CIBESMED

LABORATORY AND MEDICAL SUPPLIES
PACKAGING SOLUTIONS

H-BIN BIOTRANSPORT

Solutions for the safe handling of biological samples

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Introduction

Thanks to our 20-year experience in the healthcare, we developed the **H-BIN BIOTRANSPORT product line, a complete solution for the safe handling of biological samples** for laboratory testing. Our aim is to improve not only the **safety of healthcare workers and patients**, but also the **quality and efficiency of the healthcare system**, with a **better allocation of resources** and thus the **reduction of costs**.

The H-BIN BIOTRANSPORT product line is composed of:

- **SECONDARY CONTAINERS**
  - ✓ Airtight ADR approved secondary containers
  - ✓ Water and airtight HDPE bags
  - ✓ Containers for ABG Test and Cryglobulins test samples
  - ✓ Trays for test tubes and urine cups
- **ISOTHERMAL TERTIARY CONTAINERS**
  - ✓ Isothermal tertiary containers for medium-distance transport
  - ✓ Combined isothermal containers for long-distance transport
  - ✓ Temperature stabilizers (+4-8°C, +22°C, -30°C) to be used along with the isothermal tertiary containers
- **RFID TRACKING SYSTEMS**
  - ✓ RFID tracking system of single test tubes
  - ✓ RFID tracking system for biological material

BIO 01P-02S-03M-04L: Secondary containers for the transport of biological samples

Compliance

- ✓ **UN 3373**
- ✓ **EC Directive – CEE n. 679 26-11-1990**
- ✓ **UNI EN 829/98** (falling trial)
- ✓ **A.D.R.** (European Agreement concerning the International Carriage of Dangerous Goods by Road) – Packaging Instruction P650
- ✓ **I.M.D.G.** (International maritime dangerous goods)

Sizes Available

	DIMENSIONS	WEIGHT	CAPACITY
H-BIN BIO 01P	242x169x155 mm	720 g	60 ⌀13mm tubes/ 40 tubes ⌀ 16 mm
H-BIN BIO 02S	305x245x155 mm	1080 g	120 ⌀13mm tubes/ 80 tubes ⌀ 16 mm
H-BIN BIO 03M	390x230x173mm	1470 g	180 ⌀13mm tubes/ 120 tubes ⌀ 16 mm
H-BIN BIO 04L	500x285x225 mm	2610 g	300 ⌀13mm tubes/ 200 tubes ⌀ 16 mm

Features

Body

- ✓ Completely smooth surface
- ✓ Rounded edges
- ✓ Transparent heavy-duty polycarbonate

Cover

- ✓ Airtight silicone seal
- ✓ Transparent heavy-duty polycarbonate

Tray

- ✓ Designed to carry documents
- ✓ Transparent heavy-duty polycarbonate

Absorbent Tissue

- ✓ Made of polypropylene fibre
- ✓ Yellow coloured for high visibility
- ✓ High absorption capacity

Autoclave	H-BIN TFA can be autoclaved at max 121°C
Latex Presence	All components are Latex Free

Benefits

- ✓ Made of heavy-duty polycarbonate, transparent to easily spot any accidental spills
- ✓ Airtight seal
- ✓ Stainless steel safety hooks
- ✓ Supplied already assembled

BIO BAGS: For the safe handling of biological samples

Features

- ✓ Made of high quality, transparent HDPE
- ✓ Wide tamper-proof (VOID) sealing band
- ✓ Handle for transport (**BIO BAG 04 only**)
- ✓ Instructions of use printed on the bag
- ✓ Hazard symbols required by the law
- ✓ Customization available (minimum quantity required)

Benefits

- ✓ Transparent HDPE to easily spot any accidental spills
- ✓ Water and airtight seal thanks to the patented technology Debasafe, with double seam
- ✓ Extremely resistant to tears
- ✓ Identification and tracking possible with univocal numeration in form of barcode

Compliance

- ✓ **EU Directive – CEE n. 679 26-11-1990**
- ✓ **A.D.R. – Instructions of use P650**
- ✓ **I.M.D.G**. (International maritime dangerous goods)
- ✓ **BAM CERTIFICATION for watertight seal**

