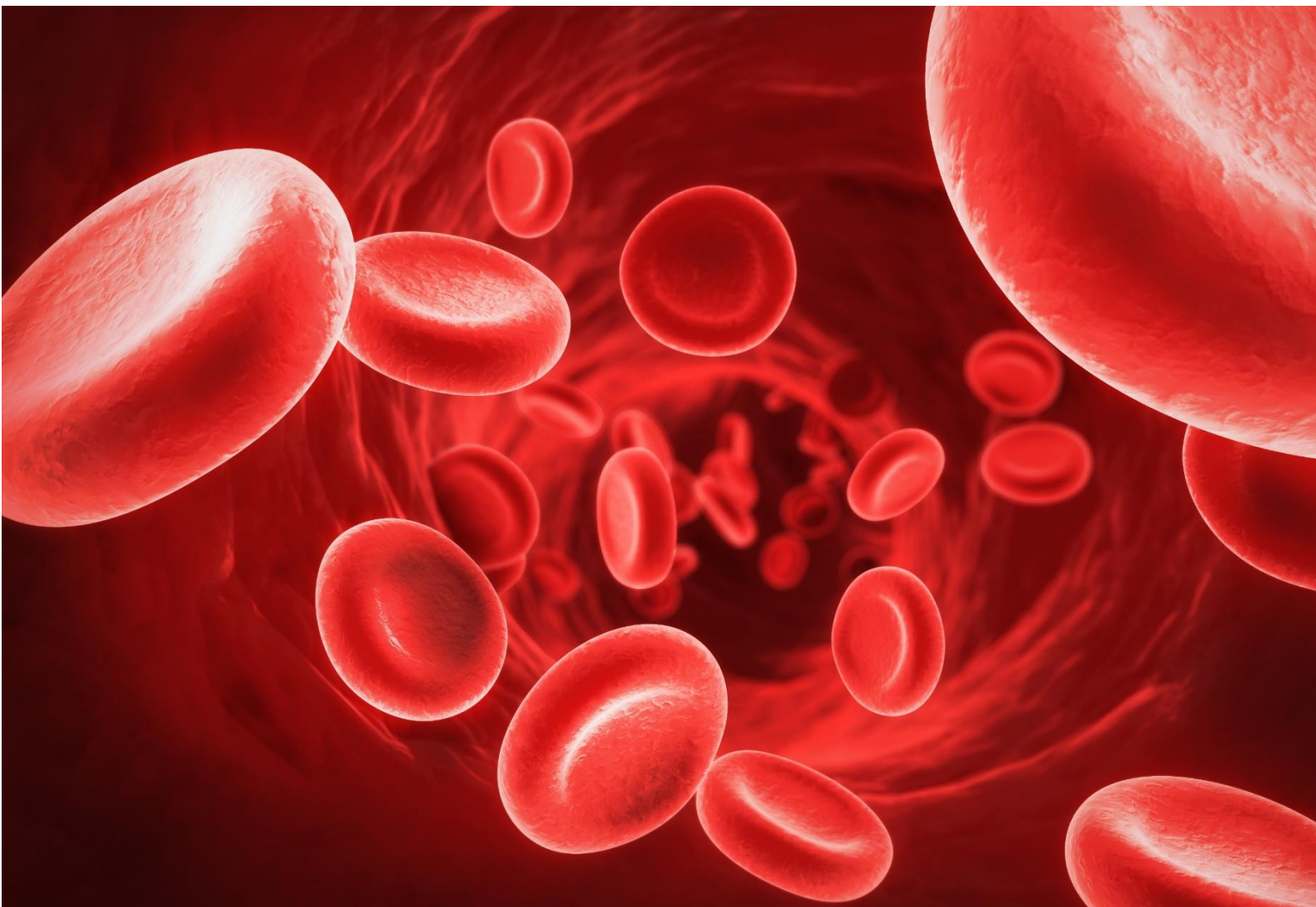


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H-BIN EMOTRANSPORT

**SOLUTIONS FOR THE SAFE HANDLING
OF BLOOD AND BLOOD COMPONENTS**



Making blood transport safer and more efficient

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Introduction

In response to the needs of Italian healthcare professionals and thanks to more than **20 years of experience in the healthcare industry**, M.&G. INT'L developed the **H-BIN EMOTRANSPORT product line: a complete solution dedicated to the handling and transport of blood and blood components** to and from blood processing and collection centres, blood banks, hospital wards, etc.

