According to Regulation (EC) No.1907/2006



GENETRON Performax[™] LT (R407F)

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

Product name GENETRON PerformaxTMLT (R407F)

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

EC Classification

Regulation (EC) No. 1272/2008 (CLP): Gases under pressure – Liquefied gas

H280 Contains gas under pressure; may explode if heated

Directives 67/548/EEC or 1999/45/EC: Handle in accordance with good industrial hygiene and safety practice

Label Elements

Hazard pictogram(s):



Signal word: Warning

Hazard statements: H280: Contains gas under pressure; may explode if heated

Precautionary statements: P281: Use personal protective equipment as required

P260: Do not breathe dust / fumes / gas / mist / vapours / spray P308+P313: If exposed or concerned: Get medical advice / attention P410+P403: Protect from sunlight. Store in a well-ventilated place

Directives 67/548/EEC or 1999/45/EC

Additional information: Not a hazardous substance or mixture

Additional label elements

Hazardous components which must be listed on the label: Norflurane, Difluoromethane, Pentafluoroethane

Potential health effects

Skin Rapid evaporation of the liquid may cause frostbite

Eyes May cause eye irritation
Ingestion Unlikely route of exposure

Inhalation High vapour concentrations can cause headaches, dizziness, drowsiness and

nausea and may lead to unconsciousness. May cause cardiac arrhythmia

Chronic exposure Causes damage to the following organs: cardiovascular system, upper

respiratory tract

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General advice Contains gas under pressure; may explode if heated

Potential environmental effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal

3. Composition / information on ingredients

Hazardous components

Chemical name	CAS no.	EC no.	Classification 1272/2008	Classification 67/548/EEC	Concentration	Remarks
Norflurane	811-97-2	212-377-0	Gases under		>=25 - <50	See
			pressure; H280			specification
Difluoromethane	75-10-5	200-839-4	Flammable gases 1;	F+; R12	>=25 - <50	for specific
			H220 Gases under			concentrations
			pressure; H280			
Pentafluoroethane	354-33-6		Gases under		>=25 - <50	
			pressure; H280			

Occupational Exposure Limits, if available, are listed in section 8.

For the full text of the R-phrases / H-statements mentioned in this section, see section 16.

4. First aid measures

Inhalation Remove to fresh air. Artificial respiration and/or oxygen may be

necessary. Call a physician immediately.

Skin contact Rapid evaporation of the liquid may cause frostbite. In case of contact

with liquid, thaw frosted parts with water then remove clothing

carefully. Wash with plenty of water. Consult a physician.

Eye contact Remove contact lenses. Rinse immediately with plenty of water,

including under the eyelids, for at least 15 minutes.

Ingestion As this product is a gas, refer to the inhalation section. Do not induce

vomiting without medical advice. Never give anything by mouth to an

unconscious person. Call a physician immediately.

Notes to physician

Treatment Do not give adrenaline or similar drugs

See section 11 for more detailed information on health effects and symptoms.

5. Fire-fighting measures

Extinguishing media The product is not flammable. ASHRAE 34. Use water spray, alcohol

resistant foam, dry chemical or carbon dioxide.

Specific hazards during fire-fighting Possibility of generating hazardous reactions during a fire due to the

presence of F and Cl groups. Heating will cause a pressure rise with risk of bursting. Cool closed containers exposed to fire with water spray. This product is not flammable at ambient temperatures and atmospheric pressure. However, this material can ignite when mixed

with air under pressure and exposed to strong ignition sources.

Fire Fighting Protective Equipment Wear full protective clothing and self-contained breathing apparatus.

Further information Use extinguishing measures that are appropriate to local circumstances

and the surrounding environment.

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6. Accidental release measures

Personal protection Immediately contact emergency personnel. Wear personal protective

equipment. Unprotected persons must be kept away. Ensure adequate ventilation. In case of insufficient ventilation wear suitable respiratory

equipment.

Environmental precautions Prevent further leakage or spillage if safe to do so. The product

evaporates readily.

For personal protection, see section 8.

7. Handling and storage

Advice on safe handling Open drum carefully as content may be under pressure. The product

should only be used in areas from which all naked lights and other sources of ignition have been excluded. Pressurised container. Protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material. Do not use in areas without adequate ventilation. Contaminated equipment (brushes, rags) must be cleaned immediately

with water.

Hygiene measures Provide adequate ventilation. When using, do not eat or drink.

Storage Storage Store in original container. Keep away from direct sunlight. Keep

containers tightly closed in a cool, well-ventilated place.

8. Exposure controls / personal protection

Occupational exposure limits

Components	Basis	Value type	Control parameters	Exceeding	Form of	Remarks
				factor	exposure	
Norflurane	EH40 WEL	Time weighted	4.240 mg/m^3			
		average	1.000 ppm			
Difluoromethane	WEL	Time weighted	2.200 mg/m^3			We are not
		average	1.000 ppm			aware of any
Pentafluoroethane	Honeywell	Time weighted	1.000 ppm			national
		average				exposure limit

Occupational exposure controls

The Personal Protective Equipment must be in accordance with EN standards: respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, safety shoes EN-ISO 20345.

Environmental exposure controls

Handle in accordance with local environmental regulations and good hygiene practices.

Personal protective equipment

Hand protection Glove material: Vitron (R). Heat insulating gloves.

Eye protection Safety glasses with wide-shields conforming to EN166. Face shield.

