Amalgamated Hardware Merchants Ltd (ABN 31 162 636 133)
Trading as AHM Australia
Unit 4 - Compton Plaza, 126 - 130 Compton Road
Woodridge QLD 4114
Ph.07 3208 1233 Fx.07 3208 1933
Web: www.ahmaustralia.com.au E-mail: enquiries@ahmaustralia.com.au

1. IDENTIFICATION

Product Name:	Campmaster 220g (525ml) Butane refill disposable gas cartridge.
Pack Size:	220g
Manufacturers' Code:	RR220
Use:	Combustible gas for use as a refill cartridge for connection to appliances certified for use with butane gas.
Supplier:	AHM Australia
ACN:	31 162 636 133
Street Address:	Unit 4 – Compton Plaza, 126 – 130 Compton Road Woodridge, QLD, 4114.
Telephone:	(07) 3208 1233
Emergency:	0424 336 053
Dangerous Goods Class:	2.1
HAZCHEM Code:	2WE
UN Number	**Butane** UN2037

2. HAZARDS IDENTIFICATION

Classified as highly flammable.

DANGEROUS GOODS. NON-HAZARDOUS SUBSTANCE.
Dangerous goods classification according to the Australian Dangerous Goods Code.
Hazard classification according to the criteria of NOHSC.
Does not contain 1, 3 Butadiene and is not classified as hazardous.

Classified as Dangerous Goods Class 2.1, by the criteria of the Australian Dangerous Goods Code for transport by road or rail.

Hazard Category: Hazardous

F : Extremely Flammable
R-Phrase(s): R12 Extremely Flammable

S-Phrases:
S2 Keep out of reach of children
S16 Keep away from sources of ignition – no smoking
S24/25 Avoid contact with skin and eyes
S26 In case of contact with eyes, rinse immediately with plenty of water and contact a doctor or Poisons Information Centre. Phone 13 11 26.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Odorised, combustible, liquid gas mixture, pressurised.

Property	**IsoButane**	**n-Butane**	**Propane**	**Other**
Chemical Formula	C_4H_{10}	C_4H_{10}	C_3H_8	
Molecular Weight	58.1	58.1	44.1	
CAS Number	75-28-5	106-97-8	74-98-6	
Relative Density				
Water = 1.0	0.568	0.6	0.5	
Air = 1.0	2.00	2.1	1.6	
Limits of flammability in air (% by volume)				
Upper %	8.5	8.4	9.5	
Lower %	1.9	1.8	2.1	
Flash Point	-60^0C	-60^0C	-104^0C	
Ignition temp.	482^0C	365^0C	450^0C	
Mixture (by volume)	30 - 35%	65 – 70%	1 – 2%	Below 2%

The LP Gas contained in the cartridge is incompatible with strong oxidising agents, peroxides, chlorine and concentrated nitric acid. Hazardous polymerization will not occur.

All constituents of this material are listed on the Australian Inventory of Chemical Substances.

May contain Ethyl Mercaptan as an odourant at a dose rate of <25 ppm.

4. FIRST AID MEASURES

Skin: Contact by liquid can cause burns similar to frostbite and irritation. Place the person in a warm area as soon as possible. Quickly submerge the burn area in cool or warm water 33 - 35^{0}C maximum (NOT HOT) for five minutes. Maintain the injured part at room temperature, cover with sterile dressing and then cover in a blanket. Loosen any articles of clothing that may restrict blood circulation.

Eyes: Irrigate eyes with copious amounts of water for 15 minutes. In all cases of eye contamination, it is recommended to seek medical advice.

Inhalation: Asphyxiant in high concentrations. At lower concentrations lack of oxygen will cause dizziness, nausea, increased depth and frequency of breathing and ultimately unconsciousness. Remove patient to fresh air, lay down and rest.

Ingestion: Not applicable.

Advice to Doctor: Treat symptomatically to relieve any effects.

5. FIRE FIGHTING MEASURES

Specific hazards:
This type of cartridge may rupture or explode when exposed to temperatures above 50^0C. The contents are extremely flammable and heavier than air. Do not allow vapours to build up in pits or hollows.

Further advice for firefighting. Fight the fire from a protected position or use unmanned hose holders or monitor nozzles. If safe to do so, move undamaged cartridges from the fire area. Do not approach hot cartridges. Cool cartridges with water before handling. If impossible to extinguish fire, protect surroundings, withdraw from the area and allow fire to burn.

Fire fighters are to wear self-contained breathing apparatus (SCBA) and protective gloves. Structural fire fighters' uniform provides some limited protection.

Suitable extinguishing media: for small fires use water spray, dry chemical or carbon dioxide. For large fires use water spray or fog. Do not use full jet water.

Hazards from combustion products.
Carbon Dioxide, Water Vapour, traces of Carbon Monoxide and Nitrogen Oxides. Fumes, smoke, Carbon Monoxide and Aldehydes can be formed during incomplete combustion.

HAZCHEM Code: 2WE

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

- As this product has a very low flash point any spillage or leak is a severe fire and/or explosion hazard. If a leak has not ignited, stop gas flow, isolate sources of ignition and evacuate personnel.

- Ensure good ventilation

- Liquid leaks generate large volumes of flammable vapour, heavier than air, which may travel to remote sources of ignition (e.g. along drainage systems). Where appropriate, use water spray o disperse the gas or vapour and to protect personnel attempting to stop leakage.

- Vapour may collect in confined spaces.

Methods and Materials for Containment and Clean Up Procedures

- If spillage has occurred in a confined space, ensure adequate ventilation and check that a safe, breathable atmosphere is present before entry.

- Do not enter a vapour cloud except for rescue, self-contained breathing apparatus (SCBA) must be worn.

- Wear protective clothing. Refer to "Exposure Controls/Personnel Protection", Section 8, of this Safety Data Sheet.

- In the event of a leak, contact the appropriate authority. Small quantities of spilled liquid may be allowed to evaporate.

- Vapour should be dispersed by effective ventilation.

7. HANDLING AND STORAGE

Handling :

Cartridges are to be handled and opened with care. Use anti-spark tools.

Ensure adequate ventilation of work premises or, in any case, of the place where the product is being used.

Smoking in this area is to be prohibited.

Do not spray gas on a naked flame or any incandescent material.

Protect Cartridges from direct sunlight and keep away from any heat sources.

Regularly check for gas leaks (use water and soap) and keep away from ignition sources (flames, sparks,
Ionizing radiations, micro-waves, static electricity.

Avoid the contact of compressed and liquefied gas (sprays) with the skin and eyes.

Do not breathe gas nor gases resulting from combustion. Refer to point 8.

Carefully read and understand the technical instructions for a safe use of the product. Refer to point 16.

Storage:

Store cartridges in original, well-sealed containers, at dry and cool premises and at a Temperature lower than 50°C.

Avoid any risk of physical damage to container (corrosion, mechanical action).

Store cartridges in well ventilated premises, separate from premises where oxidizing or Burning products are stored (oxygen, nitrous oxide).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits

Butane
NOHSC:1003 TWA 800 ppm
NOHSC:1003 TWA 1900 mg/m3
NOHSC:1003 Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] - 3rd Edition

Exposure Controls
The level of personal protection and the types of controls necessary will vary depending on exposure
Conditions. Select controls based on a risk assessment of local circumstances. Use sealed systems as far as possible. Use local, intrinsically safe, exhaust ventilation if there is a risk of inhalation of vapours,
Mists, or aerosols. Provide eye washes and showers for emergency use.

Hygiene Measures
Wash hands before eating, drinking, smoking and using the toilet.

Respiratory Protection
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protective equipment suitable for the specific conditions of use and meeting relevant legislation. Where air-filtering respirators are unsuitable (e.g. where airborne concentrations are high, there is a confined space or a risk of oxygen deficiency) use appropriate positive pressure breathing apparatus. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter, select a filter suitable for organic gases and vapours (boiling point >65 degC).

Hand Protection
Neoprene or nitrile rubber gloves. Gloves must maintain flexibility down to the atmospheric boiling point of this product.

Eye Protection
Monogoggles or full face shield if splashes are likely to occur.

Body Protection
Safety shoes or boots - chemical resistant. Overalls made of cotton or other natural fibres.

Environmental Exposure Controls
Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Pressurized, liquid gas at 15.6 °C and 1 bar.
Odor:	Characteristic of odorized combustible gases, not disturbing
Colour:	Colourless
pH at 20°C :	Not applicable.
Boiling point:	- 0,5 °C.
Freezing point:	Lower than 0°C.
Flash point:	- 60 °C.

Autoflammability : 405 °C.

Explosion limits: Mixtures of flammable gas / air may explode if gas concentration lies between the lower range (LIE) and higher range (LSE) of explosion limits:
Butane: LIE = 1.8% and LSE = 8.4%
isobutane : LIE = 1.8% and LSE = 9.8%
propane : LIE = 2.2% e LSE = 10%.

Burning properties: None.

Vapor pressure: NA.

Relative density: 0.584 kg/m_3 for the liquid product.

Solubility:
Solubility in water: Insoluble.

Solubility in fat: Poorly soluble.

Partition coefficient (noctanol/water):
Log Kow in the range from 2.36 to 3.0 (assessed depending on components)

Viscosity: not applicable.

Gas density: Higher than air. Gas has a tendency to deposit at ground level.

Evaporation rate: Liquid evaporates quickly in the atmosphere causing sudden cooling of surfaces with which it comes in contact.

10. STABILITY AND REACTIVITY

Chemical stability:
Product is stable under ambient conditions. Not to be stored at temperatures above 50°C.

Hazardous conditions:
Strong heating of containers; quick depressurization of containers. No problems if the product is properly stored and properly used. Refer to points 7 and 16.

Products to avoid:
Strong oxidizing agents (hypochlorites, nitrates, perchlorates, permanganates, bichromates).

Hazardous reactions:
The product exhibits a violent reaction with burning products (peroxides, chlorine dioxide, nitrogen dioxide).

Hazardous decomposition products:
Toxic gases (carbon monoxide) and highly flammable gases (hydrogen, ethylene), irritant carbonaceous fumes.

11. TOXICOLOGICAL INFORMATION

Routes of exposure:
Inhalation, contact with the skin and eyes. Accidental ingestion of the product is unlikely.

Ingestion:
The product in its liquid state causes the immediate freezing of the part with which it comes in contact and may seriously affect the mucous membranes and tissue of mouth, esophagus and stomach. In the event of ingestion, carry injured person to First Aid immediately. The gaseous product practically has no harmful effect.

Inhalation:
Inhalation of mists containing the product may cause irritation to mucous membranes and apnea. Gas absorption causes narcosis (depression of central nervous system) and may cause dizziness or suffocation without any forewarning symptoms. Exposure to higher levels (1% - 10% in air) may result in pulmonary and heart involvement (arrhythmia, heart attack). Gas concentration that is instantly hazardous to health (IDLH) is

2000 ppm for LPG. It is recommended that you avoid exposure to gas concentrations higher than the recommended limit value of 800 ppm. Refer to point 8.

Eye and skin contact:
Exposure to gaseous product is not as hazardous as exposure to the liquid product because, in the latter case, there is a risk of possible freezing and consequent injury to skin and eye tissue.

Other data:
As regards chronic toxicity, no carcinogenic and mutagen effects have been found, neither for reproduction (teratogenesis, embryotoxicity) nor for the possibility of respiratory and skin sensitization. No drawbacks are reported to have occurred after proper use of the product. Refer to the specific technical instruction.

12. ECOLOGICAL INFORMATION

Eco toxicity:
The product does not contain any substance classified as hazardous for the environment; it is however good practice to use it according to good operational codes and avoiding product dispersion in the environment.

Typical product data:

Soil:
The product will be absorbed in the upper soil layers and biodegraded; however, because of the product gaseous state at ambient temperature and pressure, product volatilization to air is expected to be the dominant process.

Water:
The product can be biodegraded; however, bio concentration factors (Log BCF in the range from 1.56 to 1.78 calculated for propane) suggest that bio concentration is not the most important factor; hence, due to the poor solubility of gas in water, in this case too, releasing to air is expected to be the dominant process.
Air: because of the gaseous state of the product under normal weather conditions and because of the chemical inertia of its components, the most important degradation process capable of generating hazardous substances for health (ozone and organic nitrates) seems to be the photochemical reaction with oxygen and nitric oxide.

Mobility:
The product spreads in the soil layers, water and air.

Persistence and degradability:
The product does not seem to adversely affect the activated sludge of biologic depuration plants. The organic substances contained in the product are biodegradable.

Bioaccumulation potential:
None expected, in consideration of the low values of bioaccumulation potential (Log BCF).

Other adverse effects:

Releasing to air of hydrocarbons and organic solvents contributes to the photochemical creation of ozone, a harmful gas for atmosphere.

13. DISPOSAL CONSIDERATIONS

Classification:
Contribution of this product to waste which contains the product is very significant and dangerous because of product flammability and possibility of explosive atmosphere formation.

Product disposal:
The product and contaminated packaging should be handed over to qualified and authorized waste contractors for disposal as hazardous waste.
Do not compact product to be disposed of nor damage product containers.
For product to be disposed of, observe same safety regulations as for new product and in a special way, be careful not to pierce nor burn containers

14. TRANSPORT INFORMATION

Classified as Dangerous Goods by the criteria of the Australian Dangerous Gods Code for transport by Road and Rail.

UN Number: 2037

UN Proper Shipping Name: RECEPTACLES, SMALL, CONTAINING GAS (gas cartridges)

Class and Subsidiary Risk: 2.1

Packing Group: None allocated

Hazchem Code: 2WE

Do not allow cartons to become wet. Do not store above 50°C

15. REGULATORY INFORMATION

Based on available information, not classified as hazardous according to the criteria of NOHSC Australia.

Classified as Dangerous Goods Class 2.1, by the criteria of the Australian Dangerous Goods Code for transport by road and rail.

Hazard Category: Hazardous

F: Extremely Flammable
R-Phrase(s): R12 Extremely Flammable

S-Phrases:
S2 Keep out of reach of children
S16 Keep away from sources of ignition – no smoking
S24/25 Avoid contact with skin and eyes
S26 In case of contact with eyes, rinse immediately with plenty of water and contact a doctor or Poisons Information Centre. Phone 13 11 26.

16. OTHER INFORMATION

This MSDS summarises at the date of issue our best knowledge of the health and safety hazard information of this product. Although this information is presented in good faith and compiled from various sources, and believed to be accurate, Amalgamated Hardware Merchants Ltd. make no representations or warranty as to the completeness or accuracy thereof. If clarification is needed to ensure that an appropriate assessment can be made, the user should contact this company.

Staff charged with handling and use of this product must be adequately trained and informed on the specific risks and safety measures associated with the use of this product.

References:

NOHSC – Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008 (2004)] 3rd

NOHSC – National Code of Practice for the preparation of Material Safety Data Sheets [NOSC: 2011 (2003)] 2nd Edition.

Raw Material MSDS