H-BIN EMOTRANSPORT products are designed to guarantee that **blood and blood components reach their destination securely and in the right conditions for testing and transfusion**, thus not only **benefiting the safety of both patients and healthcare operators**, but also **improving the quality and efficiency of healthcare procedures**.

Our products are **manufactured in Italy with high quality materials**, are **easy to use** and **in compliance with Italian laws and international standards**.

The H-BIN EMOTRANSPORT product line is composed of:

❖ ISOTHERMAL BAGS

- ✓ Combined isothermal bags for long-distance transport
- ✓ Isothermal bags for short-distance transport

❖ TEMPERATURE STABILIZERS

- ✓ Cooling elements for transport at +4°C, +22°C and -30°C

❖ SECONDARY CONTAINERS

- ✓ Polycarbonate airtight containers with isothermal lining
- ✓ Leakproof security bags made of recycled polyethylene

EMO 02PP, 03PP, 04PP, 06PP: Combined isothermal bags for long-distance transport



Features

- ✓ **Cold life of up to 22 hours**
- ✓ Composed of an **external bag and an internal box**
- ✓ Closure with snap fasteners and **holes for security seals or padlocks**
- ✓ **Compartment in the lid for cooling plates** (EMO 04PP and EMO 06PP only)
- ✓ **Tray for cooling plates** (EMO 02PP and EMO 03PP only)
- ✓ **Adjustable shoulder strap** (EMO 04PP and EMO 06PP only)
- ✓ Available with **incorporated trolley** (EMO 04PP and EMO 06PP only, optional)
- ✓ **External pocket** for ID badges
- ✓ **Customisation available upon request** (logos, writings, colours)

Temperature Monitoring

- ✓ It is possible to insert a data-logger or a thermometer with an external display to measure and monitor the temperature during transport.



Compliance

- ✓ **EMO 02PP, EMO 04PP, EMO 06PP:** Class IIa Medical Devices in compliance with 93/42/EEC Directive
- ✓ **EMO 03PP:** Class I Medical Device in compliance with Regulation (EU) 2017/745

Versatility

- ✓ **When combined with temperature stabilizers**, the bags can be used for **transporting blood components at different temperature ranges:** **+2<>+8°C** (WB; RC), **+20<>+22°C** (PRP; Platelets) and **-30°C** (FFP).

Benefits

- ✓ **Light and easy to handle**
- ✓ **Suitable for different temperature ranges**

Specifications

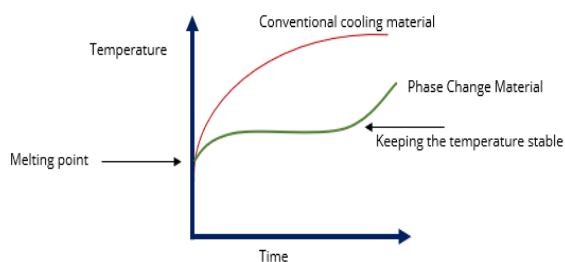
	EMO 02 PP	EMO 03 PP	EMO 04 PP	EMO 06 PP
INTERNAL DIMENSIONS (mm)	220x165x90	220x165x160	395x245x190	500x300x250
EXTERNAL DIMENSIONS (mm)	300x260x160	300x260x220	445x320x290	620x400x350
WEIGHT	700 g	0.80 Kg	1.60 Kg	3.2 Kg
CAPACITY (BLOOD BAGS)	2x 500 ml OR 4x 250 ml	4x 500 ml OR 8x 250 ml	10x 500 ml OR 25x 250 ml	22x 500 ml OR 50x 250 ml
VOLUME	3 litres	6 litres	18 litres	37.5 litres
TEMPERATURE STABILIZERS	2x200 ml	1x 650 ml	2x1000 ml	2x2000 ml

