

Traceability and control of biological samples, pharmaceutical products and sensitive material



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Improve control and traceability during the transport of sensitive material with Groenlandia Tech's passive cold smart cooler: Nuuk

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1. Nuuk: the passive cold smart cooler

Nuuk is a passive cold smart cooler that reports real-time data directly to Groenlandia Tech's cloud platform thanks to its integrated SIM card.

Nuuk is designed to transport products or samples that are part of a highly regulated sector with demanding requirements, optimizing the logistics process and minimizing the number of incidents during the transport and distribution.





Provides superior control over samples


Reduces costs of cold chain process


Decreases incidents during transportation


Avoids losses during laboratories testing

 Made of ARPRO Expanded Polypropylene.
Empty weight of 2.9 Kg
Capacity of 31 Lt


 Passive cooling ranges from 2°C to 8°C and 10°C to 23°C.

 Access control to the interior through a locking system via RFID

 Real-time temperature monitoring and reporting to Groenlandia Tech's Cloud platform.

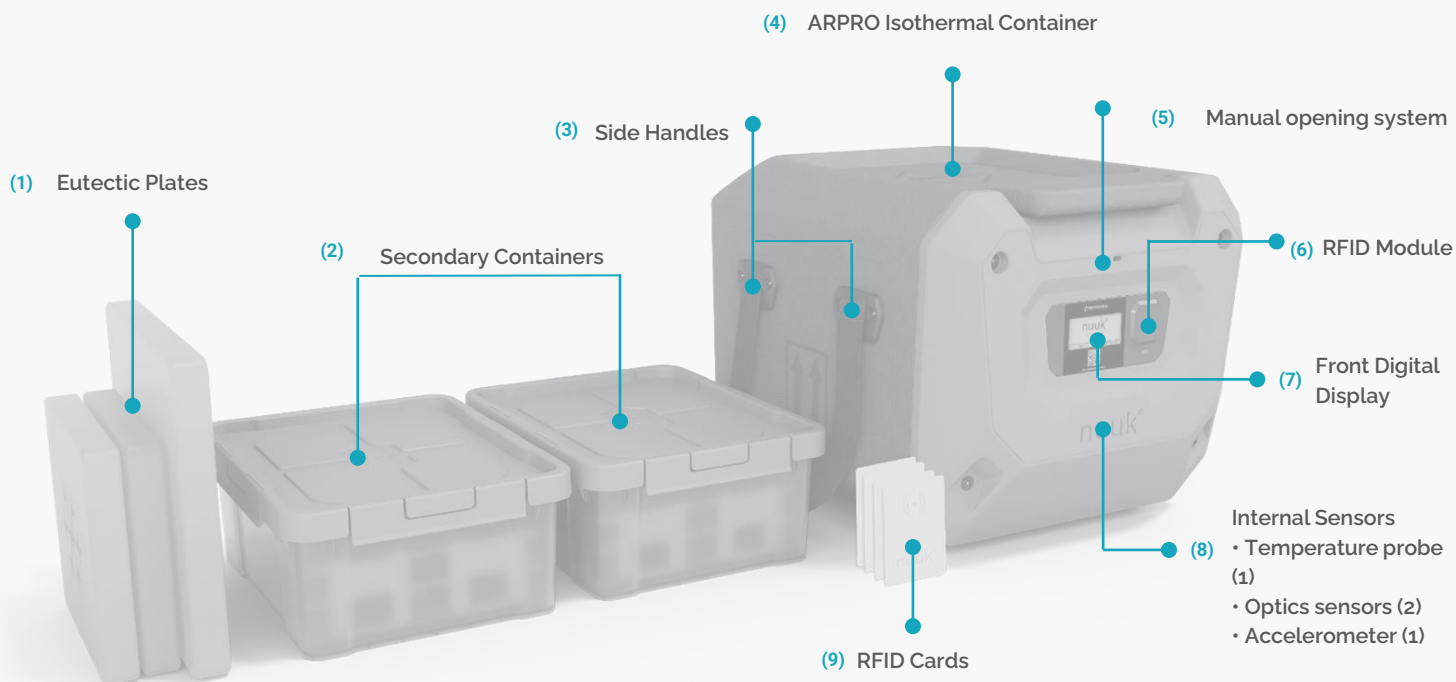
 Detection and alarm of impacts that Nuuk may receive during the course of the journey.

