

ARCTIKO ULUF P50

true cooling specialists



ULTRA LOW TEMPERATURE | BENCHTOP / UNDERCOUNTER FREEZER

Highly reliable compact ULT freezer with a space-saving design and low GWP due to natural refrigerant.

▶ RELIABLE FREEZING

The single compressor technology provides reliable low-temperature freezing and high temperature uniformity.

The freezer can reach -86 °C with only one compressor because of the absolutely unique single compressor technology. With the direct cooling, you can successfully achieve maximum temperature uniformity and minimum recovery time.

All in all, outstanding cooling performance and ultra low GWP (Global Warming potential) due to the Natural Refrigerant.

▶ ONE OF A KIND

This compact ULUF P50 undercounter/benchttop model is the ideal solution for the smaller lab with limited floor space. It can store up to 500 samples, still maintaining a small footprint and reduced energy consumption, which saves money in operational costs.

The models are developed for demanding standards that need a precise and uniform temperature environment - ideal freezers for storage of DNA, RNA and other biological samples.

▶ ENERGY EFFICIENCY

The compact space-saving cabinet design guarantees a reduced footprint because of the Arctiko's specifically developed vacuum insulated panels, optimizing the freezer to increase energy efficiency and cooling performance.

The vacuum insulated panels are of a high-efficient quality that secures the lowest possible energy consumption. VIP panels combined with Arctiko's state-of-the-art single compressor technology provide a safe and high-quality ULT freezer.



ULUF P50*

NATURAL REFRIGERANT



SINGLE COMPRESSOR SYSTEM



VACUUM INSULATED PANELS



NOISE REDUCTION TECHNOLOGY



AIRFLOW CONTROL



FILTERLESS CONSTRUCTION



NATURAL REFRIGERANT



It includes a well-utilized inner compartment with room for up to 6000 samples. Its interior is made of the highly durable and robust stainless steel type AISI 304 for high sample safety and easy cleaning.

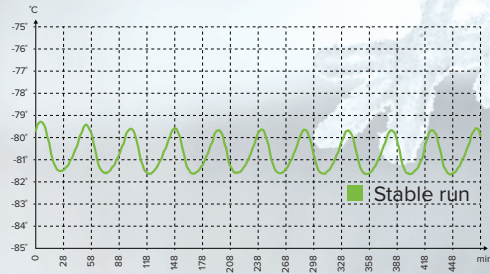
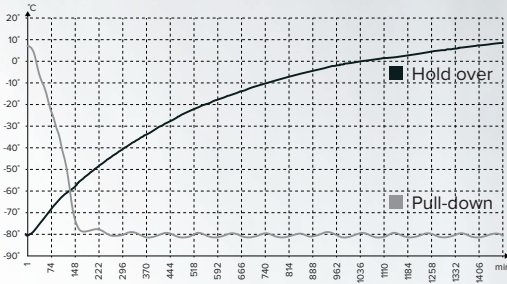


The unit is equipped with our brand new user-friendly 5" V500 controller that comes with the self-diagnostic test and ECO-mode reducing energy consumption while maintaining optimum temperature uniformity for the stored materials.