TEMPERATURE STABILIZERS

For transport at -30°C , $+4^{\circ}\text{C}$ and $+22^{\circ}\text{C}$

In order to **transport thermosensitive products correctly**, M&G recommends the use of **temperature stabilizers**: HDPE plates filled with **Phase Change Material**. **PCMs** are substances which store and release energy during their phase change. **When melting, they slowly absorb a large quantity of heat from the surrounding environment.**

Temperature stabilizers must be kept in a **freezer or refrigerator for at least 12 hours before use** – until the material inside becomes **completely solid**. Together with our isothermal bags, they ensure the **temperature during transport is stable for hours without any risks of overheating or overcooling.**



This **cutting-edge passive cooling system** is an excellent replacement for electric portable refrigerators and conventional cooling plates which cannot be placed directly in contact with blood bags.

Moreover, **temperature stabilizers** are **available for 3 different temperatures according to the type of blood component** which needs to be transported: -30°C , $+4^{\circ}\text{C}$ and $+22^{\circ}\text{C}$.



Quantity of material

- ✓ **When the quantity of material inside the bags increases, the number of temperature stabilizers required decreases. EMO transport bags perform better when they are completely full.** For example:
- 5x blood bags → 3 temperature stabilizers
 - 10x blood bags → 2 temperature stabilizers

External temperature

- ✓ **A higher number of temperature stabilizers is required when there is a significant difference between the temperature outside and inside the bag.** (e.g.: +40°C outside and +4°C inside)

Transport Duration

- ✓ **A higher number of temperature stabilizers is required for longer journeys.**

Sizes Available

TEMPERATURE	PRODUCT	DIMENSIONS	WEIGHT
+4°C	TS 04C 200	165x88x21 mm	200 g
	TS 04C 650	210x130x40 mm	720 g
	TS 04C 1000	360x210x18 mm	1.2 Kg
	TS 04C 2000	380x215x26 mm	2.3 Kg
+22°C	TS 22C 200	165x88x21 mm	200 g
	TS 22C 650	210x130x40 mm	700 g
	TS 22C 1000	360x210x18 mm	1 Kg
	TS 22C 2000	380x215x26 mm	2.2 Kg
-30°C	TS -30C 200	165x88x21 mm	300 g
	TS -30C 650	210x130x40 mm	1 Kg
	TS -30C 1000	360x210x18 mm	1.5 Kg
	TS -30C 2000	380x215x26 mm	2.8 Kg

Thermal insulation tests

Since the early phases of designing and prototyping, **several tests were carried out on EMO 04PP and 06PP** to evaluate their performances.

In charge of the certification of the system (**bags + 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.

By using a **climate chamber**, **different climatic conditions** with **temperatures ranging from -12°C to +40°C were simulated**. The aim was to test the thermal insulation of the bags and their ability to **maintain the internal temperature within the required ranges**. This was measured by a probe positioned among the blood bags (filled with water).

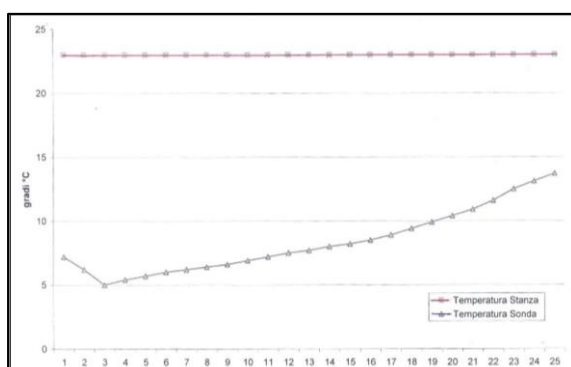
Below are some of the temperature reports from the tests.

