



Your products –
reliably packed.

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Secure and flexible packaging – the world over.

EMPAC is your reliable partner for flexible intermediate bulk containers (FIBC) and foil liners for big bags. We specialise in the manufacture of intermediate bulk containers approved for the transportation of hazardous goods as well as electrostatically dischargeable FIBC and liners that meet the highest demands in terms of hygiene and safety.

With production plants in Germany and Poland, service centers in Germany, France, Poland and the US, as well as partners in Asia, amongst other places, we are well positioned to complete individual customer orders from all over the world – quickly and flexibly. EMPAC Verpackungs GmbH was founded in 1980 and became part of the NORDENIA Group in 1992. Four years later, the production company EMPAC POLSKA was founded in Starogard, Poland. On March 31st, 2012, the company left the NORDENIA Group as part of a management buyout and continued business operations with the subsidiary STARPAC as an owner-run company under the name of EMPAC GmbH.



EMPAC headquarters in Emsdetten.



Our production company EMPAC POLSKA in Starogard, Poland.

Our primary sectors:



Pharmaceuticals



Food



Chemicals

High quality, fast, individual.

As an industry innovation driver, EMPAC provides tailor-made packaging solutions for a wide range of requirements – while maintaining a consistently high level of quality. Quality you can depend on.

We welcome the most difficult challenges and overcome them to ensure maximum security in the transportation of your goods. Our in-house development lab of experienced and highly trained staff works daily on optimising our products and processes.

Countless customers value EMPAC's ability to produce packaging in small batch sizes. No matter what size you require, you are sure to benefit from global service, not to mention expert, personal support from day one. Making sure you get the packaging solution you require to meet your specific needs.



Certified reliability.

Benefit from proven expertise and security: certificates and regular checks are positive proof that you can completely rely on EMPAC at all times.

The outstanding quality of EMPAC is evidenced by certification according to DIN EN ISO 9001. EMPAC also complies with internationally accepted environmental and hygiene standards and regulations. Our environmental management system is certified according to DIN EN ISO 14001, our high standards in hygiene according to DIN EN 15593.

Furthermore, our company has been approved by the Federal Institute for Materials Research and Testing (BAM) as a testing facility for hazardous FIBC goods. EMPAC is also a member of various standardisation bodies and committees:

- EFIBCA (full member), European Flexible Intermediate Bulk Container Association



Our certificates are your guarantee.



- IK, Industrievereinigung Kunststoffverpackungen e.V., specialising in FIBC (German Association for Plastics Packaging and Films)
- Gütegemeinschaft Kunststoffverpackungen für gefährliche Güter e.V. (Quality Association of Plastic Packaging for Hazardous Goods)
- IEC (International Electrotechnical Commission)
- DKE (German Commission for Electrical, Electronic & Information Technologies)

Our long-standing partnerships with raw material suppliers are important for guaranteeing a consistently high level of quality. Naturally, external audits are also continuously carried out by customers and external auditors. For we aim to create a complete level of trust.





Ideal for the pharmaceuticals industry.

Pharmaceutical big bags: innovative and reliable.

Customers from the pharmaceuticals sector rely on our containers to package everything from pharmaceutical raw materials to finished APIs (active pharmaceutical ingredients). EMPAC's pharmaceutical big bags are available with PE and aluminium composite foils. These foils are produced using raw materials specially approved for pharmaceutical use:

Approved for use in contact with food in accordance with:

- 10/2011/EU plastic materials and articles intended to come into contact with food
- FDA 21 CFR 177.1520

Pharmaceuticals:

- European Pharmacopoeia 3.1.3 polyolefins
- European Pharmacopoeia polyethylenes without additives for containers for parenteral preparations and for ophthalmic preparations
- US Pharmacopoeia <88> Class VI 70° - 24h requirements

Furthermore, fully automated production in clean rooms ensures contamination-free liners, which remain closed throughout the entire production process.



EMPAC aluminium liners are produced in accordance with DIN EN ISO 14644 -1 in a class 7 clean room.

The outstanding innovative strength of EMPAC is also evident in its unique ability to produce a Type C container that is suitable for use with pharmaceuticals but contains no anti-static agents.

On the one hand, this container is electrostatically dischargeable in accordance with IEC 61340 - 4 - 4. On the other hand, it fulfils the requirements of European Pharmacopoeia 3.1.3 and 3.1.4.

Complete documentation on all stages of production up to the finished container enables detailed tracking of substances used and measures implemented.



The production process is fully documented.





Ideal for the food industry.

Inertised big bags: for longer storage and transportation.

