

MAUSER Reconditioning – an eco-friendly alternative to new packaging.

Quality, security, innovation and sustainability included!



REDEFINING SUSTAINABILITY



Reconditioning and recycling across the full packaging life cycle reuses precious materials.



About MAUSER Packaging Solutions

A global leader in packaging solutions and services, MAUSER Packaging Solutions (MPS) supplies metal, plastic, fiber, and hybrid packaging of all sizes to numerous industries worldwide.

True sustainability at scale

Our unparalleled, innovative solutions cover the full packaging life cycle, providing customised, environmentally friendly options that give businesses across the planet a lighter ecological footprint.

Global reach for worldwide impact

Our network of design, manufacturing, reconditioning, and recycling facilities can deliver high-quality solutions virtually anywhere, helping to boost efficiency and achieve true global sustainability at scale.



Sustainable Solutions

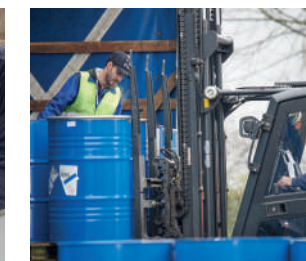
Our sustainability concept is built on our comprehensive ECO-CYCLE concept that adheres to 5 principles:

- RENEW** Investigate promising future materials.
- REDUCE** Minimise raw material use, energy consumption, and environmental impact.
- RECOLLECT** Operate a global recollection system.
- REUSE** View reconditioned packaging as a high-quality, environmentally low-impact solution.
- RECYCLE** Finish the cycle and give materials new life.

We successfully introduced our Infinity Series post-consumer resin (PCR) plastic drums years ago.

But now we also offer the most sustainable IBC on the market which is made with a multilayer MAUSER Infinity Bottle.

MAUSER is committed to reducing its products' environmental impact! In 2018, MPS produced more than 31,000 tons of PCR.





Sustainability

We believe packaging should be reused.

It's a simple idea, but one that could change your business, if not the world.

Many kinds of packaging can be reused or recycled and made into something else.

The more you reuse a metal or plastic drum or IBC, the more you get out of it and the more you help save our planet.

Some types of packaging can only be used once, but we want these to be the exception, not the rule.

MAUSER Packaging Solutions is the first to offer businesses like yours reliable, customised solutions covering the full packaging life cycle, around the globe.

INDUSTRY GOALS

- ▶ 30% FEWER RAW MATERIALS USED
- ▶ 75% SMALLER CO₂ FOOTPRINT
- ▶ 0 LANDFILL WASTE BY 2030
- ▶ 15% FEWER GREENHOUSE GAS EMISSIONS
- ▶ 5% FEWER LOGISTICS EMISSIONS
- ▶ 100% USE OF RENEWABLE/RECYCLED MATERIALS FOR ALL PACKAGING

MPS Reconditioning

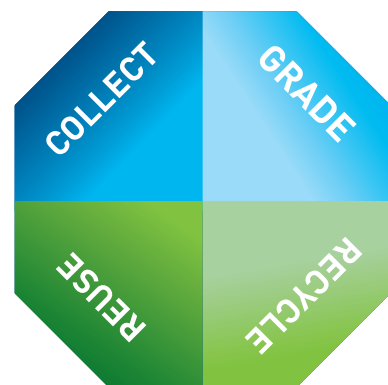
Get more out of your drums and IBCs.

The more you use your drums and IBCs, the greater the impact on your business and the environment.

MAUSER Packaging Solutions Reconditioning (MSPR) is a discrete business unit that covers the full reconditioning cycle and has replaced the company NCG. MSPR offers reconditioning services for customer-owned IBCs and drums at either your site or ours.

MPSR offers customised reconditioning excellence on global scale:

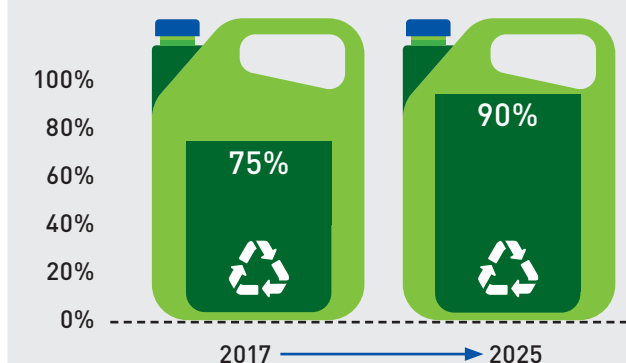
- ▶ 10 million+ collected packaging units
- ▶ 4 million+ reconditioned IBCs
- ▶ 8 million+ reconditioned drums
- ▶ 8.000 trailers
- ▶ 1 global network



