

SAFETY DATA SHEET

1. Identification

Product Name: Tri-Blend (50% Butane/ 25% Propane/25% Isobutane)
Product Code:
SDS Date: 3/1/2019
Use:

Address: BVV
 1251 Frontenac Rd. Ste 150
 Naperville IL 60563
Phone: (331) 281-0154

CHEMTEL: (800) 255-3924

2. Hazard(s) Identification

GHS Classification

Flammable (Category 1) Gases Under Pressure

Pictogram



Signal Word

Danger

Hazard Statement

Contains gas under pressure; may explode if heated Extremely flammable gas

Precautionary

Prevention: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Response: Eliminate all ignition sources if safe to do so.
 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
Storage: Protect from sunlight.
 Store in well-ventilated place.

Hazards Not Otherwise Classified:

Not Available

3. Composition/Information On Ingredients

Name	Cas	Concentration
Butane	106-97-8	50%
Propane	74-98-6	25%
Isobutane	75-28-5	25%

Chemical Substance	Chemical Family	Trade Names
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Butane	Hydrocarbons, Aliphatic, Saturated	N-BUTANE; LIQUIFIED PETROLEUM GAS; NORMAL BUTANE; BUTYL HYDRIDE; LPG; UN 1011; C4H10
Propane	Hydrocarbons, Aliphatic, Saturated	N-PROPANE; DIMETHYLMETHANE; PROPYL HYDRIDE; R-290; PROPYLHYDRIDE; LIQUEFIED PETROLEUM GAS; LPG; >96% NATURAL GRADE; >99.9% PURE GRADE; UN 1978; C3H8
Isobutane	Hydrocarbons, Aliphatic, Saturated	2-METHYL PROPANE; TRIMETHYL METHANE; UN 1969; C4H10

4. First-aid Measures

If Inhaled:	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.
In Case of Skin Contact:	If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115°F; 41-46°C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.
In Case of Eye Contact:	Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.
If Swallowed:	If a large amount is swallowed, get medical attention.
Note to Physicians:	For inhalation consider oxygen.

5. Fire-fighting Measures

Butane	
Extinguishing Media:	Carbon dioxide, regular dry chemical Large fires: Flood with fine water spray.
Products of Combustion:	Carbon monoxide, carbon dioxide, water and toxic and irritating fumes.
Protection of Firefighters:	Any self-contained breathing apparatus with a full facepiece.
Propane	
Extinguishing Media:	Regular dry chemical, high expansion foam Large fires: Flood with fine water spray.
Products of Combustion:	Carbon monoxide, carbon dioxide, water and toxic and irritating fumes
Protection of Firefighters:	Any self-contained breathing apparatus with a full facepiece.
Isobutane	
Extinguishing Media:	Carbon dioxide, regular dry chemical Large fires: Flood with fine water spray.
Products of Combustion:	Carbon monoxide, carbon dioxide, water and toxic and irritating fumes
Protection of Firefighters:	Any self-contained breathing apparatus with a full facepiece.

Butane & Propane

HAZARD	NFPA
Health	1
Fire	4
Reactivity	0

Isobutane:

HAZARD	NFPA
Health	2
Fire	4
Reactivity	0

6. Accidental Release Measures

Personal Precautions, Protective Equipment, and Emergency Procedures:	Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering.
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Do not touch spilled material.

Environmental Precautions:

Avoid heat, flames, sparks and other sources of ignition.

Methods and Materials for Containment and Clean Up:

Stop leak if possible without personal risk. Reduce vapors with water spray. Remove sources of ignition. Stop leak, evacuate area. Use protective equipment. Contact emergency personnel. Avoid ignition sources.

7. Handling and Storage

Safe Handling:

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. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.

Safe Storage:

Grounding and bonding required. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.

