

SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 as amended by Commission Regulation (EU) 2020/878 and Regulation (EC) No. 1272/2008

Issuing Date draft

Revision Date 30-Jun-2023

Revision Number 1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Code(s) GHD-150-0299, GHD-150-0323, GHD-150-0331, GHD-150-0332, GHD-150-0351, GHD-150-0352, GHD-150-0361, GHD-150-0362, GHD-150-0412, PSL-150-0209, PSL-150-0216, PSL-150-0239, PSL-150-0246, IXR66, IXCR66, AXR26, AXCR26, IXR66V, IXCR66V, AXR26V, AXCR26V, IPHR70, IPHCR70, AIR28, AICR28, IPHR21V, IPHCR21V, AIR21V, AICR21V, IVPR25, IVPCR25, BPNR25, BPNCR25

Product Name Swimming pool heat pump

REACH registration number

This product is considered an article under REACH with no intended release of substances.

Synonyms None

Pure substance/mixture Substance

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use Swimming Pool Heat Pump

Uses advised against Use only for intended applications. Do not submerge under water

1.3. Details of the supplier of the safety data sheet

Distributor

INVERTER SERVICES
10 rue Marc seguin 26740 Les Tourettes
PIERRE CRUMIERE
France

For further information, please contact

E-mail address sales@fairland.com.cn

1.4. Emergency telephone number

Emergency telephone 33 6 13 35 28 48

Emergency telephone - §45 - (EC)1272/2008

Europe 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

This product is a heat pump. No exposure to hazardous chemicals is expected to occur during intended product use. Misuse of the product may result in exposure to hazardous chemicals. The hazard classification information below relates to material found within the pump.

Flammable gases	Category 1A - (H220)
Gases under pressure	Liquefied gas - (H280)

2.2. Label elements

**Signal word**

Danger

Hazard statements

H220 - Extremely flammable gas.

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

Precautionary Statements - EU (§28, 1272/2008)

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381 - In case of leakage, eliminate all ignition sources.

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

2.3. Other hazards

May cause frostbite upon sudden release of liquefied gas.

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Difluoromethane 75-10-5	100	No data available	200-839-4	Press. Gas (Liq.) (H280) Flam. Gas 1A (H220)	-	-	-

Additional information

Quantity of refrigerant in heat pump: 2000g

Full text of H- and EUH-phrases: see section 16Acute Toxicity Estimate

No information available

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

SECTION 4: First aid measures**4.1. Description of first aid measures**

Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water, also under the eyelids.
Skin contact	In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
Ingestion	Rinse mouth.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms	Frostbite.
Effects of Exposure	No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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SECTION 5: Firefighting measures**5.1. Extinguishing media**

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	Do not direct water at source of leak or safety devices; icing may occur. DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	Cylinders may rupture under extreme heat. Damaged cylinders should be handled only by specialists. Containers may explode when heated. Ruptured cylinders may rocket.
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5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
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SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Personal precautions	Contents under pressure. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.
For emergency responders	Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions	See Section 12 for additional Ecological Information.
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6.3. Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information See section 13 for more information

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Contents under pressure. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Take precautionary measures against static discharge. Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from sunlight.

Storage class (TRGS 510) Storage class 2A.

7.3. Specific end use(s)

Specific use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Difluoromethane 75-10-5	-	TWA: 2000 mg/m ³ Ceiling: 5000 mg/m ³	-	-	-
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Difluoromethane 75-10-5	-	-	-	TWA: 2 ppm TWA: 20 mg/m ³	-

Biological occupational exposure limits

Chemical name	Latvia	Luxembourg	Romania	Slovakia
Difluoromethane 75-10-5	-	-	5 mg/g Creatinine - urine (Fluorine) - end of shift	-

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
Difluoromethane 75-10-5	-	-	7035 mg/m ³ [4] [6]

Notes

[4] Systemic health effects.

[6] Long term.

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
Difluoromethane 75-10-5	-	-	750 mg/m ³ [4] [6]

Notes

[4] Systemic health effects.
[6] Long term.

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
Difluoromethane 75-10-5	0.142 mg/L	1.42 mg/L	-	-	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
Difluoromethane 75-10-5	0.534 mg/kg sediment dw	-	-	-	-

8.2. Exposure controls**Engineering controls**

Showers
Eyewash stations
Ventilation systems.

Personal protective equipment**Eye/face protection**

If splashes are likely to occur: Wear safety glasses with side shields (or goggles), Face protection shield. Eye protection must conform to standard EN 166.

Hand protection

If there is a risk of contact: EN 511 Cold insulating gloves.

Skin and body protection

If there is a risk of contact: Wear appropriate protective, cold insulating clothing (EN ISO 6529).