Sizes Available

- ✓ **BIO BAG 01:** 195×310 mm
- ✓ **BIO BAG 02:** 225×410 mm
- ✓ **BIO BAG 04:** 300×450 mm

BIO 101-102-103: Isothermal tertiary containers for the transport of biological samples

Features

- ✓ Designed to be used along with the secondary containers BIO 01P/02S/03M/04L
- ✓ **Isothermal lining made of aluminium and expanded polyethylene**
- ✓ **Suitable for medium-distance transport**
- ✓ External pocket for documents
- ✓ **Specific compartment** on the lid for **cooling plates**
- ✓ Handles for transport

Benefits

- ✓ **Light and easy to handle**
- ✓ **Optional use of cooling plates for further thermal insulation**
- ✓ Latex free
- ✓ Customization available

Sizes Available

	DIMENSIONS	WEIGHT	CAPACITY
BIO 101	280x200x190 mm	320 g	1 Container BIO 01P (+200 ml cooling plate)
BIO 102	280x260x190 mm	510 g	1 Container BIO 02S (+400 ml cooling plate)
BIO 103	410x260x210 mm	590 g	1 Container BIO 03M (+800 ml cooling plate)
BIO 104	540x320x260 mm	780 g	1 Container BIO 04L (+1000 ml cooling plate)

BIO 04PP-06PP: Isothermal tertiary containers for the transport of biological samples

Features

- ✓ Combined isothermal container composed of
  - Expanded propylene container (inside)
  - Expanded polyethylene bag (outside)
- ✓ Specific compartment in the lid to insert eutectic plates or temperature stabilizers
- ✓ Snap fasteners
- ✓ External pocket for ID badges (Barcode/RFID)
- ✓ Handles and shoulder strap for easy handling

Combined solution

- ✓ Designed to be used along with the secondary containers BIO 01P/02S/03M/04L and the different sizes of BIO BAGS

RFID Technology

✓ It is possible to insert a data-logger equipped with RFID technology to measure and track the temperature during transport

Controlled temperature transport

✓ By using temperature stabilizers with PCM technology, these containers allow thecontrolled temperature transport of chemotherapy drugs and preparations (4-8 °C; 22°C; -30°C)

Benefits

✓ Highly isothermal materials able to keep the temperature stable for several hours
✓ Light and easy to handle

Sizes available

	H-BIN BIO 04 PP	H-BIN BIO 06 PP
Dimensions (inside)	395x245x190 mm	500 x 300 x 250 mm
Dimensions (outside)	445 x 320 x 290 mm	620 x 400 x 350 mm
Weight	1.60 Kg	2.90 Kg
Capacity	1 Container BIO 03M	1 Container BIO 04L

TEMPERATURE STABILIZERS

for the controlled temperature transport of blood bags and blood components

To fulfil all the requirements of controlled temperature transport of thermosensitive products, M&G recommends the use of temperature stabilizers: plates made of HDPE and filled with ***Phase Change Material***, a substance which, melting and solidifying at a certain temperature, is capable of storing and releasing large amounts of heat, thus maintaining the **temperature at a stable level for a long period of time.**

This cutting edge passive cooling system represents an **excellent solution to replace electric portable refrigerators and traditional eutectic plates that need to be frozen at a temperature lower than 0°C and cannot be placed in direct contact with the material transported.**

Temperature stabilizers must be **preconditioned at the prescribed temperature** and to optimise their performance, they must be **inserted in the container in direct contact with the products** to be transported. When combining the temperature stabilizers with H-BIN BIOTRANSPORT isothermal containers, the temperature during transport is maintained stable for several hours and even days.

Benefits

- ✓ No risk of overheating or overcooling
- ✓ The temperature is maintained stable for several hours
- ✓ 3 ranges of temperatures available: 4°C; 22°C; -30°C

Quantity of material

- ✓ The larger the quantity of material to be transported inside the isothermal container, the lower the number of temperature stabilizers that must be used. When the H-BIN BIOTRANSPORT containers are completely filled, their ability to maintain the temperature within the prescribed ranges is improved.