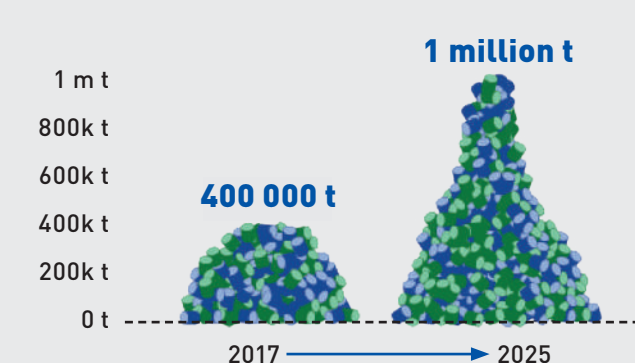
Sustainability Figures and Goals

Plastic packaging helps conserve resources by reducing material use, protecting goods, and recycling. The Industrievereinigung Kunststoffverpackungen e.V. trade association has set targets for recyclability and use of recycled plastics by 2025.

Recyclable or reusable plastic packaging



Use of recycled plastics



Source: Industrieverband Kunststoffverpackungen e.V. – Sustainability Report 2018 (Recycling goals 2025 for the plastic packaging industry)
<https://newsroom.kunststoffverpackungen.de/wp-content/uploads/2018/11/Nachhaltigkeitsbericht-2018.pdf>

Reconditioned IBCs and drums have far smaller carbon footprints, helping to reduce your company's environmental impact while still reliably delivering safe results. Our global recovery and refurbishing network provides a steady supply of high-quality reconditioned IBCs and drums.

RENEW R&D	REDUCE TCO	RECOLLECT MPSR	REUSE MPSR	RECYCLE INFINITY®
Circular Economy platform	1,260 tons less virgin resin by using fit-for-purpose packaging	2,477,000 IBC 818,000 plastic drums 327,000 steel drums	2.4 million m³ in reconditioned packaging	16,350 tons of recycled resin in MAUSER products

MAUSER is committed to reducing its products' environmental impact!
 In 2018, MPS produced more than 31,000 tons of Recolene®.





The MAUSER grading process helps workers decide whether an IBC is reusable and needs to be washed or rebottled. If a package is not reusable, MAUSER recycles the materials to generate Recolene®.

Collection

MAUSER Packaging Solutions offers a range of standard and customised global collection and return programs.

MPS Packaging Return Program

MPSR collects empty packaging from most major manufacturers (our competitors included). Different types of packaging can often be transported in one trailer, streamlining the collection process and promoting sustainability and convenience for our customers.

Customised solutions

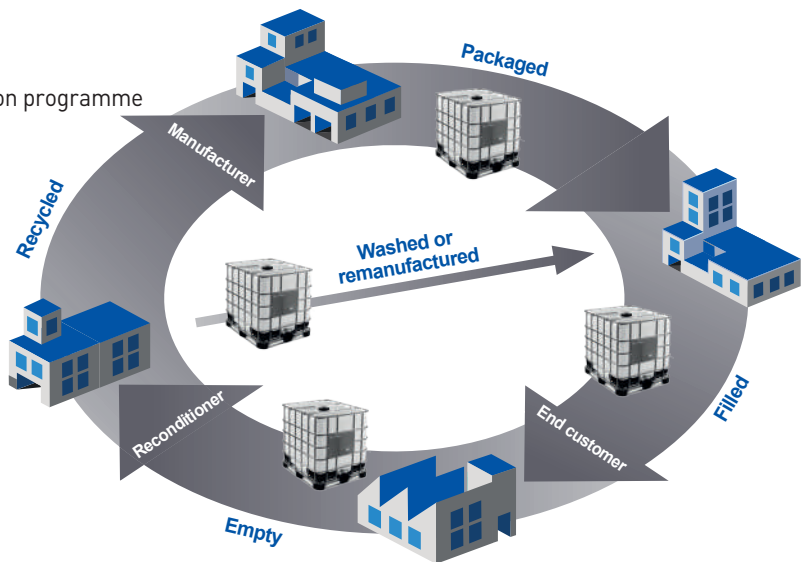
Working with your experts, our team can create a tailor-made collection service combining high quality standards and maximum efficiency.