This EMPAC packaging solution is in great demand, especially in the food industry. The immediate packagings undergo organoleptic, microbiological and other tests to avoid impairment of the content. A filter is sealed in a special barrier foil. Once the product has been filled, the foil filling spout is sealed by the user. Any oxygen present is then withdrawn via the filter and the product is charged with inert gas, for example, nitrogen.



The packaged goods have a much longer lifespan in the inertised big bags than in other containers. This offers huge financial benefits: both longer storage and transportation are possible, making it easier to tap new markets, for example, in Asia, America or Africa. Production planning is also made easier and longer term, as bigger batches can be produced and less changes (set-up times) are necessary in production.

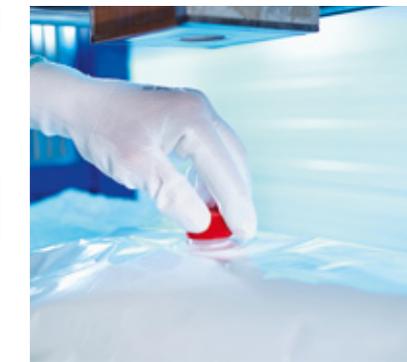
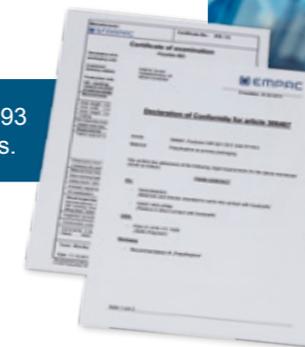
All of the materials used are approved for use in contact with food in accordance with:

- 10/2011/EU plastic materials and articles intended to come into contact with food
- FDA 21 CFR 177.1520

Materials can easily be tracked. All production checks and final inspections by a metal detector and employee are fully documented.



Certificates such as the Hygiene Certificate EN 15593 verify clean production according to food regulations.



FIBC in line with electrostatic characteristics according to IEC 61340-4-4.

Typ A

- No requirements

Typ B

- Breakdown voltage less than 6 kV

Typ C

- Dischargeable packaging
- Surface resistance $< 1 \times 10^7$ ohm
- Earthing is mandatory
- Electrostatic charges are safely discharged during filling and emptying

| Bulk goods | Environment | | |
|---------------------|--------------------------|--|--|
| | Non-explosive atmosphere | Dust zones 21–22 (1,000 mJ >MIE >3 mJ) | Gas zone 1–2 or dust zones 21–22 (MIE \leq 3 mJ) |
| MIE >1,000 mJ | A, B, C | B, C | C |
| 1,000 mJ >MIE >3 mJ | B, C | B, C | C |
| MIE \leq 3 mJ | C | C | C |

***Minimum ignition energy**

All FIBC types are available with PE and aluminium composite foils in line with electrostatic requirements.

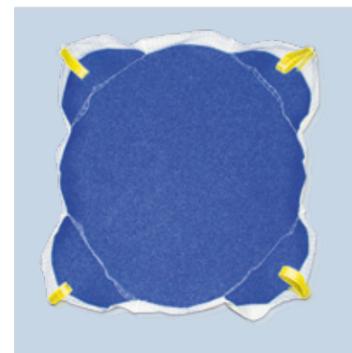
! Independent testing facilities have confirmed the functionality of the EMPAC containers.



EMPAC grid: pack up to 15% more into the same amount of space.

Thanks to its exceptionally low resistance, EMPAC's extruded grid enables bulk goods to flow freely into the corners of FIBC. This offers a major financial benefit in that up to 15% more can be packed into the same amount of space, resulting in cost savings throughout the entire value-added chain (filling, storage, transport, emptying).

Also, the effect of grid technology improves container stability and reduces the height of the material cone in the container, which facilitates stacking. Filling and discharge are also optimised. The EMPAC grid can be used with CP3, CP1 and EURO pallets. Special formats are also available on request. The grid is free from fibres and lint, resistant to abrasion and approved for use in contact with food.



The grid technology increases the stability of the container.



Sturdy composite foils enable the grids to be securely welded.

The grid technology enables the advantages of a dimensionally stable FIBC to be combined with the characteristics of PE and aluminium composite foils as well as other barrier foils. High-strength composite foils ensure the grids are securely fused without losing their barrier properties, for example, impermeability to water vapour, gas and aroma tightness. The foils used are particularly resistant to perforation with minimum stretching. All dimensionally stable FIBC (with or without liners) are available in Type A to C in line with the electrostatic requirements IEC 61340-4-4.



The foils are extremely resistant to perforation.

EMPAC products at a glance.

All of the materials we use are approved for use in contact with food and are completely free from silicone.