8. Exposure Controls/Personal Protection

Name	CAS
Butane	106-97-8
N-BUTANE: 800 ppm (1900 mg/m ³) OSHA TWA (vacated by 58 FR 35338, June 30, 1993) 800 ppm (1900 mg/m ³) NIOSH recommended TWA 10 hour(s) LIQUIFIED PETROLEUM GAS (LPG): 1000 ppm (1800 mg/m ³) OSHA TWA 1000 ppm (1800 mg/m ³) NIOSH recommended TWA 10 hour(s) ALIPHATIC HYDROCARBON GASES ALKANE (C1-C4): 1000 ppm ACGIH TWA	
Name	CAS
Propane	74-98-6
PROPANE: 1000 ppm (1800 mg/m ³) OSHA TWA 1000 ppm (1800 mg/m ³) NIOSH recommended TWA 10 hour(s) LIQUIFIED PETROLEUM GAS (LPG): 1000 ppm (1800 mg/m ³) OSHA TWA 1000 ppm ACGIH TWA 1000 ppm (1800 mg/m ³) NIOSH recommended TWA 10 hour(s) ALIPHATIC HYDROCARBON GASES ALKANE (C1-C4): 1000 ppm ACGIH TWA	
Name	CAS
Isobutane	75-28-5
ISOBUTANE: 800 ppm (1900 mg/m ³) NIOSH recommended TWA 10 hour(s) LIQUIFIED PETROLEUM GAS (LPG): 1000 ppm (1800 mg/m ³) OSHA TWA 1000 ppm ACGIH TWA 1000 ppm (1800 mg/m ³) NIOSH recommended TWA 10 hour(s) ALIPHATIC HYDROCARBON GASES ALKANE (C1-C4): 1000 ppm ACGIH TWA	

Engineering Control:

Handle only in fully enclosed systems.

Eye/Face 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 the immediate work area.

Skin Protection:

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

Respiratory Protection:

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.

9. Physical and Chemical Properties

Appearance:

Butane

Colorless

Odor:

Butane

Faint petroleum-like odor

Odor Threshold:

Butane

6.16 ppm

pH:

Butane

Not Applicable

Melting/Freezing Point:

Butane

-216 F (-138 C)

Initial Boiling Point/Range:	Butane	30°F (-1°C)
Flash Point:	Butane	-76 F (-60 C)(CC)
Evaporation Rate:	Butane	Not applicable for gas. Liquefied n-butane will evaporate rapidly at room temperature.
Flammability:	Butane	Not Available
Upper Explosion Limit:	Butane	0.085
Lower Explosion Limit:	Butane	0.019
Vapor Pressure:	Butane	1557 mmHg @ 20°C
Vapor Density:	Butane	2.1 (Air=1)
Specific Gravity:	Butane	0.5788 @ 0°C
Water Solubility:	Butane	0.15
Partition Coefficient:	Butane	630.96 (log = 2.80) (estimated from water solubility)
Auto Ignition Temp:	Butane	549°F (287°C)
Viscosity:	Butane	Not Available
Molecular Weight:	Butane	58.12
Molecular Formula:	Butane	C-H3-(C-H2)2-C-H3
Density:	Butane	Not Available
Weight per Gallon:	Butane	Not Available
Volatility by Volume:	Butane	100%
Volatility	Butane	Not Applicable
Solvent Solubility:	Butane	Soluble: Alcohol, ether, chloroform
Appearance:	Propane	Clear
Odor:	Propane	Gasoline odor
Odor Threshold:	Propane	5000-20000 ppm
pH:	Propane	Not Applicable
Melting/Freezing Point:	Propane	-310°F (-190°C)
Initial Boiling Point/Range:	Propane	-40°F (-40°C)
Flash Point:	Propane	-157 F (-105 C)
Evaporation Rate:	Propane	Not Applicable
Flammability:	Propane	Not Available
Upper Explosion Limit:	Propane	0.095
Lower Explosion Limit:	Propane	0.021
Vapor Pressure:	Propane	6398 mmHg @ 21.1°C
Specific Gravity:	Propane	
Vapor Density:	Propane	1.55 (Air=1)
Water Solubility:	Propane	Very slightly soluble
Partition Coefficient:	Propane	Not Available
Auto Ignition Temp:	Propane	842°F (450°C)
Volatility by Volume:	Propane	Not Available
Viscosity:	Propane	Not Available
Molecular Weight:	Propane	44.11
Molecular Formula:	Propane	C-H3-C-H2-C-H3
Density:	Propane	0.116
Weight per Gallon:	Propane	Not Available