Responsibly extending the life cycle of industrial packaging

As per MAUSER's ECO-CYCLE concept, the Reconditioning business unit collects, reuses, and recycles materials.

Recollection

- Global, easy, fast, safe industrial packaging return/collection programme
- Recollection of all IBCs
- Customised recollection solutions; fleet management.
- Sustainable transportation
- Modern, transparent grading and traceability.
- Safe handling of empty packaging
- Competence in handling dangerous goods
- **Mixed loads of IBCs and drums possible**



Collection

► Global Return Program

Our network covers key industrial regions all around the world, making it easy to return your industrial packaging.

► Most Manufacturers Covered

MAUSER's programme collects industrial packaging from a wide range of manufacturers.

► Range of Packaging Types

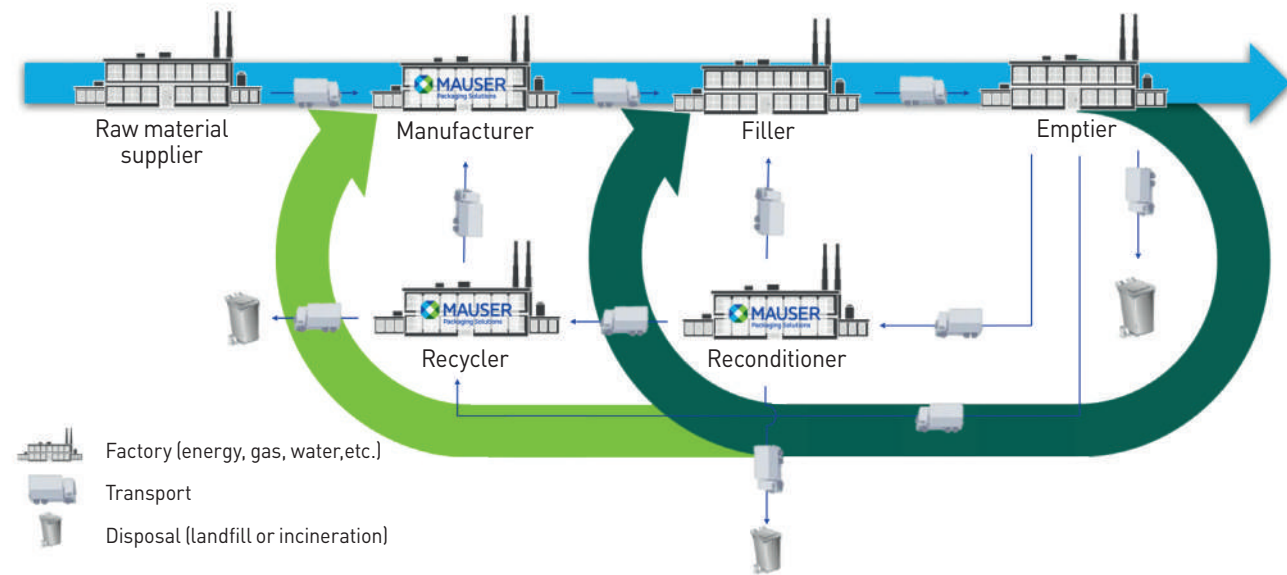
Customers can return different types of packaging on a single truck, allowing collections to be scheduled efficiently.

► Customised Return Systems

Why not tailor the return system to your needs? We can provide transportation from your site.

► Transparent Communication

Clear return conditions, with analyses and evaluations of returned volumes at local, regional, and global levels.