Usage (class)

Disposable design

- Safety factor 5:1
- Maximum load 2,000 kg

Reusable design

- Safety factor 6:1
- Maximum load 1,500 kg

Hazardous goods

- Maximum load 2,000 kg
- Packaging groups II (13H2Y–13H4Y) and III (13H2Z–13H4Z)

Design

Dimensionally unstable = circular/round when filled

Dimensionally stable = pallet

- For CP3 (114 x 114 cm), CP1 (100 x 120 cm) and EURO pallets (80 x 120 cm) or customised
- More effective use of existing capacity during filling, storage, transport and emptying, lower overall height
- Stable stacking
- Improved transport safety
- Possible packaging of bulk goods with permanently fluid properties



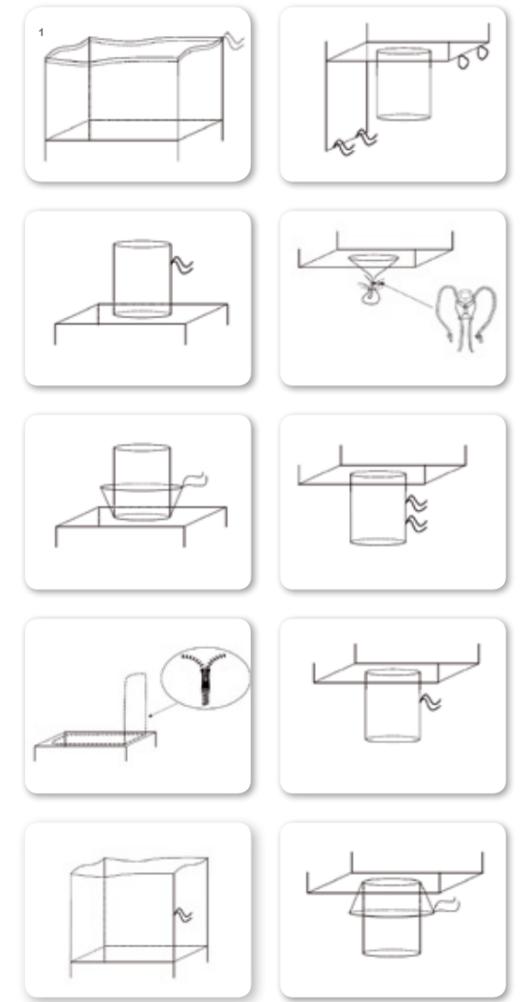
Hazardous goods container



Dimensionally stable container for EURO pallets



Electrostatically dischargeable Type C container



The type, size and length of the bottom and top are adapted to individual requirements. Different types of closure can be used to suit specific purposes, for example, tapes, cords, Velcro fasteners, B-LOK, etc.

Filling spouts:

- 1 Rosette skirt with drawstring
- 2 Filling spout with tape
- 3 Filling spout with additional filling spout rosette
- 4 Cover flap with zip fastener
- 5 Skirt with side tape

Discharge spouts:

- 6 Base flap with side fastener
- 7 Discharge with B-LOK bound to gooseneck
- 8 Discharge with two tapes
- 9 Discharge with one tape
- 10 Discharge with additional base discharge rosette

| Volume in m³ | Base height 760 mm | Base height 880 mm | Base height 920 mm | Base height 960 mm |
|--------------|--------------------|--------------------|--------------------|--------------------|
| 0.3 | 500 | | | |
| 0.4 | 650 | | | |
| 0.5 | 800 | 600 | | |
| 0.6 | 950 | 700 | 640 | |
| 0.7 | 1,100 | 800 | 730 | 660 |
| 0.8 | 1,250 | 900 | 820 | 740 |
| 0.9 | 1,400 | 1,000 | 910 | 820 |
| 1.0 | | 1,100 | 1,000 | 900 |
| 1.1 | | 1,200 | 1,090 | 980 |
| 1.2 | | 1,300 | 1,180 | 1,060 |
| 1.3 | | 1,400 | 1,270 | 1,140 |
| 1.4 | | 1,500 | 1,360 | 1,220 |
| 1.5 | | 1,600 | 1,450 | 1,300 |
| 1.6 | | 1,700 | 1,540 | 1,380 |
| 1.7 | | 1,800 | 1,630 | 1,460 |
| 1.8 | | 1,900 | 1,720 | 1,540 |
| 1.9 | | | 1,810 | 1,620 |
| 2.0 | | | | 1,700 |
| Ø | Approx. 970 | Approx. 1,120 | Approx. 1,170 | Approx. 1,220 |

Besides square designs, rectangular containers can also be produced. Customised dimensions are possible, too.