Volatility by Volume:	Propane	Not Available
Volatility	Propane	Not Applicable
Solvent Solubility:	Propane	Soluble: Absolute alcohol, ether, chloroform, benzene, turpentine
Appearance:	Isobutane	Colorless
Odor:	Isobutane	Petroleum odor
Odor Threshold:	Isobutane	Not Available
pH:	Isobutane	Not Applicable
Melting/Freezing Point:	Isobutane	-254°F (-159°C)
Initial Boiling Point/Range:	Isobutane	10°F (-12°C)
Flash Point:	Isobutane	126°F (-88°C) (CC)
Evaporation Rate:	Isobutane	Not Applicable
Flammability:	Isobutane	Not Available
Upper Explosion Limit:	Isobutane	0.084
Lower Explosion Limit:	Isobutane	0.018
Vapor Pressure:	Isobutane	3.1 atm @ 21.1°C
Vapor Density:	Isobutane	2 (Air=1)
Specific Gravity:	Isobutane	0.549 @ 20°C
Water Solubility:	Isobutane	Slightly soluble
Partition Coefficient:	Isobutane	Not Available
Auto Ignition Temp:	Isobutane	864°F (462°C)
Viscosity:	Isobutane	0.0077 cP @ 25°C
Molecular Weight:	Isobutane	58.12
Molecular Formula:	Isobutane	C4-H10
Density:	Isobutane	Not Available
Weight per Gallon:	Isobutane	Not Available
Volatility by Volume:	Isobutane	100%
Volatility	Isobutane	Not Applicable
Solvent Solubility:	Isobutane	Soluble: Alcohol, ether, chloroform

10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressure.
Possibility of Hazardous Reactions:	Will not polymerize.
Conditions to Avoid:	Stable at normal temperatures and pressure.
Incompatible Materials:	Oxidizing materials, combustible materials, halogen compounds,
Hazardous Decomposition Products:	Oxides of carbon.

11. Toxicological Information

Name: Butane LC(50): 658 mg/l (270,000 ppm) butane (4 hour-rat) Dermal LD50: Not Established	CAS: 106-97-8
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Skin Corrosion/Irritation:	Blisters, frostbite
Serious Eye Damage/Eye Irritation:	Frostbite, blurred vision
Respiratory or Skin Sensitization:	Central nervous system depression, difficulty breathing
Mutagenicity:	Not Established
Carcinogenicity:	None
Reproductive:	Not Established
Inhalation:	Irritation, nausea, vomiting, headache, drowsiness, symptoms of drunkenness, tingling sensation, suffocation, convulsions, coma, can displace oxygen at high concentrations
Name: Propane	CAS: 74-98-6
LC50 Inhalation Gas. Rat > 800000 ppm 15 minutes	
Dermal LD50: Not Available	
Skin Corrosion/Irritation:	Liquid: Blisters, frostbite
Serious Eye Damage/Eye Irritation:	Liquid: frostbite, blurred vision
Respiratory or Skin Sensitization:	Central nervous system depression, difficulty breathing
Mutagenicity:	Not Available
Carcinogenicity:	Not Available
Reproductive:	Not Available
Inhalation:	Nausea, vomiting, irregular heartbeat, headache, symptoms of drunkenness, disorientation, suffocation, convulsions, coma
Name: Isobutane	CAS: 75-28-5
LC50, 1 hr, rat = 285,000 ppmv	
Dermal LD50: Not Available	
Skin Corrosion/Irritation:	Liquid: Blisters, frostbite
Serious Eye Damage/Eye Irritation:	Liquid: frostbite, blurred vision
Respiratory or Skin Sensitization:	Respiratory tract irritation, central nervous system depression, difficulty breathing
Mutagenicity:	Not Available
Carcinogenicity:	Not Available
Reproductive:	Not Available
Inhalation:	Irritation, nausea, vomiting, headache, symptoms of drunkenness, suffocation, convulsions, coma

12. Ecological Information

Name	CAS	Toxicity
Butane	106-97-8	Fish toxicity: Not available Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Expected to exist entirely in the vapor phase in ambient air.
Propane	74-98-6	Fish toxicity: Not available Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available
Isobutane	75-28-5	Fish toxicity: Not available Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available

13. Disposal Considerations

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

14. Transportation Information

Proper Shipping Name:	Hydrocarbon gas mixture, compressed, n.o.s.
Hazard Class	2.1
Identification Number:	UN1964
Packing Group:	II
Label	FLAMMABLE GAS
Ship:	UN1964 HYDROCARBON GAS MIXTURE, COMPRESSED, N.O.S. CLASS 2.1 PG II

15. Regulatory Information

Name	CAS
SARA 355.30/355.40	Not regulated.
SARA 370.21	Not regulated.
CERCLA	Not regulated.
SARA 372.65	Not regulated.
PROP 65	Not regulated.
OSHA Process Safety	Not regulated.
Canadian WHMIS Class	A, B1

16. Other Information, Including Date of Preparation or Last Revision

SDS Date: 3/1/2019

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