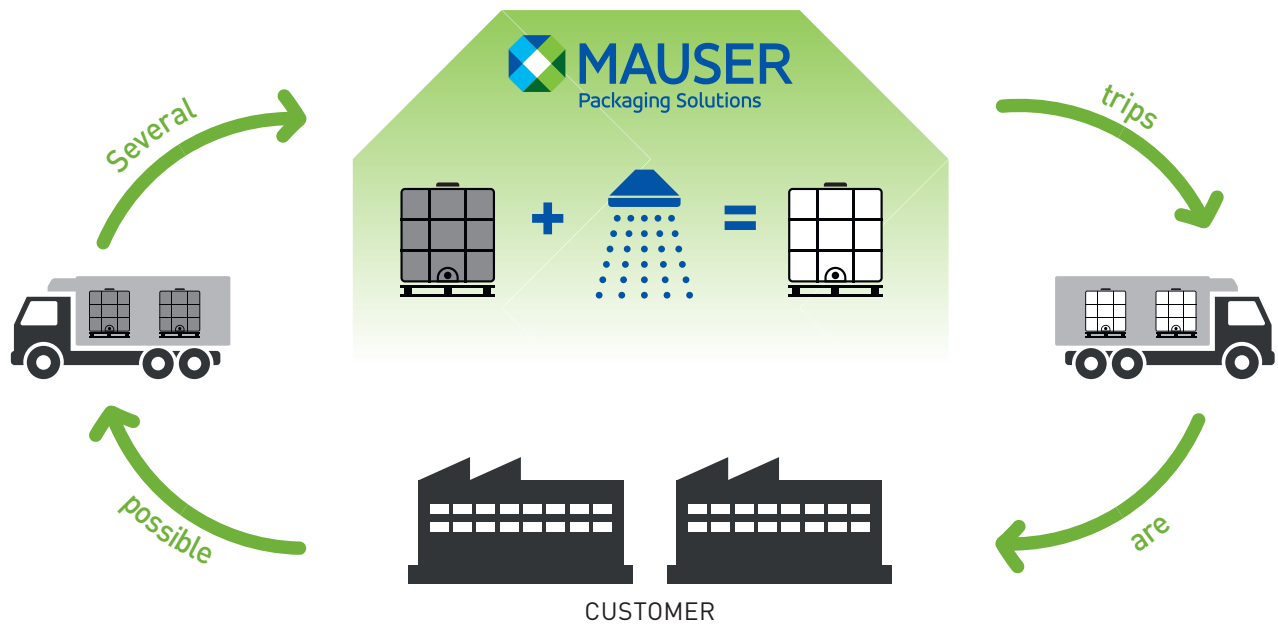
Washed IBCs

Our trained and experienced staff utilise defined processes and the MAUSER Reconditioning System to determine if a collected IBC can be washed. This is the preferred option as it is the most sustainable. Whether an IBC can be washed is based upon the substance it contained and the overall condition.

MPSR washes several million of IBCs every year.

Our washing facilities can handle all suitable IBC types and brands. IBCs with washable bottles are pretreated before going through the automatic washing system, where they are washed and cleaned inside and out before being dried. After leaving the washing facility, IBCs' valves and openings are sealed and their impermeability and appearance checked. Minor repairs can also be carried out. MAUSER uses as little water as possible during this process.

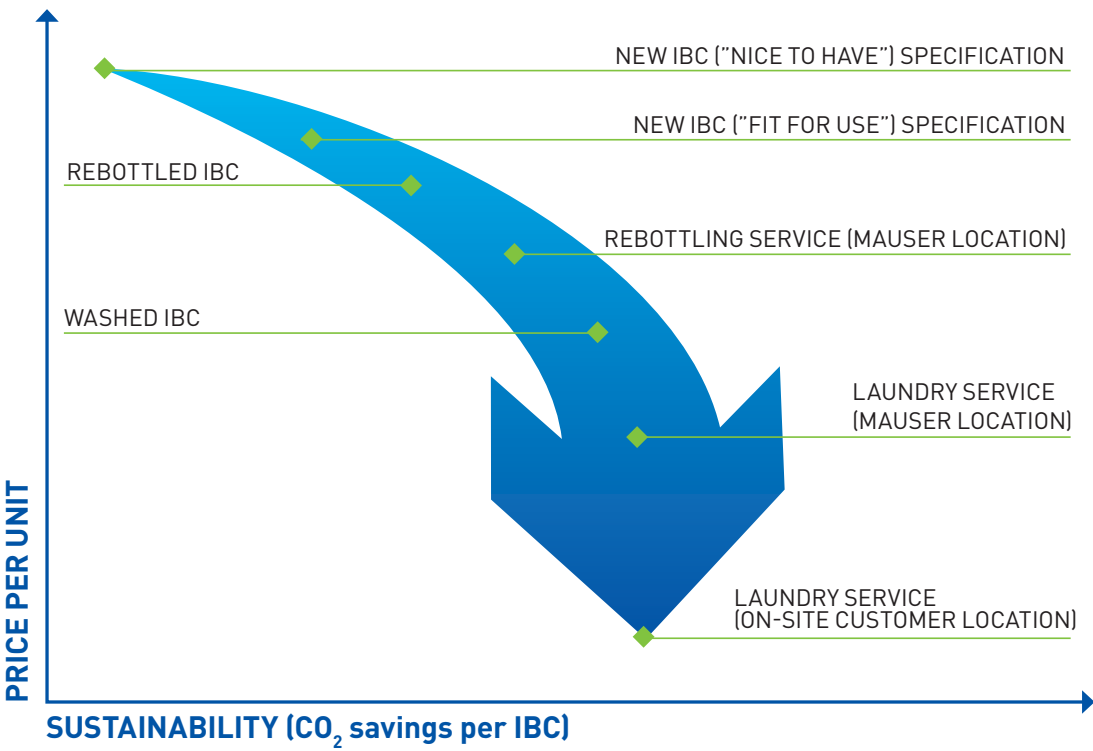
- MAUSER Packaging Solutions Reconditioning (MPSR) can offer the following washed IBCs:
- ▶ Non-UN
 - ▶ UN
 - ▶ EX
 - ▶ All major brands
 - ▶ All pallets (wooden, hybrid, steel, plastic)