TEST N. 1: +4°C Transport in +23°C environment

➤ MATERIAL USED:

- ✓ **1 isothermal bag EMO 04 PP**
- ✓ **2 temperature stabilizers for +4°C transport**
- ✓ **4 water-filled blood bags (450 ml) previously kept at +4°C for 48 hours**

The graph shows that **the temperature inside EMO 04 PP remained below +10°C for approximately 17 hours**.



→ Temperature outside EMO 04 PP

→ Temperature inside EMO 04 PP

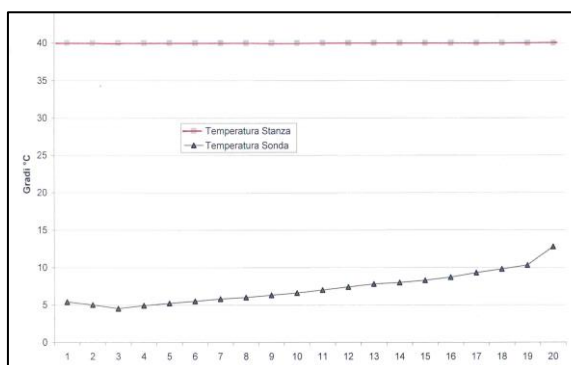
→ Hours

TEST N. 2: +4°C Transport in +40°C environment

➤ MATERIAL USED:

- ✓ 1 isothermal bag EMO 04 PP
- ✓ 2 temperature stabilizers for +4°C transport
- ✓ 4 water-filled blood bags (450 ml) previously kept at +4°C for 48 hours

The graph shows that the **temperature inside EMO 04 PP remained below +10°C for approximately 16 hours.**



→ Temperature outside EMO 04 PP

→ Temperature inside EMO 04 PP

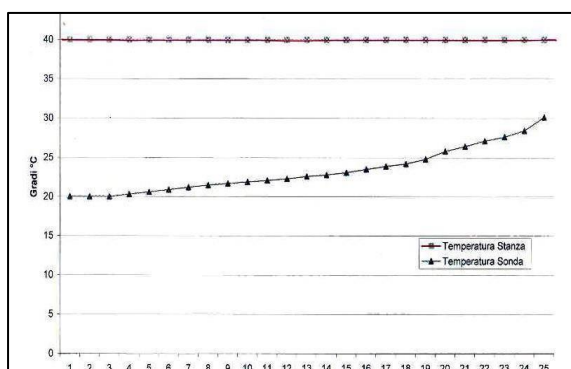
→ Hours

TEST N. 3: +22°C Transport in +40°C environment

➤ MATERIAL USED:

- ✓ 1 isothermal bag EMO 04 PP
- ✓ 2 temperature stabilizers for +22°C transport
- ✓ 4 water-filled blood bags (450 ml) previously kept at +20°C for 48 h

The graph shows that the **temperature inside EMO 04 PP remained below +24°C for approximately 17 hours.**



→ Temperature outside EMO 04 PP

→ Temperature inside EMO 04 PP

→ Hours

EMO 101, 102, 103: Isothermal bags for short- distance transport



Features

- ✓ **Insulation** made of aluminium and expanded polyethylene
- ✓ Suitable for **medium-distance** transport (3 hours)
- ✓ **Suitable** for transport up to 12 hours when combined with **secondary containers** EMO 01P, EMO 02S and EMO 03M
- ✓ External **pocket** for documents
- ✓ Specific **compartment** in the lid for cooling plates
- ✓ **Handles** for transport
- ✓ **Symbols required by law** printed on each bag



Specifications

	EMO 101	EMO 102	EMO 103
DIMENSIONS	280x200x190 mm	330x260x190 mm	410x260x210 mm
WEIGHT	420 g	630 g	810 g
CAPACITY (BLOOD BAGS)	Up to 4x 500 ml OR Up to 10x 250 ml	Up to 8x 500 ml OR Up to 24x 250 ml	Up to 13x 500 ml OR Up to 40x 250 ml
VOLUME	10 litres	16 litres	22 litres
TEMPERATURE STABILIZERS (NOT included)	1x 650ml	2x 650 ml	2x 1000 ml



