extinguish methods	: Extinguish from windward. No admittance expect authorized person. Move away flammable substance from fire if it is not dangerous. Use specified extinguishing media. Do not start fire fighting until leaking are fully finished. Container of aerosol may explode if it remains around fire. Keep distance from fire. Cool off the aerosol container by water.

No admittance expect authorized person.  
 Cool off surrounding facilities with water spray to prevent temperature rise caused by radiation heat.  
 Do not pour water directory to leaking point and safety equipment. It may cause freeze of the equipment.  
 Cool off the container further after fire fighting.  
 Fire fighter protection : Fire fighter must wear applicable protective equipment (heat resistant clothes, goggle). Also equip self contained-compressed air breathing apparatus.

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## 6. Accidental release measures

Human body : Wear applicable protective equipment.  
 Protective equipment and emergency measure : Perform from windward. Turn upward the container and blow out gas completely.  
 Do not touch leaking container and do not walk around the area.  
 Get rid of possible ignition source, heated object and flammable object.  
 Evacuate person around there and no admittance expected authorized person.  
 Prepare extinguishing media for in case of fire.  
 Ventilate before entering closed place.  
 Environment : Do not release leaked fluid to sewage or street gully.  
 Get rid of spark object.  
 Difficult to collect leaked gas. Try to ventilate well to avoid lack of oxygen.  
 Prevention measure for second accident : Get rid of ignition sources and prepare extinguishing media.  
 Do not use tools which may create spark.

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## 7. Handling and storage

Handle  
 Technical measure : Pay attention to the direction of wind and avoid blowing to the person.  
 Do not use fire, spark and high temperature object.  
 Do not spray to fire.  
 Do not store in temperature elevated place. May explode container at temperature elevated place.  
 Do not tip over, drop or give any damage to container intentionally.  
 Ventilation : Use in a well ventilated place.  
 Equip local ventilation equipment and wear applicable protective clothes in case of using in a sealed place.  
 Discharge electrostatic and wear electro conductive clothes and shoes.  
 All equipment should be grounded electrically to remove static electricity.  
 Handling : Do not inhale vapor and avoid to contact.  
 Do not inhale intentionally.  
 Storage  
 Proper condition : Keep away from infants.  
 Keep away from direct sunshine. Store in a well ventilated place.  
 Do not store at wet or humid place as the container may get rust and result to leak or blowout the gas.  
 Keep away from fire or heat source.  
 Do not store in heat place over than 40°C.

Keep away from oxidant, oxygen, explosive substance, halogen, compressed air, acid, base, food chemicals.

Subject to comply with Fire Protection Law and Industrial Safety and Health Law.

Container material : Subject to comply with High Pressure Gas Safety Law.

#### 8. Exposure controls/ personal protection

Facility measures : Explosion protection.  
ESD prevention.  
Well ventilated and avoid vapor or gas remains.  
Keep away from heat or ignition source.  
Eye washer and shower to be installed at the workplace.

#### Exposure limit

Component	Density (Industrial safety and health law.)	Allowed density		
		Japan Society for Occupational Health	ACGIH (TLV-TWA)	ACGIH (TLV-STEL)
Liquid Petroleum Gas	Not established	n-butane 500ppm	n-butane 800ppm	Not established

Protective equipment : Wear on demands.  
Protection for respiration apparatus : Gas protection mask, self contained compressed air breathing apparatus.  
Hand protection : Glove  
Eye protection : Goggle, flameproof mask  
Ski, body protection : Protective cloth, apron, electro conductive boots.  
Sanitary : Eating and smoking are not allowed while at work.  
Wash hand well after use.

#### 9. Physical and chemical properties

	Spray
	Atmospheric pressure - gas / In pressure container - fluid
Appearance	Clear and colorless
Odor	odorless
pH	Not applicable
Melting point	-187.7~-138.4°C
Boiling point	-42.1~-0.5°C
Flash point	-104.4~-73.8°C
Ignition point	405~550°C
Explosive range	1.8~9.5vol%
Vapor pressure	0.30MPa (20°C)
Vapor density	1.895~2.538kg/m <sup>3</sup> (1MPa、15.6°C)
Relative density	0.555 (20°C)
Solubility	Soluble in water a little
Octanol-water Partition Coefficient	No data available
Decomposition temperature	No data available
Others	No data available

#### 10. Stability and reactivity

Stability : May explode when temperature elevate over than 40°C.

