

	SAFETY DATA SHEET	Revised edition no : 2 Date : 12/05/2014
	Hydrocarbon Aerosol Propellant (HAP)	PG 001

SECTION 1. IDENTIFICATION OF THE PRODUCT AND COMPANY UNDERTAKING	
Product name : Synonyms: Product Use Description Company:	Hydrocarbon Aerosol Propellant (HAP) Butane, Cosmetic Butane, Propane, Liquefied Petroleum Gas, LPG, Normal Butane, N-Butane, B/CB31, B/CB36, B/CB40, B/CB45, B/CB46, B/CB48, B/CB56, B/CB62, B/CB74, B/CB5.6 Aerosol Propellants, Foaming (blowing) agent PUREGAS (Pty) Ltd PO Box 123884, Alrode, 1451, South Africa Tel : (011) 903 9760 Fax: (011) 903 9766 Cellphone: 082 889 6946 (1 st) 082 885 7475 (2 nd) Emergency Tel: 0800 172 743 (Rapid Spill Response)

SECTION 2. HAZARDS IDENTIFICATION	
Classifications	Flammable Gas – Category 1 Gases Under Pressure – Liquefied Gas
Pictograms	
Signal Word	Danger
Hazard Statements	H220 Extremely flammable gas. H280 Contains gas under pressure; may explode if heated.
Precautionary Statements	
Prevention	P210 Keep away from heat/sparks/open flame/hot surfaces. No smoking. Avoid breathing gas.
Response	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 + P410 Store in well ventilated place. Protect from sunlight.
Disposal	Dispose of contents/container in accordance with local/ regional/ national/ international regulations.
Supplemental Hazard Information	Exposure to concentrations above 100% of the LEL such as 5% or 50,000 ppm may sensitize heart and cause irregular heartbeat. High concentrations may exclude oxygen and cause dizziness and suffocation. Contact with liquid or cold vapour may cause frostbite or freeze burn. Aliphatic hydrocarbon gases may build up in confined spaces and may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in narcosis, unconsciousness, and possibly lead to death.

	SAFETY DATA SHEET	Revised edition no : 2 Date : 12/05/2014
	Hydrocarbon Aerosol Propellant (HAP)	PG 001

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.
n-Butane	106-97-8
Isobutane	75-28-5
Propane	74-98-6


B/CB31, B/CB36, B/CB40, B/CB46, B/CB48, B/CB56, B/CB62, B/CB74, B/CB5.6
This product is a blend of n-butane (C₄H₁₀), isobutane (C₄H₁₀) and propane (C₃H₈).

SECTION 4. FIRST AID MEASURES

Inhalation	Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Give oxygen. Seek medical attention.
Skin contact	For exposure to liquid, immediately warm frostbite area with warm water not to exceed 41°C. In case of massive exposure, remove contaminated clothing while showering with warm water. Obtain medical attention.
Eye contact	Immediately flush eyes thoroughly with warm water for at least 15 minutes. Remove contact lenses. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Seek medical attention immediately.
Ingestion	Ingestion is considered unlikely. If accidentally swallowed obtain immediate medical attention.
Notes to physician	Symptoms: Dizziness, Headache, Nausea, Frostbite, Vomiting, Discomfort Hazards: This material may be a cardiac sensitizer; avoid the use of epinephrine. Treatment: Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5. FIRE-FIGHTING MEASURES


Suitable extinguishing media	Water spray, Dry chemical, Foam, Carbon dioxide (CO ₂), Fire should not be extinguished unless flow of gas can be immediately stopped.
Specific hazards during fire fighting	Flammable Gas. Vapours are heavier than air and may travel long distances to a point of ignition and flash back. Exposure to fire may cause containers to rupture.
Special protective equipment for fire-fighters	Fire fighters should wear self-contained breathing apparatus and full protective clothing as need for protection from heat and airborne combustion products. Use water to cool equipment, surfaces and containers exposed to fire and excessive heat. For large fire the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure.
Further information	Allow the fire to burn under controlled conditions. Fire should not be extinguished unless flow of gas can be immediately stopped. Stop leak if you can