Compliance

- ✓ **Class I Medical Devices (CE Marking), in compliance with Regulation (EU) 2017/745**



Benefits

- ✓ **Light and easy to carry**
- ✓ **Suitable for transport at different temperatures** according to the requirements for each blood component
- ✓ **Customization available upon request** (logos, writings, colours)



EMO 01P, 02S, 03M: Polycarbonate containers with isothermal lining



Features

- ✓ **Suitable for transport of maximum 2 hours**
- ✓ **Suitable for transport of up to 12 hours when used in combination with isothermal bags EMO 101, EMO 102 and EMO 103**
- ✓ **Removable isothermal lining**
- ✓ **Made of fall-proof polycarbonate**
- ✓ **Airtight** silicone seal
- ✓ Stainless steel **safety hooks**
- ✓ **Polycarbonate tray**



Specifications

	EMO 01P	EMO 02S	EMO 03 M
DIMENSIONS	242x169x155 mm	305x245x155 mm	390x230x173 mm
WEIGHT	750 g	1.35 Kg	1.8 Kg
CAPACITY (BLOOD BAGS)	Up to 2x 500 ml OR Up to 6x 250 ml	Up to 4x 500 ml OR Up to 10x 250 ml	Up to 6x 500 ml OR Up to 18x 250 ml
VOLUME	5 litres	10 litres	15 litres
ISOTHERMAL BAG (NOT included)	EMO 101	EMO 102	EMO 103
TEMPERATURE STABILIZER (NOT included)	1x 200 ml	2x 200 ml	3x 200 ml



Compliance

- ✓ **UNI EN 829/98** (falling trials)
- ✓ **Class I Medical Devices (CE Marking), in compliance with Regulation (EU) 2017/745**
- ✓ **A.D.R.** (European Agreement concerning the International Carriage of Dangerous Goods by Road) – **Packing Instructions P650**



Temperature Monitoring

- ✓ **It is possible to insert a data-logger or a thermometer with an external display to measure and monitor the temperature during transport.**



Benefits

- ✓ **Reduction of risks** during transport thanks to the **fall-proof material and airtight seal**
- ✓ **Service life of 10 years**
- ✓ **Autoclavable** at maximum +121°C (polycarbonate container only)
- ✓ **Customisation available** (logos, writings)

TE BAGS GREEN:

Leakproof security bags made of recycled polyethylene



Features

- ✓ Made of **recycled and recyclable (if not infected) LDPE**
- ✓ **Wide tamper-proof (VOID) sealing band**
- ✓ **Water and airtight seal**
- ✓ **Extremely resistant to tears**
- ✓ **Practical tear strip opening**, without the need of blades/sharp objects
- ✓ **Barcode and alphanumeric code for identification and tracking**
- ✓ **Transparent LDPE** to easily spot any accidental spills
- ✓ External **pocket for documents**
- ✓ **Handle** for easy carrying (TE 404004 ONLY)
- ✓ **Instructions of use** and **hazard symbols** printed on the bag



👍 Benefits

- ✓ **Reduction of contamination risks**
- ✓ **Traceability of each bag**
- ✓ **Reduction of non-recyclable waste**
- ✓ **Customization available** (minimum quantity required)

📋 Compliance

- ✓ **Regulation (EU) 2017/745 Class I Medical Devices (CE Marking), in compliance with A.D.R.** (European Agreement concerning the International Carriage of Dangerous Goods by Road) – **Packing Instructions P650**
- ✓ **Blue Angel Certificate (Ecolabel)**

📏 Sizes Available

- ✓ **TE 404001 GREEN:** 195x335 mm
- ✓ **TE 404002 GREEN:** 225x410 mm
- ✓ **TE 404003 GREEN:** 300x450 mm
- ✓ **TE 404004 GREEN:** 485x460 mm
- ✓ **TE 404005 GREEN:** 250x330 mm



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