



APPLICATIONS

- Containers: Drums, IBCs
- Industries: Food industry, fish oil and omega-3 production, nutraceuticals, animal nutrition, marine and specialty oils

ADVANTAGES

- Consistent product quality through low-foam, low-air bottom-up filling
- Improved product stability and higher quality assurance due to reduced oxidation with optional nitrogen inerting
- Regulatory-compliant production using food-grade materials in accordance with EU and FDA requirements
- Maximum flexibility for different production volumes, from single containers to fully automated pallet filling
- Direct quality verification of the actually filled product through integrated sampling

Maximum Product Integrity in Fish Oil Filling



Fish oil is one of the more demanding liquid food products in industrial filling processes. Its sensitivity to oxidation, strong odor profile, variable viscosity, and strict hygiene requirements call for controlled and food-compliant processing technology. GREIF-VELOX has many years of experience in liquid filling within the food sector and offers specialized solutions for the safe handling of fish oil with the A-DOS-FS and A-DOS-P1 systems.

Oxidation Protection as a Key Process Requirement

Fish oil is highly sensitive to oxygen ingress, which can accelerate oxidation processes and negatively affect product quality. For this reason, GREIF-VELOX integrates nitrogen flushing solutions into the filling process. Inerting can be carried out via the filling lance or through a separate flushing station, reducing the oxygen content within the container. Filling is performed using the bottom-up filling method, which minimizes turbulence during the process. This approach reduces foam formation, prevents air inclusions, and supports consistently high filling accuracy.

Hygienic Design and Food-Grade Materials

In fish oil filling, material selection is critical for product safety and regulatory compliance. GREIF-VELOX uses 304 or 316 stainless steel and food-grade seals for all product-contact components in the food-grade configuration. These materials comply with the requirements of EU Regulation (EG) No. 1935/2004 and EU Regulation (EU) No. 10/2011 and are also FDA compliant. If required, the system can be supplied in a fully stainless-steel design.

Cleaning Concepts for Production Safety

Residues in the filling lance or product-carrying lines can pose quality risks when handling sensitive oils. For this reason, various cleaning options are available: CIP-capable solutions for rapid cleaning of the filling lance as well as systems with a separate valve rack for internal and



Fish Oil Filling with A-DOS-FS & A-DOS-P1

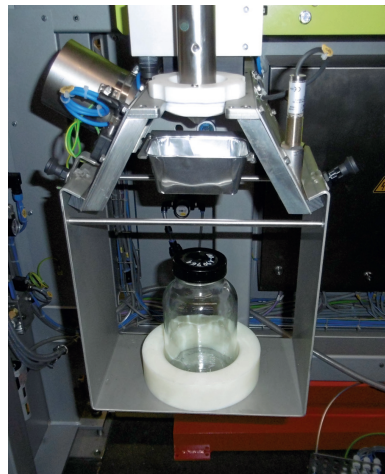
ADVANTAGES

- Enhanced product protection through early detection of damaged drums
- Fast and safe product changeovers thanks to CIP-capable cleaning concepts
- Improved working conditions and controlled emissions through connection to existing extraction and filtration systems
- Reduced liability and recall risks through complete batch documentation and traceability
- Greater process reliability and reduced error potential through fully automated handling of drums and IBCs (A-DOS-P1)



external cleaning. This enables short downtime and safe product changeovers. As fish oil can have an intense odor, GREIF-VELOX systems can be connected to existing aspiration and filtration systems, allowing generated vapors to be extracted in a controlled manner and integrated into existing exhaust air concepts.

Process Reliability through Inspection and Sampling



To prevent contamination caused by damaged drum interiors, a camera-based drum interior inspection system can be integrated. The system checks the internal surfaces before filling and detects potential defects at an early stage. For quality monitoring, an integrated Product Sampling System is also available. Sampling takes place at the end of the filling line and enables verification of the actual filled product quality. If required, the sampling container can also be inerted.

Fully Automated Pallet Filling for Drums and IBCs

The A-DOS-P1 is designed as a fully automated pallet filling system capable of processing both palletized drums and IBCs. Automatic container transport, drum opening and closing, labeling, and load securing can all be integrated into the line. For 220-liter steel drums, the system achieves a throughput of up to 40 containers per hour. The A-DOS-FS is designed for single-drum filling and is particularly suitable for production environments where pallets are not permitted in the filling area or where flexible batch processing is required.

All systems can be supplied in an ATEX-compliant design if required.

Complete Traceability and Labeling

With the fully automated VeloFlexLabeler labeling system, batch numbers and product-specific data can be printed directly onto labels and applied to the containers. The system can be integrated into existing ERP or production management systems, supporting transparent documentation throughout the entire supply chain.