

MATERIAL SAFETY DATA SHEET

Product: HARP® 134a / R152a blend

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Revision: 1.0

Date: 12/08

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

PRODUCT NAME HARP® 134a / R152a blend

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02 - HAZARDS IDENTIFICATION

Rapid evaporation of the liquid may cause frostbite.

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

03 - COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	EC-No.	Classification	Concentration
1,1,1,2-tetrafluoroethane (R134a)	000811-97-2	212-377-0		87 +1.5 -0.5 % w/w
1,1-Difluoroethane (R152a)	000075-37-6	200-866-1	F+; R12	13 +0.5 -1.5 % w/w

For the full text of the R phrases mentioned in this section, see section 16.

04 - FIRST AID MEASURES

General advice: If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person. If breathing is irregular or stopped, administer artificial respiration. If symptoms persist, call a physician.

Inhalation: Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary.

Skin Contact: Wash off with warm water. Take off all contaminated clothing immediately.

Eye Contact: Rinse thoroughly with plenty of water, also under the eyelids. Consult a physician.

Note to physician: Do not give adrenaline or similar drugs

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05 - FIRE-FIGHTING MEASURES

Specific hazards during fire fighting: Pressure build up.

Special protective equipment for fire-fighters: In the event of fire, wear self-contained breathing apparatus.

Further information: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool containers / tanks with water spray.

06 - ACCIDENTAL RELEASE MEASURES

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

Environmental precautions: Should not be released into the environment.

Methods for cleaning up: Evaporates.

07 - HANDLING AND STORAGE

Handling

Advice on safe handling: 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.

Storage

Requirements for storage areas & containers: Keep container tightly closed in a dry and well-ventilated place. Store in original container.

Advice on common storage: No materials to be especially mentioned.

Storage class: 2A: Compressed, liquefied or pressurised gas

08 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Component	CAS No.	Type	Control parameters	Update	Basis
1,1,1,2-Tetrafluoroethane (R134a)	811-97-2	TWA	4240mg/m ³	2005	EH40 OES

Engineering measures

Ensure adequate ventilation, especially in confined areas.

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Personal protective equipment

Respiratory protection:	For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.
Hand protection:	Heat insulating gloves
Eye protection:	Safety glasses
Hygiene measure:	Handle in accordance with good industrial hygiene and safety practice.

09 - PHYSICAL AND CHEMICAL PROPERTIES

Form:	liquefied gas
Colour:	colourless
Odour:	ether-like
Boiling point/range:	-26.5 - -24.7 °C at 1013 hPa
Flash point:	does not flash
Lower explosion limit:	no data available
Vapour Pressure	4490 hPa at 20°C
Vapour Pressure:	11850 hPa at 50°C
Density:	113g/cm ³ at 20 °C (as liquid)

10 - STABILITY AND REACTIVITY

Conditions to avoid:	This 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 or HFCs with chlorine may become flammable or reactive under certain conditions.
Materials to avoid:	alkali metals, alkaline earth metals, powdered metals, powdered metal salts
Hazardous Decomposition Products:	hydrogen halides, carbon dioxide, carbon monoxide, fluorocarbons, carbonyl halides

11 - TOXICOLOGICAL INFORMATION

Acute inhalation toxicity	
1,1,1,2-Tetrafluoroethane (R134a):	LC50/4 h/rat: >2085 mg/l
1,1-Difluoroethane (R152a):	LC50/2 h/rat: >5395 mg/l LC50/2 h/mouse: 960 mg/l
Carcinogenicity assessment:	Animal testing did not show any carcinogenic effects
Toxicity to reproduction assessment:	Did not show mutagenic or teratogenic effects in animal experiments
Human experience:	Excessive exposures may affect human health (inhalation – narcosis, severe shortness of breath, irregular cardiac activity)
Further information:	Rapid evaporation of the liquid may cause frostbite

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12 - ECOLOGICAL INFORMATION

Toxicity to fish 1,1,1,2-Tetrafluoroethane (R134a): LC50/96 h/Oncorhynchus mykiss (rainbow trout): 450mg/l
Aquatic toxicity 1,1,1,2-Tetrafluoroethane (R134a): EC50/48 h/Daphnia: 980mg/l
Further ecological information No data is available on the product itself

13 - DISPOSAL CONSIDERATIONS

Product: Can be used after re-conditioning
Contaminated packaging: Empty pressure vessels should be returned to the supplier

14 - TRANSPORT INFORMATION

ADR

Class: 2
Classification code: 2A
HI No: 20
UN No: 3163
Labelling No: 2.2
Proper shipping name: Liquified gas, n.o.s. (Tetrafluoroethane, 1,1-Difluoroethane (R152a))

IATA_C

Class: 2.2
UN No: 3163
Labelling No: 2.2
Proper shipping name: Liquified gas, n.o.s. (Tetrafluoroethane, 1,1-Difluoroethane (R152a))

IMDG

Class: 2.2
UN No: 3163
Labelling No: 2.2
Proper shipping name: Liquified gas, n.o.s. (Tetrafluoroethane, 1,1-Difluoroethane (R152a))

15 - REGULATORY INFORMATION

Labelling according to EC Directives

The product does not need to be labelled in accordance with EC directives or respective national laws.

16 – OTHER INFORMATION

Text of R phrases mentioned in Section 2

R12 Extremely flammable

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This data sheet was prepared in accordance with Directive 2001/58/EC.

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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