External temperature

- ✓ The greater the difference between the temperature outside and inside the container, the higher the number of temperature stabilizers that must be used.

Duration

- ✓ The longer the transport time, the higher the number of temperature stabilizers that must be used.

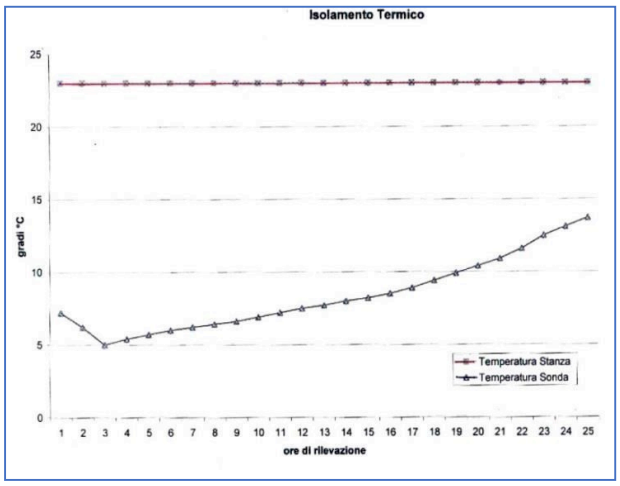
Versions Available

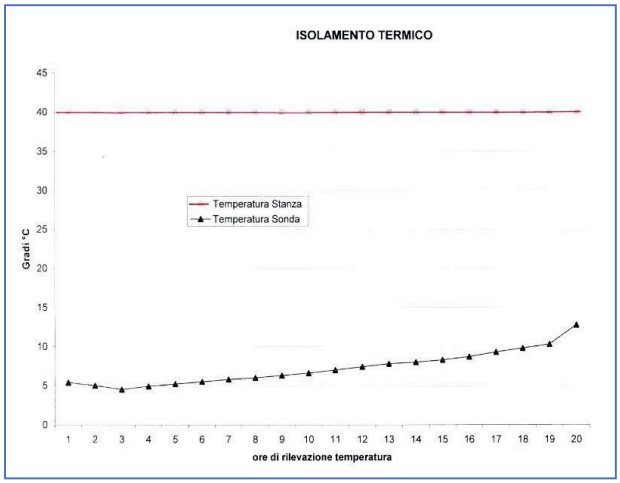
	TEMPERATURE	DIMENSIONS	WEIGHT
TS4C200	+4°C	165x88x21 mm	200 g
TS4C1000	+4°C	210x160x40 mm	1 Kg
TS22C200	+22°C	165x88x21 mm	200 g
TS22C1000	+22°C	210x160x40 mm	1 Kg
TS30C200	-30°C	165x88x21 mm	300 g
TS30C1000	-30°C	210x160x40 mm	1.5 Kg

Thermal insulation tests

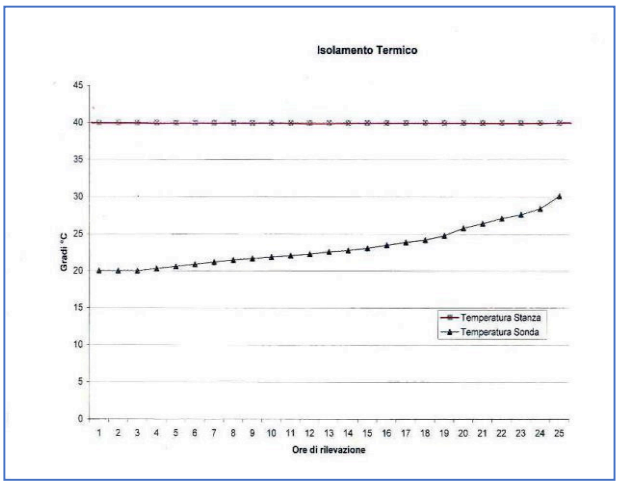
Several tests were carried out on the tertiary containers H-BIN BIOTRANSPORT 04 PP AND 06 PP, which simulated **by means of a climate chamber different external temperatures, ranging between -12°C and +40°C. T**he aim of the test was to evaluate the thermal insulation of the containers and their ability to maintain the temperature inside within the ranges of +2°C – +8°C and +20 °C – +24°C, also with the addition of temperature stabilizers.
In all the conditions simulated, the containers were able to keep the temperature at a stable level for a period of time between 14 and 17 hours.
In charge of the certification of the system (container + temperature stabilizers) was the **Laboratory SSCCP,** a special body of the Chamber of Commerce of Milan **accredited as a certification laboratory** (accreditation number SSCCP 0173) **by ACCREDIA, the Italian Accreditation Body.**