	SAFETY DATA SHEET	Revised edition no : 2 Date : 12/05/2014
	Hydrocarbon Aerosol Propellant (HAP)	PG 001

	do it without risk. Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapours and to protect personnel attempting to stop a leak. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Use water to cool equipment, surfaces and containers exposed to fire and excessive heat. For large fire the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure.
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SECTION 6. ACCIDENTAL RELEASE MEASURES	
Personal precautions	Ventilate the area. Warn or evacuate occupants in surrounding and downwind areas if required due flammability of the material. Emergency eye wash capability should be available in the vicinity of any potential splash exposure. Promptly remove contaminated clothing and wash before reuse.
Environmental precautions	Prevent entry into waterways, sewers, basements or confined areas.
Methods for cleaning up	The product evaporates readily. Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning. Allow liquid to evaporate from the surface. All equipment used when handling the product must be grounded. Do not direct water at spill or source of leak. Do not touch or walk through spilled material. If possible, turn leaking containers so that gas escapes rather than liquid. Isolate area until gas has dispersed. Prevent spreading of vapours through sewers, ventilation systems and confined areas. Use water spray to reduce vapours or divert vapour cloud drift. Avoid allowing water runoff to contact spilled material. Water Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Allow liquid to evaporate from the surface.


SECTION 7. HANDLING AND STORAGE	
Precautions for safe handling	Keep away from fire, sparks and heated surfaces. No smoking near areas where material is stored or handled. Use only with adequate ventilation. The product should only be stored and handled in areas with suitably safe electrical classification. Hydrocarbon liquids including this product can act as a non-conductive flammable liquid (or static accumulators), and may form ignitable vapour-air mixtures in storage tanks or other containers. Precautions to prevent static-initiated fire or explosion during transfer, storage or handling should be taken, include but are not limited to ground and bond containers during product transfers. Grounding and bonding may not be adequate protection to prevent ignition or explosion of hydrocarbon liquids and vapours that are static accumulators.
Conditions for safe storage, including incompatibilities	Keep away from flame, sparks, excessive temperatures and open flame. Use approved containers suitable for this product, temperature and pressure. Keep containers closed and clearly labelled. Empty or partially full product containers or vessels may contain explosive vapours. Do not pressurize, cut, heat, weld or

	SAFETY DATA SHEET	Revised edition no : 2 Date : 12/05/2014
	Hydrocarbon Aerosol Propellant (HAP)	PG 001


<p>expose containers to sources of ignition. Store in a well-ventilated area. The storage area should comply with local and national legislation and standards. Contact your gas supplier if in doubt. Incompatible with oxidizing agents.</p>
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SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines				
List	Components	CAS-No	Type	Value
OSHA Z1	Propane	74-98-6	PEL	1,000 ppm 1,800 mg/m3
ACGIH	Butane	106-97-8	TWA	1,000 ppm
	Isobutane	75-28-5	TWA	1,000 ppm
	Propane	74-98-6	TWA	1,000 ppm
Protective measures		Avoid contact with skin. When using do not smoke. Keep out of reach of children. Keep away from heat and flame. Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for material is based upon intended, normal usage.		
Engineering measures		Use only flameproof electrical equipment approved for use in classified areas. Adequate ventilation.		
Eye protection		Goggles and face shield as needed to prevent eye and face contact.		
Hand protection		Suitable gloves made of plastic or rubber. If contact with forearms is likely, wear gauntlet style gloves.		
Skin and body protection		Where contact with liquid may occur, wear apron and face Shield. Flame resistant clothing is recommended in areas where material is stored or handled.		
Respiratory protection		Use positive pressure supplied air respirator or self-contained breathing apparatus if there is a potential for uncontrolled release, exposure levels are not known, in oxygen deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.		
Work / Hygiene practices		Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove contaminated clothing and wash before reuse.		

	SAFETY DATA SHEET	Revised edition no : 2 Date : 12/05/2014
	Hydrocarbon Aerosol Propellant (HAP)	PG 001


SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES	
Appearance	Colourless gas. Cold vapour cloud may be white but the lack of visible gas cloud does not indicate absence of gas. A colourless liquid when pressurized.
Odour	Sweet odour. Poor warning properties in low concentrations.
Odour threshold	No data available
Melting point/freezing point	Butane -138°C; Propane -188°C
Initial boiling point & range	Butane -0.5°C; Propane -42.1°C at 101.3 kPa
Flash point	< -60 °C Method: ASTM D 92
Evaporation rate	High
Flammability (solid, gas)	Extremely Flammable
Lower flammability limit	1.8 % Vol
Upper flammability limit	9.5 % Vol
Vapour pressure	Butane 2.1 bar; Propane 8.1 bar at 25°C
Vapour density	Butane 2.1; Propane 1.5 (Air = 1.0)
Relative density	Butane 0.575; Propane 0.51 at 20°C
Solubility (H2O)	Butane 88mg/ℓ; Propane 75mg/ℓ
Partition coefficient (Octanol/H2O)	Butane 2.89 _{log pow} ; Propane 2.36 _{log pow}
Auto Ignition temperature	Butane 365°C; Propane 470°C
Decomposition temperature	Heating may cause a fire or explosion. Material does not decompose at ambient temperatures. Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke) are possible hazardous decomposition products.
Viscosity	No data available
Conductivity	Hydrocarbon liquids without static dissipater additive may have conductivity below 1 picoSiemens per meter (pS/m). The highest electro-static ignition risks are associated with "ultra-low conductivities" below 5pS/m.
	This safety datasheet only contains information related to safety and does not replace any product information or product specification.