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

No information available.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Appearance Liquefied gas. Quantity of refrigerant in heat pump: 2000g
Physical state Gas
Color Colorless
Odor Ether-like odor
Odor threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point	-136 °C	
Initial boiling point and boiling range	-51.72 °C	
Flammability		No data available
Flammability Limit in Air		
Upper flammability or explosive limits	33.4%	
Lower flammability or explosive limits	12.7%	
Flash point		No data available
Autoignition temperature		No data available
Decomposition temperature		No data available
pH		No data available
pH (as aqueous solution)		No data available
Kinematic viscosity		
Dynamic viscosity	0.0133 mPa s	
Water solubility	44 g/l @ 25 °C	
Solubility(ies)		No data available
Partition coefficient		No data available
Vapor pressure	202.65 KPa/28.4°	
Relative density	1.1	
Bulk density		No data available
Liquid Density		No data available
Relative vapor density	1.8:1 (air)	
Particle characteristics		
Particle Size		No data available
Particle Size Distribution		No data available

9.2. Other information

9.2.1. Information with regard to physical hazard classes
Not applicable

9.2.2. Other safety characteristics

Sensitivity to mechanical impact Yes

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity None under normal use conditions.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact Yes.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid High temperature, Excessive heat.

10.5. Incompatible materials

Incompatible materials None known based on information supplied.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition can lead to release of irritating and toxic gases and vapors.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available. Contact with product may cause frostbite.
Skin contact	Specific test data for the substance or mixture is not available. Contact with product may cause frostbite.
Ingestion	Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Frostbite.

Acute toxicity

Numerical measures of toxicity

Based on available data, the classification criteria are not met.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Difluoromethane	-	-	> 520000 ppm (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
Respiratory or skin sensitization	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT - single exposure	Based on available data, the classification criteria are not met.
STOT - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

11.2. Information on other hazards**11.2.1. Endocrine disrupting properties**

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information**12.1. Toxicity**

Ecotoxicity The environmental impact of this product has not been fully investigated.

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential**Bioaccumulation****Component Information**

Chemical name	Partition coefficient
Difluoromethane	0.21

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB.

Chemical name	PBT and vPvB assessment
Difluoromethane 75-10-5	The substance is not PBT / vPvB

12.6. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

12.7. Other adverse effects

Other adverse effects No information available.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

Waste codes / waste designations according to EWC / AVV According to the European Waste Catalog, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information

IMDG

14.1 UN number or ID number	UN3358
14.2 UN proper shipping name	REFRIGERATING MACHINES
14.3 Transport hazard class(es)	2.1
14.4 Packing group	Not applicable
Description	UN3358, REFRIGERATING MACHINES, 2.1
14.5 Environmental hazards	Not applicable
14.6 Special Precautions for Users	
Special Provisions	291
EmS-No.	F-D, S-U
14.7 Maritime transport in bulk according to IMO instruments	No information available

RID

14.1 UN number	UN3358
14.2 UN proper shipping name	REFRIGERATING MACHINES
14.3 Transport hazard class(es)	2.1
14.4 Packing group	Not applicable
Description	UN3358, REFRIGERATING MACHINES, 2.1
14.5 Environmental hazards	Not applicable
14.6 Special Precautions for Users	
Special Provisions	291
Classification code	6F

ADR

	Special Provision 291: Flammable liquefied gases shall be contained within refrigerating machine components. These components shall be designed and tested to at least three times the working pressure of the machinery. The refrigerating machines shall be designed and constructed to contain the liquefied gas and preclude the risk of bursting or cracking of the pressure retaining components during normal conditions of carriage. Refrigerating machines and refrigerating-machine components are not subject to the requirements of ADR if they contain less than 12 kg of gas, Difluoromethane (UN No.3252)
14.1 UN number or ID number	UN3358
14.2 UN proper shipping name	REFRIGERATING MACHINES
14.3 Transport hazard class(es)	2.1
14.4 Packing group	Not applicable
Description	UN3358, REFRIGERATING MACHINES, 2.1
14.5 Environmental hazards	Not applicable
14.6 Special Precautions for Users	
Special Provisions	291
Classification code	F1
Tunnel restriction code	D/E

IATA

Forbidden for transport.

Notes:

Forbidden for transport.

14.1 UN number or ID number	UN3358
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	2.1
14.4 Packing group	Not applicable
Description	Forbidden
14.5 Environmental hazards	Not applicable
14.6 Special Precautions for Users	
Special Provisions	A103
ERG Code	10L

Note: None

SECTION 15: Regulatory information

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

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants

Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)

P2 - FLAMMABLE GASES

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

International Inventories

Contact supplier for inventory compliance status

15.2. Chemical safety assessment

Chemical Safety Report No information available

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend

ATE: Acute Toxicity Estimate

SVHC: Substances of Very High Concern for Authorization:

PBT: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals

vPvB: Very Persistent and very Bioaccumulative (vPvB) Chemicals

Legend Section 8: Exposure controls/personal protection

TWA TWA (time-weighted average)

STEL

STEL (Short Term Exposure Limit)

Ceiling Maximum limit value

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Skin designation

SCBA Self-contained breathing apparatus

Classification procedure

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Method Used

Acute oral toxicity

Calculation method

Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapor	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitization	Calculation method
Skin sensitization	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	On basis of test data
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method
Flammable gases	On basis of test data
Gases under pressure	On basis of test data

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
 European Chemicals Agency (ECHA) (ECHA_API)
 EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AEGL(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 Japan GHS Classification
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program
 Organization for Economic Co-operation and Development Screening Information Data Set
 World Health Organization

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This safety data sheet complies with the requirements of Commission Regulation (EU) 2020/878 of 18 June 2020 amending Regulation (EC) No. 1907/2006

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other

materials or in any process, unless specified in the text.

End of Safety Data Sheet