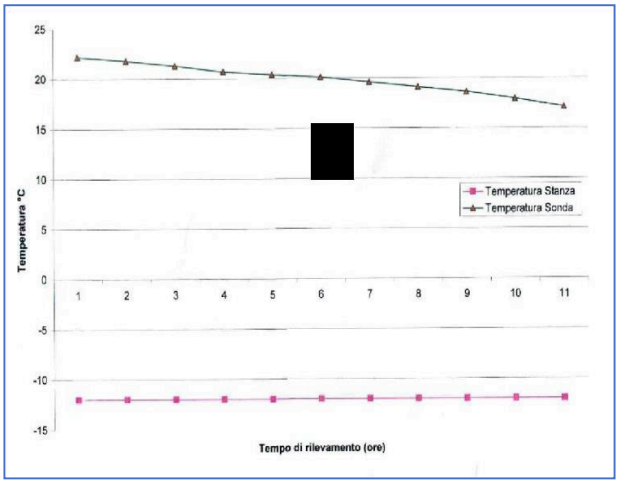
• +4°C Temperature stabilizers





- **+22°C Temperature stabilizers**





MINI BIO ISOTHERM H: container for Cryoglobulins test samples

Features

- ✓ Made of expanded polypropylene
- ✓ Designed for the transport at high temperatures with a heating pad
- ✓ The temperature is kept between 36°C and 38°C for up to 6 hours
- ✓ External case with pocket for documents available

Benefits

- ✓ Highly isothermal material
- ✓ Equipped with hooks preventing the heating pad from touching the samples
- ✓ Latex free

- ✓ **Dimensions:** 195x95x61 mm
- ✓ **Weight:** 103 g
- ✓ **Capacity:** 2 test tubes 13×75 or 2 test tubes 13×100