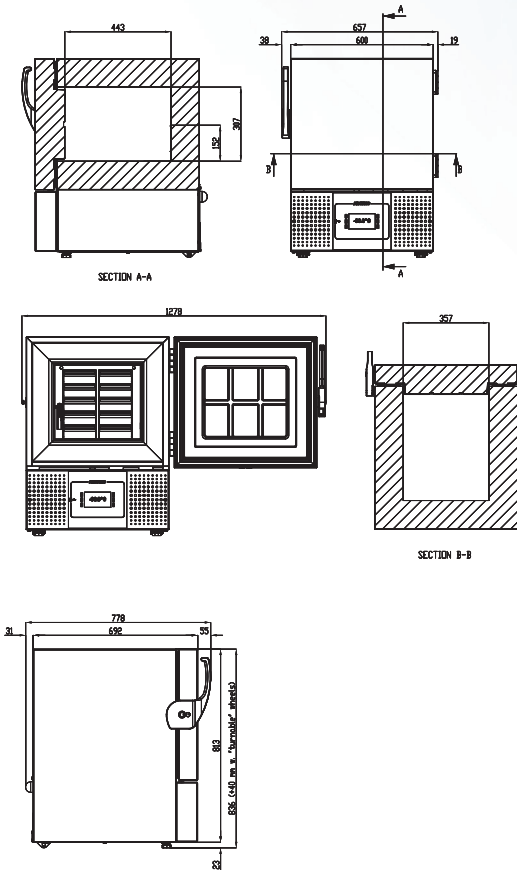
The Arctiko OneGrip™ handle is designed and developed for easy and ergonomic use. Daily operational routines can be performed with a smooth and easy one-handed door opening and closing experience.

* The pictures shown are for reference only, actual product size may vary. Please read the dimensions of the product in the specifications.



▲ IMPROVED RECOVERY TIMES

Pull-down times measures the time taken for temperature to rise, the faster the better. Hold over indication the freezers ability to keep the samples safe.



The ARCTIKO Integraline ULUF P50 Model supports following optional features:

- Modbus adapter for V500 controller
- Temperature chart recorder (external mounting)
- GSM alarm module
- Voltage converter
- Voltage stabilizer
- Racks & boxes
- Cryo gloves



	MODEL	ULUF P50
Main specifications	Item code	DAI 1825
	Temperature range (°C)	-25 / -86
	Max. ambient temperature (°C)	25
	Capacity (L)	50
	Exterior dimensions WxDxH (mm)	657x778x836
	Interior dimensions WxDxH (mm)	357x443x307
	Weight (KG)	75
	Insulation (mm)	120
	Cooling technology	single system / static
Controller model / probe type	V500 / PT100	
Power	Power supply (V)	230
	Frequency (Hz)	50/60
	Power consumption (kWh/24h)	5,9
	AMP (A)	3,0
	Power (Watt)	420
Horse power (HP)	1/2	
Alarm functions	Alarm display as text - not codes	yes
	Visual / acoustic alarm	yes / yes
	Power failure alarm	yes
	Adjustable high / low temperature alarm	yes / yes
	Open door alarm	yes
	Probe failure alarm	yes
	Low battery alarm	yes
	Compressor failure alarm	yes
Battery backup for alarms (approx. hrs.)	72	
Data logging & external connection	Voltage free contact for remote alarm (e.g. GSM alarm module)	yes
	Electronic data logger	yes
	RS 485 port	optional
	USB port for software update & data download	yes
Temperature chart recorder	optional (external mounting)	
Display features	Display type	5" touch screen
	Number of optional reference probes	1
	Password protection for turning unit on / off	yes
	Temperature graph on display	yes
Other features	Automatic defrost	no
	Antifreeze function	no
	Vacuum release port	yes
	Access port for external probe etc. (int. diameter mm)	12
	Light	no
	Lock with key	yes
	Castors (total pcs) / castors with brake (pcs)	2 rollers / optional
	Fixed feet (pcs) / levelling feet (pcs)	0 / 2
	Sub lids / inner doors (pcs)	no
	Reversible door(s)	no
Fixed shelves (pcs) / adjustable shelves (pcs)	0 / 0	
Max. no. of shelves (pcs) / recommended max. no. of shelves (pcs)	0 / 0	
Max. load per shelf (kg)	0 / 0	
Total capacity of 50 mm boxes 9x9 dividers (pcs)	30	
Total capacity of 75 mm boxes 9x9 dividers (pcs)	18	
Total capacity of 96 mm boxes 9x9 dividers (pcs)	12	
Refrigeration & cabinet	Number of compressors	1
	Refrigerant	Nature R
	Interior cabinet material	stainless steel
	Exterior cabinet material	electrogalvanized steel
	Colour (exterior cabinet)	white
	Foam type	polyurethane
VIP vacuum insulated panels	yes	
Shipping	Shipping weight (KG)	108
	Shipping dimensions WxDxH (cm)	83x75x103
	Shipping volume (m ³)	0,64

Safety data sheet

Nature-R 2

Version 1.0

Effective date: 10-08-2020

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier

Trade name: Nature-R 2.