Laundry Service

MPSR offers a safe, cost-effective and very sustainable laundry service. We collect used IBCs from your or your customers' sites and bring them to the nearest MPSR site. These IBCs are then washed or equipped with a new MAUSER inner bottle (Rebottled IBC). MAUSER does a complete quality inspection of the IBC. The ready-to-use IBCs are returned to your sites. The IBC remains the customer's property throughout the entire process. We customise our laundry service to your needs and demands!

EXAMPLES OF IBCS





Rebottled IBC

The use of a new MAUSER bottle to replace a used bottle ensures the highest standard of safety while reusing an IBC cage. It's environmental friendly as well.

Brand new virgin or Recolene® inner bottle

Cleaning: replacement of corner guards if required

New virgin, sealed discharge valve

Cleaned steel cage

New or cleaned label plates in different sizes

Cleaning and, if required, minor repairs

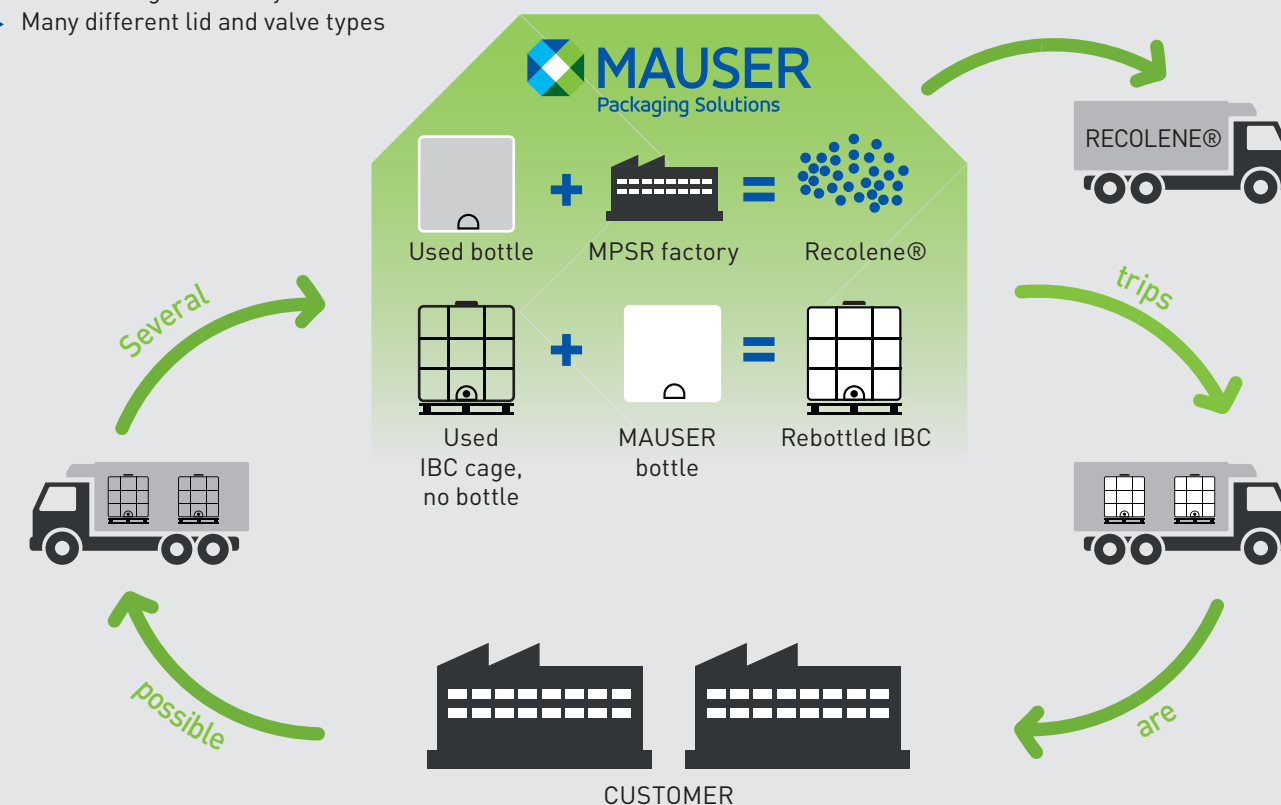
Components that are damaged or cannot be cleaned are replaced and recycled for materials.