MINI-BIO ISOTHERM C: Container for the transport of ABG test samples

Features

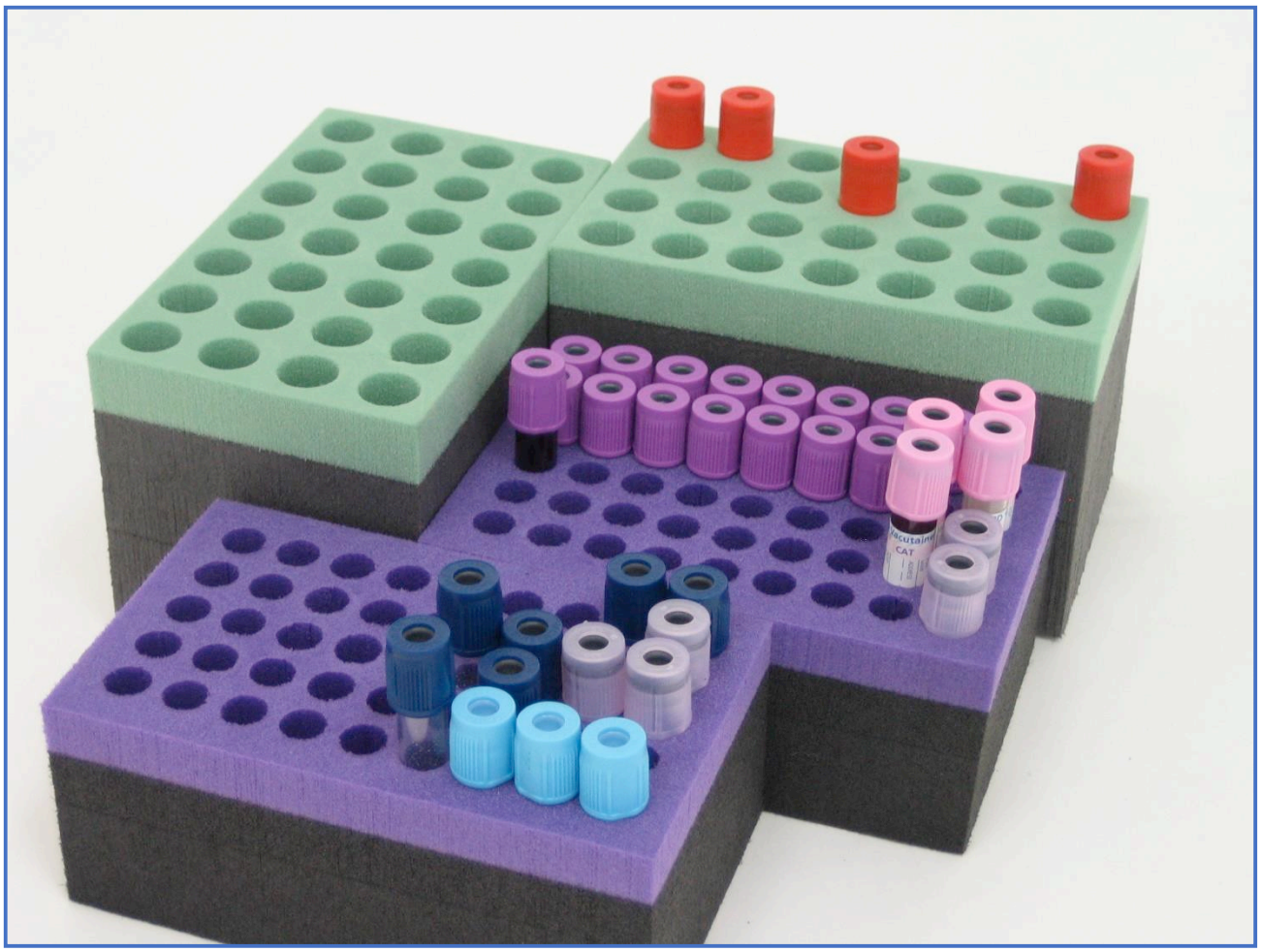
- ✓ Made of expanded polypropylene
- ✓ Designed for the transport at low temperatures
- ✓ The temperature is kept between 2°C and 8°C for up to 10 hours
- ✓ External case with pocket for documents available

Benefits

- ✓ Highly isothermal material
- ✓ No risk of condensation
- ✓ Latex free

- ✓ **Dimensions:** 195x95x61 mm
- ✓ **Weight:** 128 g
- ✓ **Capacity:** 4 tubes 13×75 or 2 tubes 13×100 or 2 syringes for critical care panel

PP 13 S – PP 17 S: Isothermal trays for test tubes



Features

- ✓ Suitable for ø 13mm and ø 16 mm test tubes
- ✓ Made of isothermal expanded polyethylene
- ✓ Modular for all secondary containers H-BIN BIOTRANSPORT.
- ✓ All components are latex free.

Sizes available

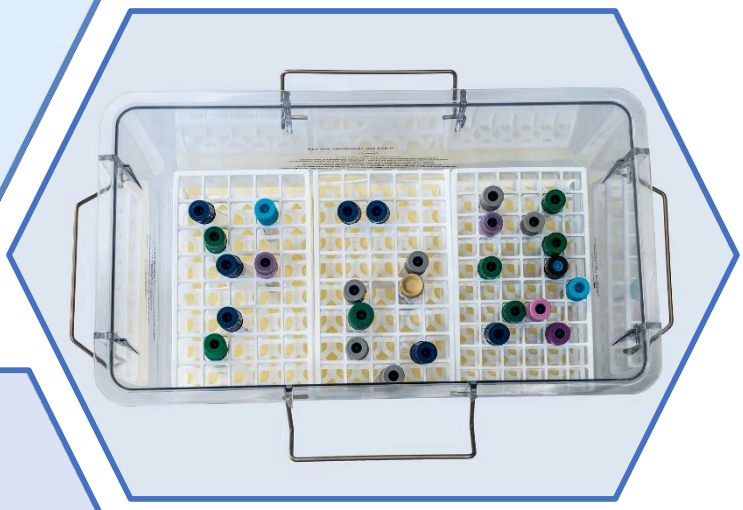
	Dimensions	Weight	Capacity
PP 13 S	160x100x65 mm	45 g	45 test tubes ø 13 mm
PP 17 S	160x100x103 mm	55 g	28 test tubes ø 16 mm