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

Product use: Refrigerant.

1.3 Details of the Supplier of the safety data sheet:

Company: Arctiko A/S
Oddesundvej
DK 6715 Esbjerg N
Denmark
Tel.: +45 70 20 03 28
Fax: +45 70 20 03 29

Contact: info@arctiko.com

1.4 Emergency telephone number: +45 82 12 12 12

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture according to CLP no. 1272/2008.

Flam. Gas 1; H220, STOT SE 3; H336.

2.2 Label elements CLP no. 1272/2008:

Hazard pictograms:



Signal word:

Danger

Contains: Ethylene.

Hazard statements:

H220 Extremely flammable gas.

H336 May cause drowsiness or dizziness.

Precautionary statements:

General:

-

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Prevention:

P210 Keep away from heat/sparks/open flames/hot surfaces – No smoking.

P243 Take action to prevent static discharges.

Response:

P301 + P315 IF SWALLOWED: Get immediate medical advice/attention.

Storage:

P403 Store in a well ventilated place.

Disposal:

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Additional information:

-

2.3 Other hazards:

May cause frostbite if in contact with skin.

The product does not meet the criteria for PBT or vPvB.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance:

The product is a mixture.

3.2 Mixture:

CAS/EC-no.	REACH-no.	Name	Content %	Classification CLP
74-85-1 / 200-815-3	-	Ethylene	50-90	Flam. Gas 1; H220 Press Gas, STOT SE 3; H336.
106-97-8 / 203-448-7	-	Butane	10-50	Flam. Gas 1; H220 Press Gas,
74-82-8 / 200-812-7	-	Methane	5-20	Flam. Gas 1; H220 Press Gas,

See full text of H-phrases in section 16. Occupational limits are listed in section 8, if these are available.

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures:

General information:

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor, if in doubt about the injured person's condition or if the symptoms continue. First aider must be aware of own safety.

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- Inhalation:** Move injured person to fresh air (use fresh air-supplied respirator when entering areas with high concentrations). Keep the person calm. Call a doctor. If breathing stops give artificial respiration.
- Skin contact:** In case of frostbite, rinse immediately with plenty of lukewarm water. Seek medical attention.
- Eye contact:** In case of contact with substance, immediately flush eyes with running water for at least 15 minutes. Remove contact lenses. Get medical advice/attention.
- Ingestion:** Get medical attention immediately, bring this safety data sheet with you.
- Burns:** Flush with water until the pain stops. Clothes that are not stuck to the skin, are removed from the burned area during rinsing. If medical treatment is needed, then continue rinsing until a doctor takes over treatment.

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

High concentrations may cause suffocation. The symptoms include any failing consciousness without the victim noticing. Low concentrations have an anesthetic effect. Symptoms include dizziness, headache, nausea and inability to concentrate. Skin and eye contact may cause frostbite.

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

In case of unconsciousness: Call a doctor or ambulance immediately. Show this safety data sheet to doctor.

SECTION 5. FIRE FIGHTING MEASURES

5.1 Extinguishing media: All known extinguishing agents can be used, except water jet.

Unsuitable extinguishing media:

Water jets should not be used, since they can spread the fire.

5.2 Special hazards arising from the substance or mixture:

Extremely flammable gas.
Risk of explosion of the container when heating and in case of fire. Avoid inhalation of flue gases. Incomplete combustion can form carbon monoxide.

5.3 Advice for firefighters:

Wear self-contained breathing apparatus and protective clothing to prevent contact.

Special precautions:

Turn off the gas outlet if possible. Or if possible and without risk, remove containers from the fire area.