 Real-time traceability of the entire route

 Optical sensors to detect the presence of secondary containers

 According to UN-3373.

2. Nuuk Components



- | | | |
|-----------|-----------------------------------|--|
| 1. | Eutectic Plates | Eutectic plates preserve different temperature ranges between 2°C to 8°C and 10°C to 23°C for minimum periods of 24 hours. |
| 2. | Secondary Containers | (2) Secondary containers with internal capacity of 6.65 Lt: Up to 240 blood tubes, 200 pharmaceutical vials |
| 3. | Side Handles | Side handles on each side of Nuuk as a carrying system |
| 4. | ARPRO Isothermal Container | Isothermal container made of ARPO Expanded Polypropylene (EPP) |
| 5. | Forced Opening System | Opening system for emergency cases or lost RFID cards |
| 6. | RFID Module | RFID card reader to lock and unlock the Nuuk lid. |
| 7. | Front Digital Display | Composed of liquid ink, it displays all the information generated by Nuuk and the visual alerts derived from incidents during the route. |
| 8. | Internal Sensors | (2) Optical Sensors, (1) Temperature Probe and (1) Accelerometer. |
| 9. | RFID Cards | Personalized RFID cards for the personnel responsible for handling the samples and products. |

3. Groenlandia Tech Cloud platform

The cloud platform records all the data and allows for real time tracking and analysis once it has arrived via GPRS connection.

The cloud platform is accessible to all agents involved in the transport process, origin centers, destination centers, logistics, national health services, management software.

Registered data



Incident detection during transport



Time and place of origin and destination



Temperature at which the content is kept



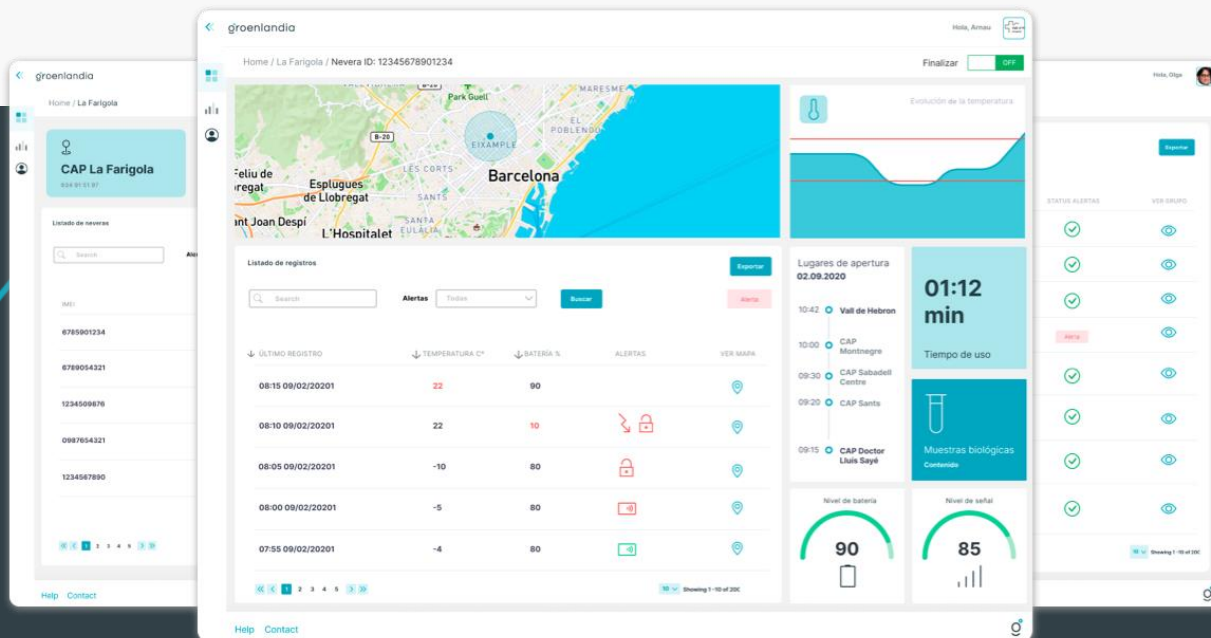
Location and duration of transport



Type of content



Battery level



Customizable Alert System



Battery



Incident reporting



Nuuk Blocking



RFID Cards use



Temperature

4. Product certificates and accreditations

Groenlandia Tech's mission is to offer the maximum level of security in all its products. The Nuuk cooler has been designed and certified according to the UN-3373 regulation for transport of biological substances Category B.