PP 13 90 - PP 13 60 - PP 17 60 - PP 17 40: Trays for test tubes

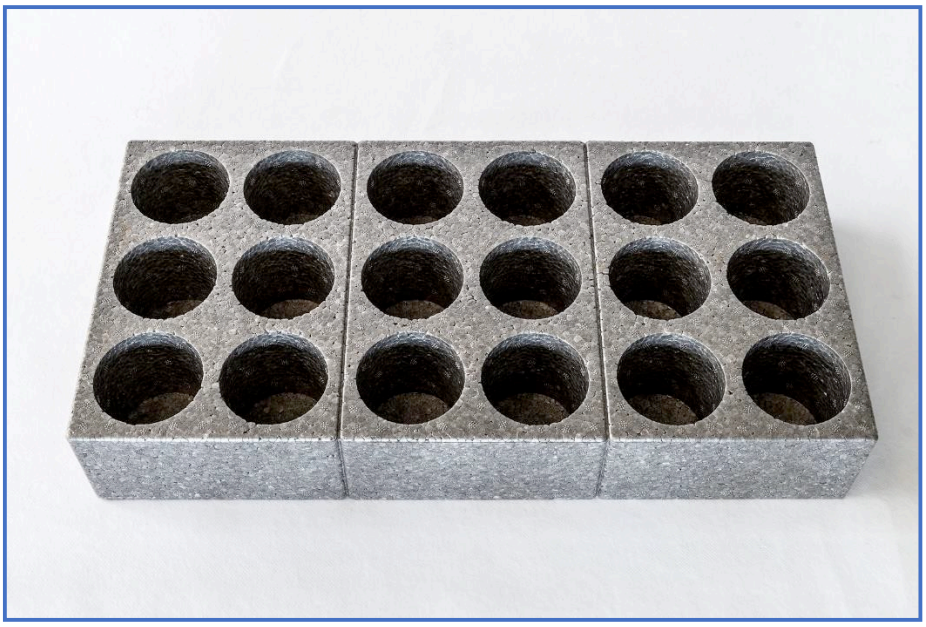
Features

- ✓ Suitable for ø 13 mm and ø 16 mm test tubes
- ✓ Made of polypropylene
- ✓ Modular for all secondary containers H-BIN BIOTRANSPORT
- ✓ All components are latex free.

Sizes available			
	Dimensions	**Weight**	**Capacity**
PP 13 60	165x100x68 mm	65 g	60 test tubes ø 13 mm
PP 13 90	244x100x68 mm	95 g	90 test tubes ø 13 mm
PP 17 40	165x100x68 mm	65 g	40 test tubes ø 16 mm
PP 17 60	244x100x68 mm	95 g	60 test tubes ø 16 mm