Skin & body protection Protective footwear

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9. Physical and chemical properties

Form Liquefied gas
Colour Clear and colourless

Odour Ether-like

Boiling point/boiling range-45,5°C at 1.013 hPa **Ignition temperature**No data available

Lower explosion limitNoneUpper explosion limitNone

Vapour pressure 10.218 hPa at 21,1°C **Density** No data available

pH Neutral

Water solubility No data available

Partition coefficient: n-octanol/water log Pow 1,06 (1,1,1,2-tetrafluoroethane (HFC-134a) log Pow 1,48 (pentafluoroethane (HFC-125)

Relative vapour density Not determined

10. Stability and reactivity

Conditions to avoid Heating will cause pressure rise with risk of bursting. Protect from

sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use, Do not spray on a naked flame or any

incandescent material.

Materials to avoid Oxidising substances. Possible incompatibility with alkali sensitive

materials. Powdered metals.

Halogenated compounds, hydrogen fluoride, carbonyl halides, carbon

oxides

11. Toxicological information

Acute oral toxicity

No data available

Acute dermal toxicity

No data available

Acute inhalation toxicity LC50, species: rat, value: >500000ppm, exposure time: 4 h, test

substance: 1,1,1,2-tetrafluoroethane (HFC-134a)

Acute inhalation toxicity LC50, species: rat, value: 520000ppm, exposure time: 4 h, test

substance: difluoromethane (HFC-32)

Acute inhalation toxicity LC50, species: rat, value: >769000ppm, exposure time: 4 h, test

substance: pentafluoroethane (HFC-125)

Skin irritation No data available

Eye irritation No data available

Sensitisation Cardiac sensitization, species: dog, test substance: 1,1,1,2-

tetrafluoroethane (HFC-134a), no observed effect level 50 000 ppm,

lowest observable effect level 75 000 ppm.

Sensitisation Cardiac sensitization, species: dog, test substance: difluoromethane

(HFC-32), no observed effect level >350 000 ppm.

Sensitisation Cardiac sensitization, species: dog, test substance: pentafluoroethane

(HFC-125), no observed effect level 75 000 ppm, lowest observable

effect level 100 000 ppm.

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Repeated dose toxicology Species: rat, route of exposure: inhalation, NOEL: 50000 ppm, test

substance: 1,1,1,2-tetrafluoroethane (HFC-134a), subchronic toxicity

Repeated dose toxicology Species: rat, NOEL: 10000 ppm, test substance: 1,1,1,2-

tetrafluoroethane (HFC-134a), chronic toxicity.

Repeated dose toxicology Species: rat, route of exposure: inhalation, NOEL: >=50000 ppm, test

substance: diflurormethane (HFC-32), subchronic toxicity.

Repeated dose toxicology Species: rat, route of exposure: inhalation, NOEL: >=50000 ppm, test

substance: pentafluoroethane (HFC-125), subchronic toxicity

Further information Inhalation: may cause cardiac arrhythmia

12. Ecological information

Ecotoxicity effects

Toxicity to fish

Toxicity to aquatic plants

Toxicity to microorganisms

Acute toxicity to aquatic invertebrates

No data available

No data available

No data available

Further information

13. Disposal considerations

Product Offer surplus and non-recyclable solutions to a licensed disposal

company. Refer to manufacturer/supplier for information on recovery/

recycling.

Remarks To present knowledge of the supplier, this product is not regarded as

hazardous waste as defined by EU directive 91/689/EC

Waste key for the unused product Classification: 14 06 01

Further information Provisions relating to waste: EC Directive 2006/16/EC; 91/689/EEC,

Regulation number 1013/2006

For personal protection see section 8.

14. Transport information

ADR/RID

UN Number 3163

Description of the goods LIQUEFIED GAS, N.O.S

Class 2
Classification code 2A
Hazard identification number 20
ADR/RID labels 2.2
Environmentally hazardous No

IATA

UN Number 3163

Description of the goods LIQUEFIED GAS, N.O.S (1,1,1,2-TETRAFLUOROETHANE,

DIFLUOROMETHANE, PENTAFLUOROETHANE)

Class 2.2 Hazard labels 2.2

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IMDG

UN Number 3163

Description of the goods LIQUEFIED GAS, N.O.S (1,1,1,2-TETRAFLUOROETHANE,

DIFLUOROMETHANE, PENTAFLUOROETHANE)

Class 2.2
Hazard labels 2.2
EmS Number F-C, S-V
Marine pollutant No

15. Regulatory information

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

Ozone depleting potential 0
Global warming potential (GWP) 1.705

Other inventory information

Country	Legislation	Information		
US	Toxic Substances Control Act	On TSCA inventory		
Australia	Industrial Chemical (Notification & Assessment) Act	On the inventory or in compliance		
		with the inventory		
Canada	Canadian Environmental Protection Act (CEPA)	All components of this product are on		
	Domestic Substances List (DSL) (Can. Gaz. Part II, Vol.144)	the Canadian DSL list		
Japan	Kashin-Hou Law List	On the inventory or in compliance		
		with the inventory		
Korea	Existing Chemicals Inventory (KECI)	On the inventory or in compliance		
		with the inventory		
Philippines	The Toxic Substances and Hazardous and Nuclear Waste	On the inventory or in compliance		
	Control Act	with the inventory		
China	Inventory of Existing Chemical Substances	On the inventory or in compliance		
		with the inventory		
New	Inventory of Chemicals (NZIoC), as published by ERMA	On the inventory or in compliance		
Zealand	New Zealand	with the inventory		

16. Other information

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

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Glossary

EC European Community
CAS Chemical Abstract Service
WEL Workplace Exposure Limit

MAK: Maximale Arbeitsplatz-Konzentration

STEL Short Term Exposure Limit