MATERIAL SAFETY DATA SHEET

Primus LPG Canister

1. PRODUCT AND COMPANY IDENTIFICATION

Chemical characterization Mixture of butane, isobutane, and propane odorized with ethyl mercaptan.

Supplier

Primus AB
Box 6041
S-171 06 SOLNA, Sweden
Tel: 011 46 8 564 842 30
www.primus.se

Emergency telephone number 011 46 8 564 842 30

Product use Fuel

Canadian PIN 2037

2. COMPOSITION/INFORMATION ON INGREDIENTS

	Name	CAS Number
Hazardous components	Liquefied petroleum gas	68512-91-4
Other components	**Name**	**CAS Number**
	None	

See Section 15 of this MSDS for OSHA Regulatory Status

3. HAZARDS IDENTIFICATION

Emergency overview

DANGER – EXTREMELY FLAMMABLE. CONTENTS UNDER PRESSURE.

Colorless, extremely flammable gas, with a characteristic odor similar to boiled cabbage. Gas is heavier than air and can travel long distances to an ignition source and flash back. Container may explode when heated. DO NOT EXTINGUISH A LEAKING FIRE UNLESS LEAK CAN BE STOPPED. For a small fire, use dry chemical or CO_2. For a large fire, use water spray or fog.

Gas reduces oxygen available for breathing. High concentrations of gas can cause central nervous system depression. Contact with liquid can cause frostbite.

Primary route(s) of entry	Inhalation.
Symptoms of exposure	
Inhalation	Breathing high concentrations can cause central nervous system depression; effects include headache, dizziness, incoordination, nausea, and confusion. Gas can displace air, especially in confined spaces, and life-threatening asphyxiation (suffocation) can occur.
Eye contact	Gas is not expected to be an irritant. Contact with the liquid, however, can cause frostbite, with possible eye damage or blindness.
Skin contact	Gas is not expected to be an irritant. Contact with the liquid, however, can cause frostbite.
Ingestion	Not an applicable route of exposure for gases..
Medical conditions aggravated by exposure	None known.
Listed as carcinogen or potential carcinogen	Not listed by OSHA, the International Agency for Research on Cancer (IARC), or the National Toxicology Program (NTP)

4. FIRST AID

Inhalation	Immediately remove victim to fresh air. If not breathing, clear airway and start mouth-to-mouth artificial respiration or use a bag-mask respirator. Get immediate medical attention. If victim is having trouble breathing, transport to medical care and, if available, give supplemental oxygen.
Eye contact	For contact with gas: Hold eye open and flush slowly and gently with plenty of water for several minutes. For contact with liquid: Open eyes wide and allow liquid to evaporate. Hold eye open and flush slowly and gently with plenty of lukewarm water for several minutes. Do not attempt to rewarm the eye. Get immediate medical attention.
Skin contact	For contact with gas: None required. For contact with liquid: Briefly rinse with lukewarm water to remove the liquid. Do not attempt to rewarm the skin. Remove any contaminated clothing surrounding the area, carefully cutting around any area where it is stuck to the skin. Get immediate medical attention.
Ingestion	None required.
Note to physician	Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash Point and Method	N/A

Autoignition temperature	400° C (752° F)
Flammability limits	1.8 % (lower) 10.2% (upper)
General hazard	Extremely flammable gas. Gas is heavier than air, and can travel long distances to an ignition source and flashback. Containers can explode in a fire.
Extinguishing media	For small fires, use CO_2. For a large fire, use water spray or fog.
Extinguishing media to avoid	Concentrated streams of water; foam.
Special firefighting instructions	Do not extinguish a leaking fire unless leak can be stopped. Move containers from area if it can be done without risk. Keep fire exposed containers cool with flooding quantities of water until well after fire is out. If a container that is connected to an appliance catches fire, do NOT throw or turn it upside down, as this will make the fire worse; liquid gas will escape and the container may explode. If possible, close the valve, protecting your hands and forearms with a wet cloth; take the container outside, without tying it down. Keep people away. **Never tip a container that is on fire.**
Firefighting equipment	As in any fire, wear NIOSH approved, positive-pressure, self-contained breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Eliminate all ignition sources, such as flares, sparks, flames. Gas is heavier than air, and can travel long distances to an ignition source such as a pilot light, and flashback. If possible, block off any below-grade openings such as vent holes, drains, etc. Avoid operating electrical switches. Do not touch or walk through any spilled liquid. Stop leak if you do so without risk. If possible, turn containers right side up so that gas escapes, rather than liquid. Use water spray to reduce vapors or divert vapor cloud drift. Do not direct water at spill or source of leak. Isolate area until gas has dispersed. Call on specialized emergency assistance. If a leak in a container attached to an appliance cannot be stopped by closing the valve, take the unit outdoors, avoiding any impact. When no more gas is escaping, dispose of the container properly (see Section 13).
Environmental precautions	None known
Clean-up methods	Thoroughly ventilate the area. Allow liquid to evaporate and gas to dissipate.