PU 6 – PU 18: Trays for urine collection cups



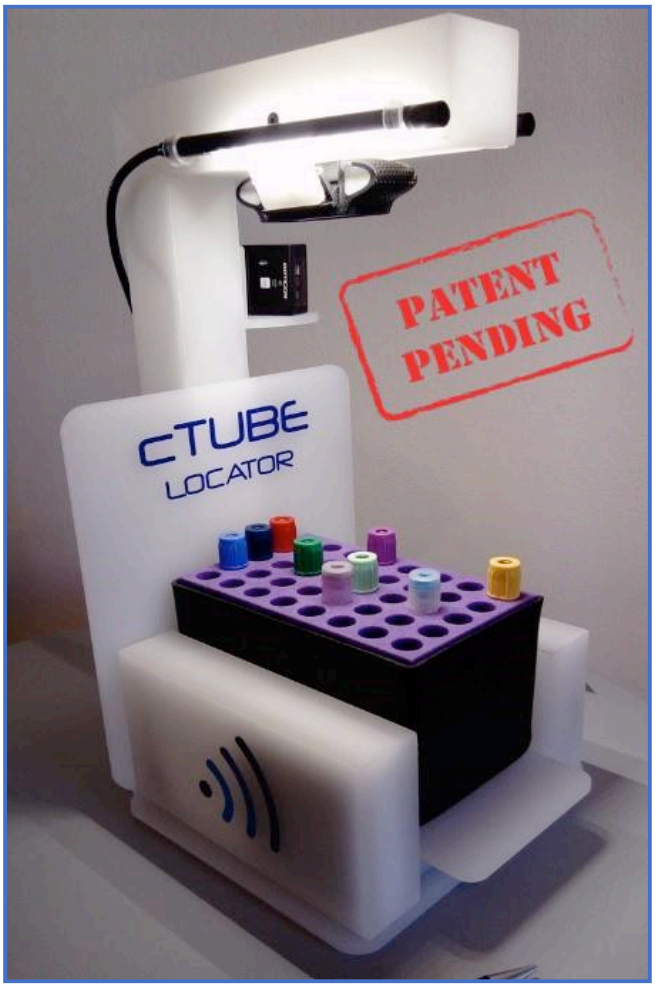
Features

- ✓ Expanded polypropylene trays for urine cups.
- ✓ Modular for all the secondary containers H-BIN Biotransport
- ✓ All components are latex free.

Sizes available

	PU 6	PU 18
Dimensions	213x140x70 mm	425x213x70 mm
Weight	55 g	65 g
Capacity	6 cups ø 60 mm	18 cups ø 60 mm

TUBE TRACE: RFID System for the monitoring and tracking of individual test tubes



How it works:

1- The test tube tray

✓ The **HBH barcode reader** scans each one of the test tubes.

✓ The **RFID tube tray** collects all the data.

2- Check-out of secondary containers and transport

✓ Insert the **tube rack into the secondary RFID containers with datalogger** tracking the temperature.

✓ All **data** are collected and **sent to the Cloud**.

✓ Insert the **secondary containers into the isothermal tertiary containers** to ensure a stable temperature during transport.

3- Check-in of the material at the laboratory

✓ Place the **tertiary container on the RFID plate/gate to download all the data.**

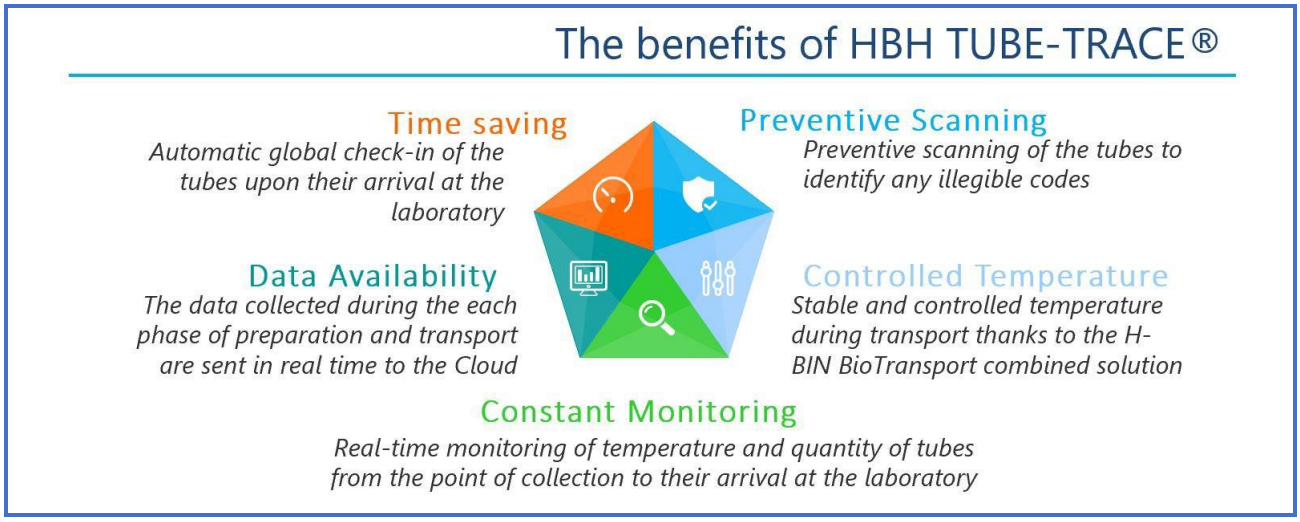
✓ The **system immediately verifies if the data correspond** to the ones put in by the centre at the starting point.