MPSR combines top-quality used cages with new bottles to give used packaging a new life. IBCs with non-washable bottles have these removed and recycled during incoming goods inspections, while their cages are cleaned, inspected and retrofitted with new MAUSER bottles, ready to go. We are doing a Rebottling not only with cages from MAUSER as well as from other major brands. MAUSER has its own UN approvals for rebottled IBCs and ensures that they satisfy all technical requirements.

MPSR can offer following rebottled IBC:

- ▶ Non-UN
- ▶ Non-UN Infinity (with a Recolene® inner bottle)
- ▶ UN 1.6
- ▶ UN 1.9
- ▶ EX
- ▶ Protected against UV rays
- ▶ Many different lid and valve types

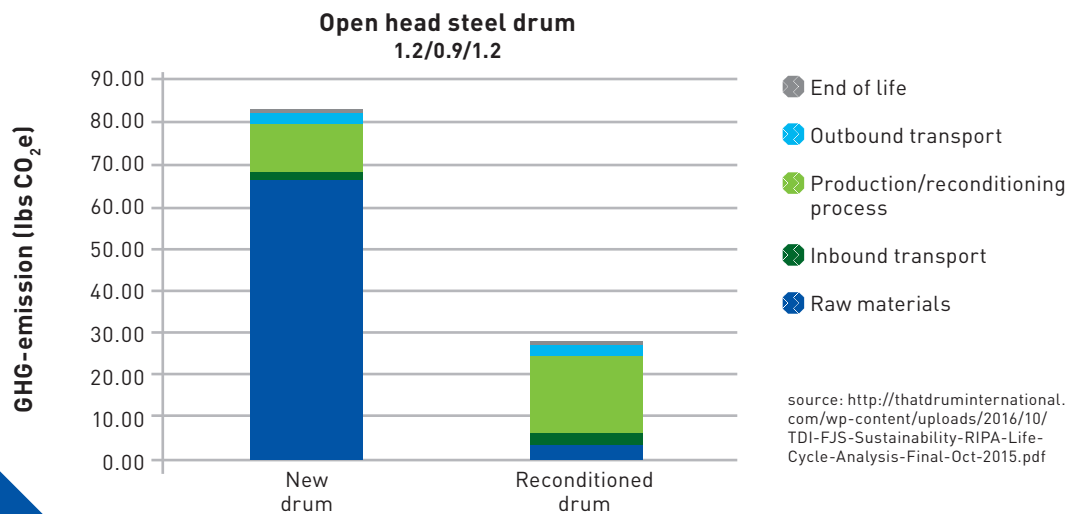


Steel Drum Reconditioning

Reconditioned steel drums from MAUSER have a much smaller carbon footprint and price than new steel drums, reducing your company's environmental impact and saving you money while safely transporting your products to their destination. In one year, MAUSER reconditions over 10 million drums.

