

SAFETY DATA SHEET

Product:

HARP® Isobutane

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Revision: 1.2

Date: 04/08

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

PRODUCT NAME

HARP® ISOBUTANE

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 frostbite or corneal damage.

HEALTH EFFECTS – SKIN

Liquid or cold vapour may cause frostbite.

HEALTH EFFECTS – INGESTION

Not applicable.

HEALTH EFFECTS – INHALATION

Exposure to vapour concentrations of 1000ppm and above 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® ISOBUTANE

NAME

Isobutane

CONCENTRATION

98% wt.

CAS NUMBER

75-28-5

EINECS NUMBER

200-85-72

SYMBOLS

F+

R PHRASE(S)

12

NAME

Butane

CONCENTRATION

0.1% wt.

CAS NUMBER

106-97-8

EINECS NUMBER

203-448-7

SYMBOLS

F+

R PHRASE(S)

12

NAME

Propane

CONCENTRATION

0.6% wt.

CAS NUMBER

74-98-6

EINECS NUMBER

200-827-9

SYMBOLS

F+

R PHRASE(S)

12

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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

SPECIFIC 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

Do not touch spilled liquid. 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. Disperse vapour with water spray.

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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 OCCUPATIONAL EXPOSURE STANDARDS

None assigned. An exposure limit of 600ppm (1430 mg/m³) 8h TWA is recommended. An exposure limit of 750ppm (1780 mg/m³) 10 min TWA is recommended.

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

-12.0°C

FLASH POINT (ASTM D 92)

-118°C

AUTOIGNITION TEMPERATURE

490.0°C

FLAMMABILITY LIMITS

1.9 to 8.5 vol. % in air

LIQUID DENSITY

(20°C): 557.0 kg/m³

SOLUBILITY IN WATER

49 mg/l. (at 20°C)

VAPOUR PRESSURE

(20°C): 2100 hPa

PARTITION COEFFICIENT

2.68 Log_{pow}

RELATIVE VAPOUR DENSITY (AIR = 1)

2.06

10 - STABILITY AND REACTIVITY

STABILITY

Stable under normal conditions. No unusual reactivity.

CONDITIONS TO AVOID

High temperatures. Static discharges.

MATERIALS TO AVOID

Oxidising agents.

HAZARDOUS DECOMPOSITION

PRODUCTS

None known. Combustion will generate: oxides of carbon.

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11 - TOXICOLOGICAL INFORMATION

ACUTE
SUB-ACUTE/SUBCHRONIC
TOXICITY

Low order of acute toxicity.
There are no reports of adverse long term effects following repeated exposure.

12 - ECOLOGICAL INFORMATION

MOBILITY
PERSISTENCE/DEGRADABILITY
BIO-ACCUMULATION
ECOTOXICITY

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

13 - DISPOSAL CONSIDERATIONS

DISPOSAL OF PRODUCT
DISPOSAL OF CONTAINERS

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.
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 Number. 1969

ROAD (ADR)/(RAIL)
UN Number. 1969
PROPER SHIPPING NAME Isobutane
HAZARD IDENTIFICATION NUMBER 23
CLASS 2
CLASSIFICATION CODE 2F
LABEL(S) 2.1

MARINE (IMO-IMDG)
UN Number. 1969
CLASS OR DIVISION 2.1
IMDG LABEL(S) 2.1
IMDG MARINE POLLUTION No

AIR TRANSPORT (ICAO/IATA)
UN Number. 1969
CLASS OR DIVISION 2.1
UN PACKING GROUP A1
HAZARD LABELS Class 2 – Gases: Flammable (Division 2.1) prohibited in passenger aircraft

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15 - REGULATORY INFORMATION

LABELLING AND CLASSIFICATION EC SYMBOL(S) EC	Classification according to directives 67/548/EEC and 1999/45/EC.
R PHRASES	F+: Extremely flammable.
S PHRASES	R12 – Extremely flammable.
	S2 - Keep out of reach of children.
	S9 - Keep container in well ventilated place.
	S16 - Keep away from ignition sources – No Smoking.
	S33 – Take precautions against static discharge.
EINECS NUMBER	200-857-2
ANNEX I – Number	601-004-00-0
REGISTRATION	TSCA
	EINECS
	DSL
	ENCS
	AICS
	ECL
	PICCS
	IGS/IGS Giftliste

16 - OTHER INFORMATION

RECOMMENDED USES	Foam blowing agent
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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.

End of document