Walk away from the container and spray with water from a covered position. Burning gas leaks must only be extinguished in an emergency case, if there is a risk of gas explosion. Extinguish all other fires. Do not spray water on the container itself in the event of a gas spill. Instead, spray on the surroundings from a protected position to limit the fire.

SECTION 6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures:**

Wear protective suit. Use fresh air-supplied respirators when entering the room, unless it is documented to be safe to enter.
Evacuate the area. Provide adequate ventilation. Remove all sources of ignition.

6.2 Environmental precautions:

Avoid discharge to lakes, streams, sewers, etc.
Stop the spill if it can be done without risk.

6.3 Methods and material for containment and cleaning up:

Put leaky containers in specially marked containers. If possible, stop the spill. The product evaporates. Provide adequate ventilation.
If possible, spray water mist over the vapors, which reduces the risk of explosion. Remove all sources of ignition, use only non-sparking equipment.

6.4 Reference to other sections:

Not relevant.

SECTION 7. HANDLING AND STORAGE**7.1 Precautions for safe handling:**

Avoid inhalation and contact with skin and eyes. Keep away from sources of ignition, including electrostatic discharge. Make sure the equipment is ground. Avoid sucking water into the container. Rinse the system for air (flush the piping system) before supplying the gas. Avoid backflow into the container. Use only well-defined equipment, suitable for the product at its pressure and temperature.

7.2 Conditions for safe storage, including any incompatibilities:

Store away from flammable gases and substances. Keep the bottle temperature below 50°C and store the container in a well-ventilated place. Container must be placed so that it cannot tip over or be hit.

7.3 Specific end use(s):

This product should only be used for applications described in section 1.2

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters - Occupational exposure limits EH-40 (Great Britain) 2019:**

CAS-no:	Name:	Limits:
106-97-8	Butane	Long-term value: 1450 mg/m ³ , 600 ppm Short-term: 1810 mg/m ³ , 750 ppm

DNEL / PNEC:

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8.2 Exposure controls:

Appropriate technical measures:

Airborne concentrations must be kept as low as possible. Use for example an exhaust system if the normal air flow in the work room is not sufficient.

General information / Hygiene measures:

Smoking, consumption of food or liquid, and storage of tobacco, food or liquid, are not allowed in the workroom. Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face. Avoid all contact with the gas. Do not breathe gas/vapor.

Personal protective equipment:

Only CE-marked personal protection equipment should be used.

Respiratory protection:

In case of leaks, use fresh air-supplied respirators.

Hand,- skin protection:

Insulating protective gloves and protective clothing, must be worn if there is a risk of liquid splashing.

Eye protection:

Wear tightly safety goggles, if risk of contact. EN 166.

Measures to avoid environmental exposure:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance: Liquid gas	Color: Colorless	Odor: Sweet*	PH: Not relevant	Viscosity 20°C: No data
Flashpoint: -100°C - ethylene	Boiling point: -103°C - ethylene	Vapor pressure: Not relevant	Density 20°C: 0,98 – ethylene (water=1)	Melting/freezing point: -169°C - ethylene
Ignition: 425°C - ethylene	Odor threshold: 186 ppm - ethylene	Explosion limits: 2,4-36 vol. %	Solubility in water: Insoluble	

*At low concentrations it might be difficult to detect the gas, due to the faint odor.

9.2 Other information:

None.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity:

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability:

May degrade/decompose violently at high temperatures and/or pressures, or in the presence of a catalyst.

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10.3 Possibility of hazardous reactions:

Vapors may form explosive mixtures with air. Gases/vapors are heavier than air and may accumulate in closed spaces, especially on the ground and in lower areas. The gas can move over large distances and ignite. May react violently with oxidizing agents. Spills can crack/affect building materials.

