

1. Identification of the substance / preparation and company / undertaking

Product name R23

REACH registration number Registration deadline not expired

Company Harp International Ltd
Gellihirion Industrial Estate
Pontypridd
Rhondda Cynon Taff
CF37 5SX
Tel: +44 (0) 1443 842255
Fax: +44 (0) 1443 841805
Email: harp@harpintl.com

Emergency phone number +44 (0) 1270 502891 (24 hour)

Use Refrigerant

2. Hazards identification

Classification of the substance or mixture

Gases under pressure – Liquefied gas H280: Contains gas under pressure; may explode if heated

Not a hazardous substance or mixture according to EC-directives 67/548/EEC or 1999/45/EC

Label Elements



Gas cylinder

Warning

H280 Contains gas under pressure; may explode if heated.
Contains fluorinated greenhouse gas covered by the Koyoto Protocol

P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Other hazards

Rapid evaporation of the liquid may cause frostbite.

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

3. Composition / information on ingredients

Hazardous ingredient(s)

Chemical name	CAS No.	EC No.	Registration number	Classification according to Directive 67/548/EEC	Classification according to Regulation 1272/2008 (CLP)	Concentration (%)
Trifluoromethane	75-46-7	200-872-4			Press. Gas H280	100

For the full text of H-statements mention in this section, see section 16.

4. First aid measures

Description of first aid measure

General advice	Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
Inhalation	Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.
Skin contact	Take off all contaminated clothing immediately. Flush are with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.
Eye contact	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Seek medical attention.
Ingestion	Not considered a potential route of exposure.

Most important symptoms and effects, both acute and delayed

Symptoms	Skin contact may provoke the following symptoms: Frostbite. Inhalation may provoke the following symptoms: Shortness of breath, dizziness, weakness, nausea, headache, narcosis, irregular cardiac activity.
----------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Indication of any immediate medical attention and special treatment needed

Treatment	Do not give adrenaline or similar drugs
-----------	-----------------------------------------

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
------------------------------	---------------------------------------------------------------------------------------------------------

Special hazards arising from the substance or mixture

Specific hazards during fire fighting	Fire or intense heat may cause violent rupture of packages Hazardous thermal decomposition products: Carbon oxides, hydrogen fluoride, carbonyl fluoride, fluorocarbons
---------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Advice for fire fighters

Special protective equipment	In the event of a fire, wear self-contained breathing apparatus. Use personal protective equipment. Wear neoprene gloves during cleaning up work after a fire. Exposure to decomposition products may be a hazard to health.
------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Ventilate the area. Refer to protective measures listed in sections 7 and 8.

Environmental precautions

Environmental precautions Should not be released to the environment

Methods and materials for containment and cleaning up

Methods for cleaning up Evaporates

Refer to other sections

7. Handling and storage

Precautions for safe handling

Advice on safe handling Avoid breathing vapours or mist. Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8.

Advice on protection against fire & explosion No special protective measures against fire required

Conditions for safe storage, including any incompatibilities

Requirements for storage areas & containers Do not drag, slide or roll cylinders. Never attempt to lift cylinder by its cap. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Keep at temperature not exceeding 52°C. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container. Protect from contamination

Advice on common storage No materials to be especially mentioned

Storage temperature <52°C

Specific end uses No data available

8. Exposure controls / personal protection

Control parameters

Exposure controls

Engineering measures Ensure adequate ventilation, especially in confined areas. Local exhaust should be used when large amounts are released.

Eye protection Safety glasses with side-shields. Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material

Hand protection Heat insulating gloves

Skin and body protection Impervious clothing

Hygiene measures Handle in accordance with good industrial hygiene and safety practice

SAFETY DATA SHEET

According to Regulation (EC) No.1907/2006

HARP® R23

Version: CLP01

Date: Oct 2011

Page 4 of 6

9. Physical and chemical properties

Form	Liquified gas
Colour	Colourless
Odour	Slight ether-like
pH	neutral
Melting point/range	-155.2°C
Boiling point/boiling range	-82.2°C at 1 013 hPa
Explosive properties	Not explosive
Lower explosion/flammability limit	Not applicable
Upper explosion/flammability limit	Not applicable
Vapour pressure	46 986 hPa at 25°C 41 600 hPa at 20°C
Density	0.67 g/cm ³ at 25°C (as liquid) 1.029 g/cm ³ at 0°C (as liquid) 0.0047 g/cm ³ at -82°C (1 013 hPa) 0.0037 g/cm ³ at 25°C (1 013 hPa)
Water solubility	1.08 g/l at 20°C
Partition coefficient: n-octanol/water	log P _{ow} : 0.64
Relative vapour density	2.4 (Air = 1.0)
Other information	No data available