**BIOLOGICAL SUBSTANCE
CATEGORY B**

Packaging specially designed for biological substances **CATEGORY B - (UN3373)**. Outer packaging with drop tests and secondary inner container with pressure tests of 95 Kpa, according to IATA 650 instructions and according to ADR P650 instructions.



Tests and certificates for compliance with ADR Packing Instruction P650 for the transport of biological substances of category B.



5. Markets and uses

Clinical analysis laboratories

Nuuk guarantees the preservation of biological samples in optimal conditions during transport from the extraction centers to the analysis laboratories, providing doctors and clinical analysis personnel total visibility of the sample cold chain in real time.



Pharmaceuticals of thermolabile medicaments

Nuuk is designed to transport products that are part of a highly regulated sector with demanding requirements, optimizing the logistics process and minimizing the number of incidents during the most delicate stage of the cold chain; transport and distribution of thermolabile medicaments.

Food and environmental safety

The lack of visibility throughout the cold chain makes it difficult for sensitive foods to reach the final consumer in optimal conditions, a break of the cold chain implies a significant economic impact for suppliers. Nuuk guarantees the traceability of sensitive foods, reducing unproductive stocks and large losses throughout the production and logistics chain.



Judicial Custody material

The chain of custody is the most delicate point of judicial investigations. Nuuk preserves the integrity of samples, providing to the material and chain of custody reliability and preservation for analysis.

6. Environmental responsibility

Groenlandia Tech's DNA is made up of innovation and sustainability from the moment of our foundation.

Reuse of material for product production

High product durability

Sustainable production
25% of Nuuk is recycled material

Innovation material ARPRO EPP

Environmental Product Declaration (EPP) EPD accordance with ISO 14025



EPD Benefits

- Independently verified environmental performance.
- Identification of processes with the greatest environmental impact.
- Identification of ways to reduce the carbon footprint.

**Recycling policy for the treatment of non-skillful products.*



7. Nuuk data sheet

Standards	"B" CATEGORY DEVICE UN 3373 / ADR 2014 - P650
Dimensions / weight / capacity	
External measurements (W x L x H)	468 x 437.5 x 359 mm
Internal measurements (W x L x H)	294 x 283 x 283 mm
Empty weight	2.9 kg
Liters	31 L
Capacity	
2 secondary containers included	Up to 240 samples
External measurements (W x L x H)	320.2 x 265.4 x 134 mm
Internal measurements (W x L x H)	271.3 x 216.3 x 108 mm
Weight	945 g
Material	PPE - Transparent polypropylene
Material	
Construction material	PPE (thermal insulation and inert to chemicals) Expanded Polypropylene
Protection	
IK (impact level)	IK6
IP (sealing level)	IP54 (cooler) IP65 (secondary containers)
Cooling	
Cold accumulators	Including 2 cold plates (200 x 200 x 30 mm) or 6 cold plates (220 x 148 x 20 mm) according to desired temperature range.
Temperature range	10°C ... 23°C / 2°C ... 8°C
Duration of temperature range	up to 24 hours (summer environment) up to 72 hours (winter environment)
Sensors	
Temperature	PT-100
Location	GPS
Load	Cargo presence detector
Impact	Impact detector
Transport	
Handles	Elastic and retractable nylon handles
Stackable	Yes
Security	
Security locking system	Electromechanical locking
Access	RFiD + NFC cards and mobile APP
Connectivity	
Communications	BLE + GPRS SIM card 2G & 4G
Display	
Type	Electronic ink display
Data on the screen	Temperature, battery, cellular and GPS coverage, warnings and identifiers
Energy and battery	
Energy	220v 50-60Hz
Battery	Lithium 5V - 3100mA, rechargeable (1000mA/h)
Battery Life	Autonomy up to 7 days. Daily use between 4-5h
Data	
Data and device management	Private Dashboard for data and device management + API REST



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