Reconditioned steel drums are highly customisable, extremely versatile, and available in a multitude of styles to suit all of your packaging needs:

- ▶ UN and non-UN
- ▶ Open and closed tops
- ▶ Lined and unlined
- ▶ Various sizes, colours, and closure options
- ▶ Aseptic poly liners for food-grade applications
- ▶ Agitators and side fittings

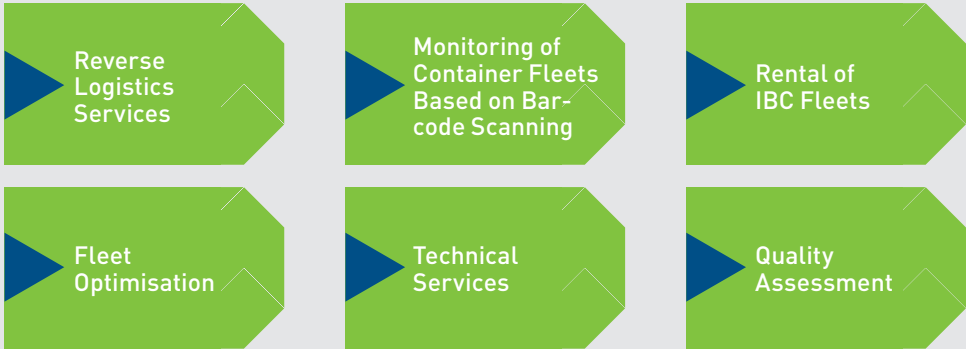


- SERVICES:
- ▶ VENDOR-MANAGED INVENTORY SERVICES
 - ▶ TRANSPORTATION SERVICES
 - ▶ RESPONSIBLE CONTAINER MANAGEMENT
 - ▶ CLOSED-LOOP RECONDITIONING SERVICES

Fleet Management

We offer the logistics systems and expertise needed to manage your container fleet.

- ▶ **Fleet Management**
MAUSER provides comprehensive fleet management systems for stainless steel and plastic IBCs.
- ▶ **Cleaning and Repair**
Our fleet management systems include fleet ucleaning, testing and repair.
- ▶ **Return Logistics**
Logistics experts ensure fast and efficient delivery and pick-up of empty or filled units.
- ▶ **Tracking and Tracing**
Web-based management tools offer customers extensive options for tracking their shipments, as well as the actual locations and statuses of each IBC. In addition, customers can call up individual reports and manage specification types, test reports, and other technical documents from a central source.





The Infinity Process

Our Infinity Series of post consumer resin (Recolene®) delivers sustainable solutions across the full packaging life cycle.



"Closed loop" recycling in "one hand" – from collection to manufacturing.

MAUSER carefully selects and reconditions customer-owned industrial packaging.

This makes drums and IBCs reusable, benefiting both the environment and the customer's ecological footprint.

Reconditioning can entail washing, furnace oxidation, drying, or minor repairs and be carried out either on the customer's premises or in our own facilities.



► Collection of HDPE Materials

We collect empty HDPE packaging of all major brands.

► Recycling of Reusable Materials

Our specialised recycling processes create high-quality secondary materials that can be used to produce new packaging, making a sustainable contribution to reducing industrial waste.

► Manufacturing of New Products

The MAUSER Group has created a comprehensive and successful portfolio of packaging materials made from high-quality MPSR recycled plastics (PE drums and IBC inner bottles) and accessory components (IBC pallets, corner protection) made of recycled plastics.

Infinity Series - Giving plastics a new lease of life

The most comprehensive portfolio of UN-certified recycled plastic products.

- Recycled material generated in-house and fully compliant with DIN ISO 16103-2000
- Risk-free and UN-approved for solids up to Packing Group I (PG I)
- State-of-the-art manufacturing technology – mono- and multilayer
- Sustainable and great for the environment, saving natural resources



MAUSER recycling process in detail

GRINDING & WASHING

SHREDDING	Prepare packaging or bales for wet grinding
GRINDING	Volume reduction and surface improvement
WASHING	Remove sticking residues
DRYING	Prepare proper extrusion process

GRANULATION

EXTRUSION	Homogenise material and additives
VACUUM DEGASING	Remove volatile organic compounds (VOCs)
GRANULATION	Prepare injection and blow molding



MAUSER's Global
Reconditioning Network

WE WORK.
YOU PROFIT.
ENVIRONMENT WINS.





info@mauserpackaging.com
mauserpackaging.com