10. Stability and reactivity

Reactivity	Decomposes on heating
Chemical stability	The product is chemically stable
Possibility of hazardous reactions	Polymerization will not occur
Conditions to avoid	The product is not flammable in air under ambient conditions of temperature and pressure. When pressurised with air or oxygen, the mixture may become flammable. Certain mixtures of HCFCs of HFCs with chlorine may become flammable or reactive under certain conditions.
Incompatible materials	Alkali metals, alkaline earth metals, powdered metals, powdered metal salts
Hazardous decomposition products	Hazardous thermal decomposition products may include hydrogen fluoride, carbon oxides, fluorocarbons, carbonyl fluoride.

11. Toxicological information

Information on toxicological effects

Acute inhalation toxicity	LC50 / rat: > 663 000 ppm
Skin irritation	Not tested on animals, not classed as irritant, no skin irritation, not expected to cause skin irritation based on expert review of the properties of the substance
Eye irritation	Not tested on animals. Not classified as irritant. No eye irritation. Not expected to cause eye irritation based on expert review of the properties of the substance

HARP® R23

Version: CLP01

Date: Oct 2011

Page 5 of 6

Sensitisation	Not tested on animals. Not a skin sensitizer. Does not cause skin sensitization. Not expected to cause sensitization based on expert review of the properties of the substance.
Mutagenicity assessment	Animal testing did not show any mutagenic effects
Carcinogenicity assessment	No data available
Toxicity to reproduction assessment	No toxicity to reproduction
Human experience	Excessive exposures may affect human health as follows. Inhalation: Severe shortness of breath, narcosis, irregular cardiac activity
Further information	Rapid evaporation of the liquid may cause frostbite.

12. Ecological information

Toxicity	
Persistence and degradability	No data available
Bioaccumulative potential	
Bioaccumulation	No data available
Mobility in soil	
Mobility in soil	No data available
Results of PBT and vRvB assessment	
PBT and vPvB assessment	No data available
Other adverse effects	
Ozone depletion potential	0
Global warming potential (GWP)	12 000

13. Disposal considerations

Waste treatment methods	
Product	Can be reused after re-conditioning. In accordance with local and national regulations.
Contaminated packaging	Empty pressure vessels should be returned to the supplier.

14. Transport information

ADR	
Class	2
Classification code	2A
HI No	20
UN number	1984
Labelling no	2.2
Proper shipping name	Trifluoromethane
Tunnel restriction code	(C/E)
IATA_C	
Class	2.2
UN number	1984
Labelling number	2.2
Proper shipping name	Trifluoromethane

SAFETY DATA SHEET

According to Regulation (EC) No.1907/2006


INTERNATIONAL

HARP® R23

Version: CLP01

Date: Oct 2011

Page 6 of 6

IMDG

Class	2.2
UN number	1984
Labelling no.	2.2
Proper shipping name	Trifluoromethane

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

No data available

Chemical Safety Assessment

A Chemical Safety Assessment is not required for this substance

16. Other information

Full text of H-Statements referred to under section 3.

H280: Contains gas under pressure; may explode if heated.

This datasheet was prepared in accordance with Regulation (EC) No. 1907/2006.

Information in this publication is believed to be accurate and is given in good faith but it is for the user to satisfy itself of the suitability for its own particular purpose. Accordingly, Harp International Limited gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition, statutory or otherwise, is excluded except to the extent that such exclusion is prevented by law. Freedom under Patent, Copyright and Designs cannot be assumed. HARP® is a trademark, the property of Harp International Ltd.

Harp International Limited is registered in England & Wales No. 02432294. Registered office: Gellihirion Industrial Estate, Pontypridd, Rhondda Cynon Taff, CF37 5SX.