✓ A **report on the transport will be produced** and the **data uploaded** in the system through the WEB App.

The software can be interfaced directly with the management software of the laboratory, so that the tubes can be checked in automatically upon arrival.

Components

- ✓ **Device to be installed at the collection centre** (includes HBH Barcode reader and RFID reader/writer)
- ✓ **RFID Test tube tray**
- ✓ **RFID secondary container** equipped with datalogger recording temperature
- ✓ **Isothermal tertiary container** to maintain the temperature stable during transport
- ✓ **RFID plate** to be placed in the laboratory for the check in of tubes and the download of data
- ✓ **Software by M&G/Sirada** to be installed on the computers at the blood testing centre and the laboratory



BIO TRACE: RFID system for the tracking and monitoring of biological material

Features

- ✓ **Isothermal tertiary container equipped with a datalogger** tracking the thermal history of the material during transport
- ✓ **Datalogger with RFID/BLE technology**, including a **probe with low thermal intertia,** shock resistant and long service life
- ✓ **Specific smarthpone and App** to activate the datalogger, monitor the temperature and check out the materials ready for transport
- ✓ **Activation of alarms to alert of any errors** in the delivery of material and/or to signal whether the material exceeds the pre-set threshold temperature.
- ✓ **Workstation to manage the check-in of the delivered material** and interface with the dataloggers inside the containers
- ✓ **Web platform** to centrally control all activities and make all data accessible from any workstation

How it works

1. Beginning of transport session (Check-out)

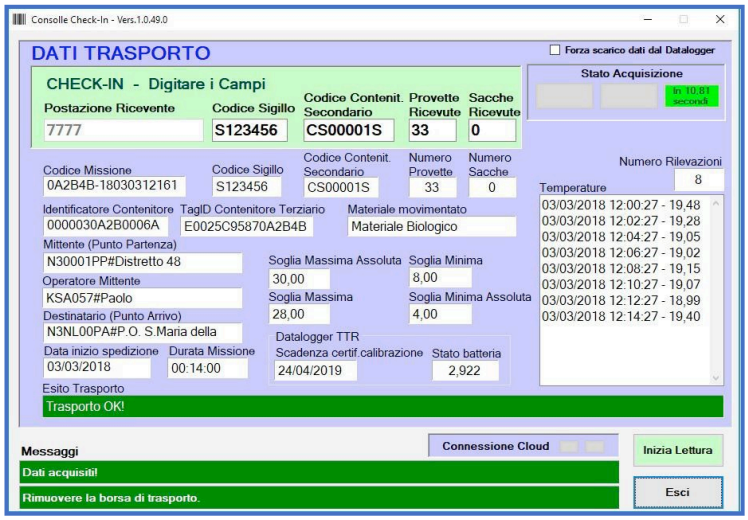
The operators collect all the transport identification data using the camera on their device (equipped with NFC/RIFID aerial and BIOTRACE APP).
By placing the smartphone on the side of the tertiary container, all the data previously collected are transferred to the datalogger and the tracking of temperature starts.

2. End of transport (Check-in)

At the delivery point, there is the workstation dedicated to the delivery of the material consisting of a computer, RFID aerial EMOBaselle and the management software Consolle.CheckIO.
To end the transport procedure, place the container nexto the the EmoBaselle aerial. All the identification and temperature data recorded during transport will be downloaded.

3. Transport data

The data collected are checked and used to produce the final report on the transport session.
Both the final report and the data are automatically transferred to the centralised database and can be retrieved using the Web Application ORMA.MB1.
By selecting the time period of the transport or its result, the complete transport data and the thermal history will be displayed in form of data and graph.



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