Reaction hazards	Pressure inside of container at room temperature is 0.31MPa. Ignite by high temperature, spark, and open flame.
Condition to avoid	React with strong oxidizing agent and may ignite or explode. Store in heat and humid place. Use around fire. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agent.
Hazards decomposition products	It may create toxic gas, carbon monoxide by combustion.
Others	

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## 1 1. Toxicological information

Acute toxicity (oral)	: (Product data) No information available
Acute toxicity (dermal)	: (Product data) No information available
Acute toxicity (inhalation : gas)	: (Product data) No information available (Propane) marmot LD50(2hour)>55000ppm(4hour conversion>38890ppm) (n-butane) Rat LD50(4hour):277374ppm
Acute toxicity (inhalation: vapor)	: (Product data) No information available
Acute toxicity (inhalation: mist)	: (Product data) No information available
Skin corrosion/ Irritation	: (Product data) No information available (Propane) Not classified as only slight erythematous patch is found temporary and primary skin irritation is neglect according to ACGIG (7 <sup>th</sup> , 2001).
Serious damage to eye /eye irritation	: (Product data) No information available (n-Butane)No eye irritation to rabbit. No information to human body is found.
Respiratory sensitization	: (Product data) No information available
Skin sensitization	: (Product data) No information available
Generative cell mutagenicity	: (Product data) No information available (Propane) Not able to classify as only in vitro test report available. (Butane) Negative on in vitro reverse mutation test.
Carcinogenicity	: (Product data) No information available
Reproductive toxicity	: (Product data) No information available
Specific target organ	: (Product data) No information available
Systemic toxicity (single exposure)	(Propane) Anesthetically-active according to ACGIH. (n-butane) Anesthetically or central nervous depression may active in case of inhalation of concentrated n-butane, according to ACGIH and Japan Society for Occupational Health.
Specific target organ systemic toxicity (repeated exposure)	: (Product data) No information available (n-butane)Toxicity is not found by repeated inhalation test with rat. (mixture of isobutene and pentane). But unable to classify as significant information against human is not found.
Aspiration hazards	: (Product data) No information available
Others.	: (Product data) No information available

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 1 2. Ecological information

Hazards to the aquatic : (Product data) No information available  
 environment(acute)  
 Hazards to the aquatic : (Product data) No information available  
 Environment(inveteracy)  
 Others : (Product data) No information available

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 1 3. Disposal considerations

Drain gas from container fully before disposal.  
 Remnants : No remnants left after drainage in container.  
 Container • packaging : Disposal after gas drainage.

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 1 4. Transport information

• Refer section 7. Handling and storage.  
 Specified safety measure Keep container under 40°C during transportation.  
 Prevent collapse of cargo.  
 National regulation  
 Ground transport Comply with fire defense law and the other transport law.  
 Marine transport Comply with ship safety law.  
 Air transport Comply with aviation law.  
 International regulation  
 UN classification IMDG code class 2.1  
 UN no. 1950

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 1 5. Regulatory information

Industrial safety and health law Flammable gas, Object substance (butane)  
 Ship safety law Propellant, Ignitable liquid  
 Aviation law Propellant, Ignitable liquid  
 Fire defense law Notification based on clause 9-3 (over 300kgs)  
 High pressure gas safety law Not applicable ( liquefied gas, flammable gas)  
 Dangerous goods marine transport and storage IMDG code class 2.1 (UN No. 1950) 。  
 Poisonous and deleterious substance control law Not applicable  
 PRTR Not applicable

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 1 6. Other information

Books for reference LPG MSDS  
 PRTR  
 Industrial Safety and Health Law  
 Poisonous and Deleterious Substances Control Law  
 Remarks for description The information contained herein is based on all the information and data that we can obtain. However no warranty or guarantee is expressed or implied regarding the accuracy of these data and no legal responsibility is assumed for use of or reliance upon this data.