7. HANDLING AND STORAGE

Handling

Follow instruction indicated on the container. Use only in a well ventilated area. DO NOT SMOKE. Use only with appliances recommended on the container label. Always use with containers in an upright position. In workshops, ground equipment to prevent the buildup of electrostatic charges.

Never look for a leak with a naked flame. Only soapy water should be used.

Do not puncture or incinerate container.

Storage

Store in a well ventilated area, well away from all sources of heat and ignition. Do not expose containers to temperatures over 120°F (50° C). Do not store below floor level, such as a basement or cellar, for example. Store away from low-level places where gas can accumulate.

Do not store in a vehicle, such as a car trunk or trailer. Heat from the sun can cause the temperature to rise to unsafe levels.

Keep out of reach of children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

Typically none are required when cartridges are used for their intended purpose. Odorization allows a 0.5% gas content in the air to be detected. If gas is smelled, search for the leak with soapy water **before** using the appliance. Always use in a well ventilated area to allow for the evacuation of fumes and combustion products.

Personal Protection

Respirator

None required when cartridges are used for their intended purpose.

Eye Protection

None required.

Gloves

None required.

Exposure controls

None for product. The following are for components of the gas mixture:

Butane: OSHA PEL: N/E
ACGIH TLV: 800 99m

Propane: OSHA PEL: 1,000 ppm
ACGIH TLV: 2,500 ppm

9. PHYSICAL AND CHEMICAL PROPERTIES

Form

Liquid in the container. Gas at atmospheric pressure.

Color

None

Odor

Characteristic, like boiled cabbage

Properties

pH: N/A
Viscosity (25° C):

Density (20° C): 0.5 kg/l (liquid)
Boiling point: 5° F (-15° C) at atmospheric pressure.
Vapor density: 2.025 at 15° C and atmospheric pressure (air = 1)
Vapor pressure (bar): approximately 2.8 max at 15° C
Approximately 8.3 max at 50° C

10. STABILITY AND REACTIVITY

Reactivity Stable in normal conditions of use. Explodes or catches fire when exposed to heat or a source of ignition.

Materials to avoid Oxidizing agents

Conditions to avoid Heat

Hazardous decomposition products Carbon dioxide, and carbon monoxide under condition of poor combustion.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity No information on product.

Chronic Toxicity No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity Since the liquid evaporates immediately and is only slightly soluble in water, product does not present any known hazards.

Persistence/degradability Gas accidentally released into the atmosphere is rapidly diluted and undergoes photochemical decomposition.

13. DISPOSAL CONSIDERATIONS

RCRA hazardous waste code D001

Special instructions Do not puncture or incinerate containers. Even empty containers have some residual gas. Do not cut, drill, grind, or weld on or near this container.

Only specially trained persons must empty containers of liquefied petroleum gas. Observe all federal, state and local laws and regulations.

14. TRANSPORT INFORMATION

DOT hazard class 2.1
Proper shipping name Gas cartridges
Identification number UN2037
Label(s) Flammable gas
Packing group N/A
Packaging Instructions 49 CFR 173.304, 173.306
ERG Guide Number 115

Marine pollutant	N/A
TDG class	2.1
Shipping name and description	Gas cartridges
UN Number	2037
Packing group	N/A
Limited quantity index	0.12 Litres water capacity of container

15. REGULATORY INFORMATION

OSHA regulatory status (29 CFR 1910.1200): Hazardous

Clean Air Act – Accidental Release Prevention

Chemical	Threshold Quantity (lbs)
Butane	10,000
Isobutane	10,000
Propane	10,000

SARA hazard categories (40 CFR 370): Fire, pressure

SARA toxic chemicals (40 CFR 372)

Name	CAS Number	Percentage
None		

Inventory Status: This chemical is listed on the US TSCA Chemical Substances Inventory and the Canadian Domestic Substances List.

Toxic Substance Control Act: No specific regulations apply.

Controlled Products Regulations: This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information.

WHMIS classification: A, B1

State regulations

CA Proposition 65	Warning. This product contains <0.1% of 1,3-butadiene, a chemical known to the State of California to cause cancer.
MA Right to Know List	Butane, isobutene, and propane.
MN Hazardous Substance List	Butane and propane.
NJ Right to Know List	Butane, isobutene, and propane.
PA Right to Know List	Butane, isobutane, and propane.
RI Hazardous Substance List	Butane, and propane.

16. OTHER INFORMATION

Additional cautions: Cartridges must only be used for the applications and with the appliances indicated on the containers.
Never refill an empty container.

Abbreviations

C - Ceiling limit
ERG – Emergency Response Guidebook
LC_{50} - The concentration of a substance in air that will kill 50% of test animals within a certain exposure period.
LD_{50} - The dose that causes death in 50% of test animals.
N/A - Not applicable
N/D - Not determined
N/E - Not established
N/K - Not known
PIN - Product Identification Number
RQ - Reportable Quantity
TPQ - Threshold Planning Quantity
WHMIS – Workplace Hazardous Materials Information System

Preparation information

Prepared by Helena Ullberg, PRIMUS AB, Solna, Sweden
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Replaces New

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication.