SAFETY DATA SHEET

01 - IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

PRODUCT NAME	HARP® Hydrocarbon Aerosol Propellant (AP)
SUPPLIER	**Harp International Limited** Gellihirion Industrial Estate Pontypridd Rhondda Cynon Taff CF37 5SX United Kingdom
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02 - HAZARDS IDENTIFICATION

MAIN HAZARDS	Liquefied gas. Extremely flammable
HEALTH EFFECTS – EYES	Liquid or cold vapour may cause frost bite or corneal damage.
HEALTH EFFECTS – SKIN	Liquid or cold vapour may cause frost bite.
HEALTH EFFECTS – INGESTION	Not applicable.
HEALTH EFFECTS – INHALATION	Exposure to vapour at high concentrations may have the following effects:- drowsiness. Higher concentrations will have the following effects:- anaesthesia. Acts as a simple asphyxiant, if the oxygen concentration in the air is diluted to below 18% breathing difficulties will result, with loss of consciousness in extreme cases. Odour does not provide reliable warning of exposure.

03 - COMPOSITION/INFORMATION ON INGREDIENTS

PRODUCT TRIVIAL NAME	HARP® AP
PRODUCT FORMAL NAME	HYDROCARBON AEROSOL PROPELLANT
PRODUCT CHEMICAL FAMILY	Aliphatic hydrocarbon.
COMPOSITION	AP22, AP30, AP40, AP46, AP48, AP70, AP75 & AP110 - blends of propane (C_3H_8) and/or isobutane (C_4H_{10}) and/or n-butane (C_4H_{10}).

04 - FIRST AID MEASURES

INHALATION	Remove victim to well ventilated area. Keep victim warm and rested. If there is difficulty in breathing, give oxygen but only under strict medical supervision. If breathing stops or shows signs of failing, apply artificial respiration. Apply artificial respiration if breathing has stopped. Obtain medical attention.
SKIN CONTACT	Liquid: Flush skin immediately with large amounts of lukewarm water. Do not apply heat to affected area. Do not allow the victim to smoke or drink alcohol. Obtain medical attention if blistering occurs or redness persists. Do not attempt to remove clothing stuck to the skin. Gas: Not applicable. No effects expected.

EYE CONTACT	Liquid: immediately flood the eye with plenty of water, preferably warm, for at least twenty minutes, holding the eye open. Cover with a sterile dressing. Obtain medical attention urgently. Gas: Not applicable. No effects expected.
INGESTION	Not applicable

05 - FIRE-FIGHTING MEASURES

SPECIAL HAZARDS	Be aware of possibility of re-ignition. Gas is heavier than air. May form explosive mixtures with air. Exposure to heat or fires may cause cylinders to rupture or explode. Be aware of a Boiling Liquid Expanding Vapour Explosion (BLEVE).
EXTINGUISHING MEDIA	Do not extinguish a leaking gas flame unless absolutely necessary. Isolate source of gas if possible. Otherwise, allow fires to burn out under controlled conditions. If fire has to be extinguished, use water spray, alcohol foam, dry chemical or carbon dioxide. Keep containers and surroundings cool with water spray. Disperse accumulating vapour with water spray.
UNSUITABLE EXTINGUISHING MEDIA	Do not use water jet.
PROTECTIVE EQUIPMENT FOR FIREFIGHTERS	Fire fighters should wear self-contained breathing apparatus, chemical goggles, loose fitting rubber or leather gloves and full aluminised safety suit including hood.

06 - ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTION	Wear appropriate protective clothing. Wear respiratory protection. Consider need for evacuation. Eliminate all sources of ignition. Beware of gas accumulating to form explosive concentrations. Gas is heavier than air and will collect in basements, depressions, etc. Leaks inside confined spaces may cause suffocation.
ENVIRONMENTAL PRECAUTIONS	Try to prevent the material entering drains or water courses. Advise Authorities if spillage has entered water course or sewer or has contaminated soil or vegetation.
SPILLAGES	Allow to evaporate if it is safe to do so.

07 - HANDLING AND STORAGE

HANDLING	Use only in well ventilated areas. Avoid inhaling vapour. Avoid contact with eyes, skin and clothing. Those working with this material should be properly trained about its hazards and safe use.
STORAGE	Store in a dry well ventilated place away from sources of heat or ignition and direct sunlight. Storage and transfer equipment should be adequately earthed and bonded to prevent the accumulation of static charges. Pipes which can entrap liquid or vapour require pressure release facilities. Storage tanks should be equipped with water sprays for cooling and have facilities for measuring temperature contents. Suitable storage materials are:- mild steel, stainless steel.

08 - EXPOSURE CONTROLS/PERSONAL PROTECTION

UK OCCUPATION AL EXPOSURE STANDARDS	None assigned. An exposure limit of 600ppm (1430 mg/m^3) 8h TWA is recommended. An exposure limit of 750ppm (1780 mg/m^3) 10 min TWA is recommended. The minimal atmospheric oxygen concentration should be less than 18% by volume under normal atmospheric conditions.
ENGINEERING CONTROL MEASURES	Exposure to this material may be controlled in a number of ways. The measures appropriate for a particular work site depend on how the material is used and on the potential for exposure. Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (dilution and local exhaust), and control of process conditions. Wherever practicable, the product should be handled within a closed system. If engineering controls and work practices are not effective in preventing or controlling exposure, then suitable personal protective equipment, which is known to perform satisfactorily, should be used.

09 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquefied gas under pressure.
COLOUR	Colourless.
ODOUR	Faint.
BOILING RANGE/POINT	-2.0°C to -45.0°C
MELTING POINT	Melts between -138.0°C to -190.0°C
FLASH POINT (PMCC)	-104.0°C
AUTOIGNITION TEMPERATURE	430.0°C
FLAMMABILITY LIMITS	1.8 to 9.4 vol. % in air
LIQUID DENSITY	(21.1°C): 500.0 kg/m^3 to 600.0 kg/m^3
SOLUBILITY	Slightly soluble.
VAPOUR PRESSURE	(21.1°C): 214 kPa to 853 kPa
PARTITION COEFFICIENT	2.36 $_{\text{Log pow}}$
RELATIVE VAPOUR DENSITY (AIR = 1)	2.1

10 - STABILITY AND REACTIVITY

STABILITY	Stable under normal conditions. No unusual reactivity.
CONDITIONS TO AVOID	High temperatures
MATERIALS TO AVOID	Oxidising agents.
HAZARDOUS DECOMPOSITION PRODUCTS	None known. Combustion will generate: oxides of carbon.

11 - TOXICOLOGICAL INFORMATION

ACUTE	Low order of acute toxicity.
SUB-ACUTE/SUBCHRONIC TOXICITY	There are no reports of adverse long term effects following repeated exposure.

12 - ECOLOGICAL INFORMATION

MOBILITY	The product is volatile/gaseous and will partition to the air phase. If released to air it will disperse rapidly.
PERSISTENCE/DEGRADABILITY	Photochemical degradation in air will proceed at a moderate rate. Considered by the United Nations as 'less important' in the formation of episodic ozone.
BIO-ACCUMULATION	Not applicable.
ECOTOXICITY	Not applicable.

13 - DISPOSAL CONSIDERATIONS

DISPOSAL OF PRODUCT	Allow to dissipate safely to the atmosphere or use as fuel. Dispose of in accordance with local and national regulations. If correctly incinerated this material will decompose to carbon dioxide and water only.
DISPOSAL OF CONTAINERS	Labels should not be removed from containers until they have been cleaned. Do not cut, puncture or weld, on or near the container. Dispose of containers with care. Container should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. After cleaning, all existing labels should be removed. Do not incinerate closed containers.

14 - TRANSPORTATION

UN Nr.	1965
UK TRANSPORT INFORMATION	UK transport emergency Action Code: 2YE. UK Transport – Class: 2.1 UK Transport – Designation: Hydrocarbon gas mixture, liquefied, n.o.s.
PROPER SHIPPING NAME	Hydrocarbon gas mixture, liquefied, n.o.s. (butane, propane)
ADR/RID - CLASS	2
ADR/RID ITEM No.	2°F
ADR/RID SUBSTANCE IDENTIFICATION NUMBER	1965
ADR/RID HAZARD IDENTIFICATION NUMBER	23
IMDG – CLASS	2(2.1)
IMDG – MARINE POLLUTANT	No
IMDG – Ems NUMBER	2-07
IMDG – MFAG NUMBER	310

IMDG – MFAG TABLE NUMBER	310
IATA – CLASS	2.1

15 - REGULATORY INFORMATION

EC ANNEX I CLASSIFICATION	Preparation containing solely listed substances.
EC CLASSIFICATION	-
SYMBOLS	F+: Extremely flammable
R PHRASES	Rl2 – Extremely flammable
S PHRASES	2-9-16 Keep out of reach of children, keep container in well ventilated place, Keep away from ignition sources, including static discharge.

16 - OTHER INFORMATION

RECOMMENDED USES	Aerosol propellant

NOTE

This information contained within this safety data sheet applies only to the Harp International Limited product to which it relates. The information provided is based upon our best knowledge at the time that this safety data sheet was published.
The information is believed to be accurate and is given in all good faith.
When used in other preparations, in formulations or in mixtures, it is necessary to ascertain if the classification of the hazards have changed.
The attention of users is drawn to the possibility of creating other hazards when the product is used for purposes other than that for which it is recommended. In such cases a complete reassessment should be made by user.
This safety data sheet should only be used and reproduced in order that the necessary measures may be taken relating to the protection of health and safety at work and relating to the protection of environment.
The reference to the legislative, regulatory and codes of practice documents must not be considered as exhaustive.
It is the responsibility of handlers of the product to pass on the totality of the information contained within this document to any subsequent persons who will come into contact with, handle or use the product in any way.
They should check the adequacy of the information contained in the safety data sheet received before passing it onto their customers.

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