Flutainer

- Secure packaging, storage and transport of liquids and paste-like goods
- Supplied as a self-assembly kit, assembly time less than one minute
- Space-saving storage
- Reusable pallets, stacking poles and frame
- Wooden pallet: 108x115 cm
- Optimised dimensions for transportation in ISO containers



Stackable with pallets.

Single-point container

- Sturdy FIBC for building materials, waste disposal, fertiliser, seeds
- Easy to handle
- Rapid handling (e.g. at the port) due to central suspension
- Stackable
- Available with or without foil



Recovery container (salvage container)

- Designed for the safe transportation of damaged FIBC and/or FIBC that fail to meet the requirements of a hazardous goods container
- Approved by the Federal Institute for Materials Research and Testing (BAM)
- One FIBC per recovery container can be packed and transported
- Approved for 1,500 kg, 13H4W
- Available ex stock in Emsdetten



RoboBags: fully automated filling for increased productivity.

RoboBags protect employees from coming into contact with hazardous goods and thus prevent industrial accidents and injuries. They also minimise the risk of employees contaminating the goods in transit (e.g. food) and thus optimally protect the cleanliness and quality.

It goes without saying that RoboBags also offer the basic flexible characteristics of all EMPAC packaging. Thanks to the Robo bags, all processes are automated, increasing productivity for large quantities and significantly improving production planning. The system (robot with RoboBag) can also be integrated into existing production facilities.



1 The robot recognises the container on the pallet and picks it up.



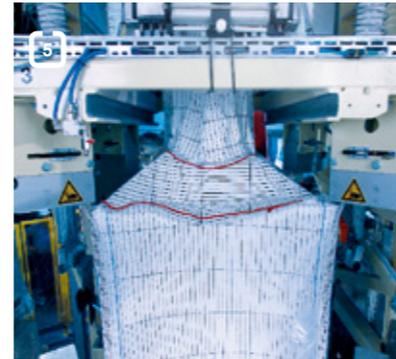
2 The container is then fed into the system ...



3 ... and the filling spout is connected.



4 The container loops are then hung up ...



5 ... and the container is filled.



6 Once filled, the filling spout is closed ...



7 ... and the loops are taken off.



8 The container is ready to be transported.



Perfect for the **paint industry.**

Our precisely moulded sealing foils offer additional protection in rigid intermediate bulk containers (IBCs) for paint products. They also improve the watertightness of the overall packaging and make it easier to clean the IBC, especially the top.

The sealing foils are permanently anti-static and free from silicone and substances that promote levelling.

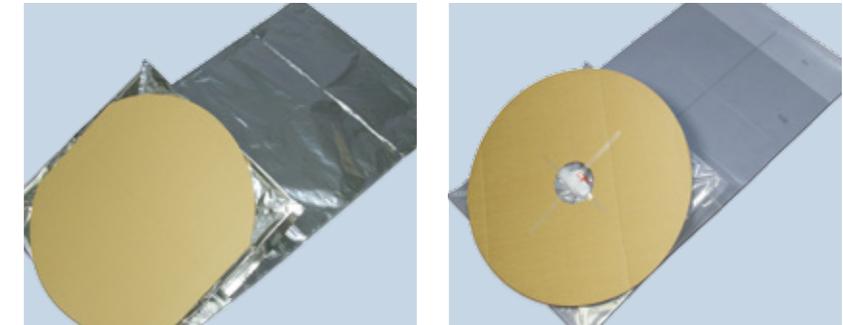


Foil liners are available in various sizes and foil types for lining cardboard packaging (e.g. octabins).

Foil liners: manufactured in line with required specifications.

EMPAC's foil liners are manufactured according to defined barrier and foil characteristics as well as individual specifications. Depending on the product requirements, we develop the necessary high-barrier foils from various polymer combinations. EMPAC foils also protect any problematic goods to be packed from corrosion, oxidation, microbiological spoilage and light.

Various PE and aluminium composite foils are available ex stock. Ongoing interim and final checks ensure the high level of quality of all EMPAC liners.



To better position the liners in the cardboard packaging, a corrugated piece of cardboard can be inserted (also available with an outlet at the bottom).



Skilled employees ...

... and modern equipment ...

... ensure the consistently high quality of EMPAC.



Let's discuss **your requirements** and **our solutions**.

Our customers' wishes and expectations are at the heart of what we do. That's why we continue to communicate openly with our customers to create a sense of mutual trust.

We'd be happy to arrange an appointment to discuss your special packaging requirements and our flexible product solutions, as well as any additional services you may need.

Contact us and discover a long-lasting, reliable partner to take good care of you and your products.



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