	SAFETY DATA SHEET	Revised edition no : 2 Date : 12/05/2014
	Hydrocarbon Aerosol Propellant (HAP)	PG 001

SECTION 10. STABILITY AND REACTIVITY	
Reactivity	Vapours may form explosive mixture with air.
Chemical Stability	Stable under normal conditions.
Hazardous reactions	Can react with strong acids and strong oxidizers.
Conditions to avoid	Keep away from flame, sparks, excessive temperatures and open flame.
Incompatible materials	Can react with strong acids and strong oxidizers

SECTION 11. TOXICOLOGICAL INFORMATION	
Inhalation	May cause central nervous system disorder (e.g. narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage. Simple asphyxiate: Acts by displacing oxygen in the lungs thereby diminishing the supply of oxygen available to the blood and tissues. Symptoms include shortness of breath, rapid heart rate, incoordination, lethargy, headaches, nausea, vomiting, and disorientation. Continued lack of oxygen may result in convulsions, loss of consciousness and death. Since exercise increases the tissue need for oxygen, symptoms will occur more quickly during exertion in an oxygen deficient environment. Oxygen in enclosed spaces should be maintained at 21% by volume. Exposure to high concentrations may cause cardiac sensitisation.
Ingestion	Considered unlikely.
Skin and eye contact	Not classified as an irritant. Rapid release of gases which are liquids under pressure may cause frost burns of exposed tissues (skin, eye) due evaporative cooling.
Chronic Toxicity	No chronic effects
Mutagenicity	No evidence of mutagenic potential
Carcinogenicity	No evidence of carcinogenic effects
Toxicity to Reproduction	No evidence of toxicity to reproduction

SECTION 12. ECOLOGICAL INFORMATION	
Bioaccumulation	Accumulation in aquatic organisms is unlikely.
Toxicity to fish	Not expected to be harmful to aquatic organisms
Additional ecological information	Liquid release is only expected to cause localized, non-persistent environmental damage, such as freezing. Biodegradation of this product may occur in soil and water. Volatilization is expected to be the most important removal process in soil and water. This product is expected to exist entirely in the vapour phase in ambient air.

	SAFETY DATA SHEET	Revised edition no : 2 Date : 12/05/2014
	Hydrocarbon Aerosol Propellant (HAP)	PG 001

SECTION 13. DISPOSAL CONSIDERATIONS


Disposal	Dispose of container and unused contents in accordance with local requirements; contact gas supplier for guidance. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared by a suitably qualified person to accepted procedure.
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SECTION 14. TRANSPORT INFORMATION

		Butane	Propane	Mixture
IATA Cargo Transport	UN-No.	UN 1011	UN 1978	UN 1075
	Description of the goods	Butane	Propane	LPG
	Class	2.1	2.1	2.1
	ICAO-Labels	2.1	2.1	2.1
	Packing instruction (cargo aircraft)	200	200	200
IATA Passenger Transport	UN-No.	UN 1011	UN 1978	UN 1075
	Class	2.1	2.1	2.1
	Not permitted for transport			
IMDG-Code	UN-No.	UN 1011	UN 1978	UN 1075
	Description of the goods :	Butane	Propane	LPG
	Class	2.1	2.1	2.1
	IMDG-Labels	2.1	2.1	2.1
	EmS Number	F-D S-U	F-D S-U	F-D S-U
	Marine pollutant	No	No	No

SECTION 15. REGULATORY INFORMATION

EEC Hazard Classification	F+ Extremely Flammable
Risk Phrases	R12 – Extremely Flammable R18 – In use may form flammable explosive vapour –air mixture. R44 – Risk of explosion if heated under confinement.
Safety Phrases	S2 Keep out of reach of children S3 Keep in cool place S9 Keep container in well ventilated place S15 Keep away from heat S29 Do not empty into drains S16 Keep away from sources of ignition S33 Keep away from static discharge S41 in case of fire and/or explosion do not breath fumes Refer to SANS 10265 for explanation of the above.
Legislation	Ensure national/local regulations are observed

	SAFETY DATA SHEET	Revised edition no : 2 Date : 12/05/2014
	Hydrocarbon Aerosol Propellant (HAP)	PG 001

SECTION 16. OTHER INFORMATION

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.