10.4 Conditions to avoid: Avoid heating and all sources of ignition.

10.5 Incompatible materials: Keep away from oxidizing agents.

10.6 Hazardous decomposition products:

Incomplete combustion can form carbon monoxide.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological effects:

Acute toxicity: Not classified.

Skin corrosion/irritation: Not classified.

Serious eye damage/irritation: Causes serious eye irritation.

Respiratory or skin sensitization: Not classified.

Germ cell mutagenicity: Not classified.

Carcinogenicity: Not classified.

Reproductive toxicity: Not classified.

Specific target organ toxicity - single exposure: May cause drowsiness or dizziness.

Specific target organ toxicity – repeated exposure: Not classified.

Aspiration hazard: Not classified.

Additional Information: Probable routes of exposure:
Skin, eyes, inhalation.

Inhalation:

High concentrations can cause suffocation. The symptoms include any failing consciousness without the victim noticing. Low concentrations have an anesthetic effect.

Symptoms include dizziness, headache, nausea and inability to concentrate.

Skin contact:

May cause frostbite.

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Eye contact
May cause frostbite.

Ingestion:
Not likely.

Long-term effects:
None known.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity: Not classified as hazardous to the environment.

12.2 Persistence and degradability:
Evaporates quickly.

12.3 Bioaccumulative potential:
No potential known.

12.4 Mobility in soil: No further relevant information available.

12.5 Result of PBT and vPvB assessment:
The product does not meet the criteria for PBT or vPvB.

12.6 Other adverse effects: Avoid release to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:
Do not blow off gas in places where there is a risk of explosive mixtures with the air. Residual gas should pass a suitable burner with flame arrestor. Do not divert to places where accumulation can be dangerous. Waste and residues are disposed of in accordance with the municipality's waste regulations. Please note that it is the end user's responsibility to assign the correct waste code.
Option:

EWC-code: 14 06 02* other halogenated solvents and solvent mixtures.

Contaminated packing: Empty containers and containers with residual content, are returned to the supplier. Dispose of in accordance with local regulations.

SECTION 14. TRANSPORT INFORMATION

This product is classified as dangerous to transport.

	ADR/RID	IMDG/IMO
14.1 UN number	1965	1965

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14.2 UN proper shipping name	LIQUEFIED PETROLEUM GASES, N.O.S. (Ethylene, Butane, Methane)	LIQUEFIED PETROLEUM GASES, N.O.S. (Ethylene, Butane, Methane)
14.3 Transport hazard class(es)	2 (2F – 2.1)	2 (2F – 2.1)
14.4 Packing group	-	-
14.5 Environmental hazards – MP EmS:	No F-D, S-U	No F-D, S-U
Other information	LQ: - TUNNEL: B/D	LQ: - TUNNEL: B/D

14.6 Special precautions for user:

Avoid transport with vehicles where the load is not separated from the driver.

Make sure the driver knows the possible risks of the load and the precautions in case of emergency or an accident.

Before transport:

- Make sure that the containers are clamped.
- Provide adequate ventilation.
- Compliance with given regulations.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Not applicable.

SECTION 15. REGULATORY INFORMATION

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

Sources:

Pressure Equipment (Amendment) Regulations 2011. Chemicals (Hazard Information and Packaging for Supply) Regulations 2009. Control of Substances Hazardous to Health Regulations 2002 (as amended). Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997. Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (as amended). Personal Protective Equipment Regulations 2002. Personal Protective Equipment at Work Regulations 1992. Hazardous Waste (England and Wales) Regulations 2005(as amended). EC regulation 1907/2006 (REACH) Directive 2000/532/EC. Seveso directive: 96/82/EC. EU 830/2015. CLP 1272/2008.

Additional information:

People under the age of 18 must not be exposed to this product cf. Council Directive 94/33/EC.

15.2 Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

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SECTION 16. OTHER INFORMATION

Full text of H-phrases as mentioned in section 3:

H220 Extremely flammable gas.

H336 May cause drowsiness or dizziness.

Additional information:

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Validated by:

www.am-gruppen.dk
