

SCHÜTZ

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INTERPACK 2017 SPECIAL EDITION

interpack
PROCESSES AND PACKAGING
LEADING TRADE FAIR



INTERPACK 2017

**NEW PACKAGING SOLUTIONS FOR MAXIMUM
EFFICIENCY IN THE SUPPLY CHAIN** (PAGE 2)

PACKAGING SYSTEMS

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INTERPACK 2017

NEW PACKAGING SOLUTIONS FOR MAXIMUM EFFICIENCY IN THE SUPPLY CHAIN



Interpack is the main trade event for the international packaging industry. It is the driving force behind numerous application industries: food, beverages, pharmaceuticals, cosmetics, non-food and consumer goods.

In 2017, the globally leading trade fair reported the highest demand from exhibitors in its nearly 60-year history. Between 4th and 10th of May around 2,700 companies from more than 60 countries will be attending the show. They will be showcasing their latest products in the 19 halls of the Düsseldorf Exhibition Center. As in previous years, SCHÜTZ will be using this platform to present a selection of the company's

2,700 companies from more than 60 countries will be showcasing their latest products in 19 halls.

many innovations. At booth D22/E34 in Hall 10, visitors are invited to discover our new packaging solutions and proven classics for supply chains.

The show presentation is characterized by four essential attributes: "Innovative. Reliable. Sustainable. Global." As our guiding principles, these attributes also form the basis for the continual development of our group and our products. More than one hundred

engineers and specialists from a wide range of disciplines work continuously to develop new, innovative transport packaging and optimise established products. We guarantee our customers the highest quality and absolute dependability, based on our own machines and production plants, all of which are designed and built in-house.

INNOVATIVE. RELIABLE. SUSTAINABLE. GLOBAL.

SCHÜTZ's product and service portfolio always closely follows our company philosophy of complete sustainability: Along the entire value chain, we preserve natural resources and ensure that activities which require energy are increasingly efficient. Another key contribution to sustainability is reconditioning: each reconditioned IBC saves around 100 kilograms of CO₂ in comparison to a new container.

Our continually expanding network, which currently comprises of 47 production sites worldwide, also serves to increase our sustainability by ensuring that we are always close to our customers, thus reducing transport distances and cutting emissions. At the same time,

a broad network of locations ensures delivery reliability and globally uniform product standards for consistent quality.

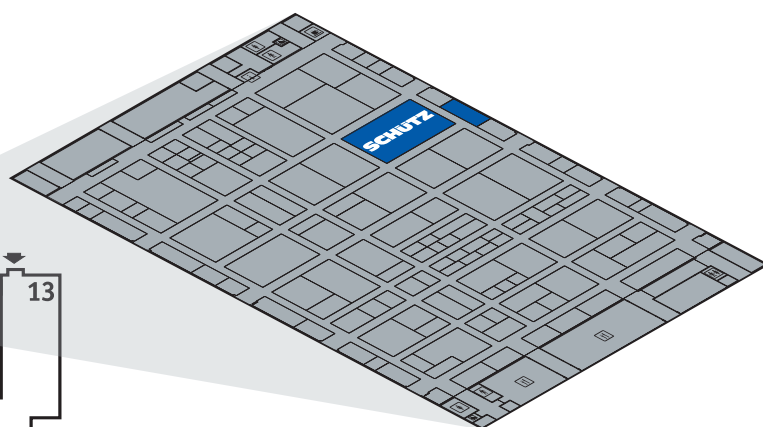
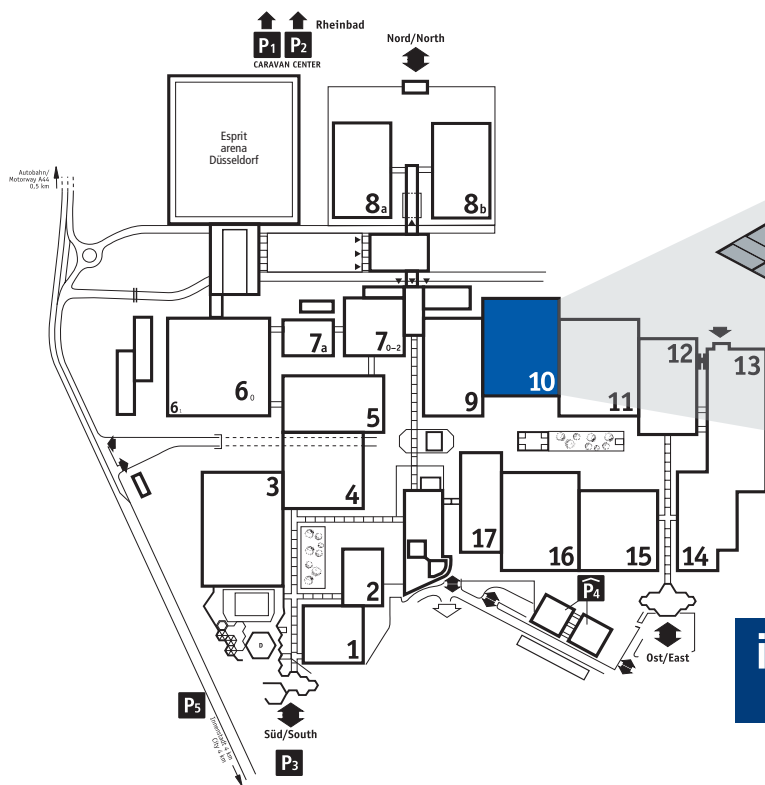
Our sustainable packaging systems offer optimal solutions for almost every type of filling product and meet the

The booth features a futuristic, open-plan design with many high-tech and multimedia elements.

specific requirements of a wide range of industries. By supplying the ideal products, we ensure an optimum flow

in the supply chain. Interpack visitors are invited to discover numerous exhibits that demonstrate the environmental and economic advantages of our products and services. At our futuristic, 500-square-metre trade show booth with its open design, our guests

will be invited to immerse themselves in the world of SCHÜTZ PACKAGING SYSTEMS. A wealth of high-tech and multimedia elements, and a large LED screen will showcase the models on display.



**4 – 10 MAY 2017
DÜSSELDORF EXHIBITION CENTER
HALL 10 // BOOTH D22|E34**

THE NEW ECOBULK SX-D

SCHÜTZ has developed a type of packaging that can literally withstand "burning" situations: the new ECOBULK SX-D. This IBC with a volume of 1,000 litres not only has a conventional steel grid, it also features a full steel coat. Firmly welded to the steel bottom plate, the additional jacket forms its own fully sealed container around the inner bottle of the container.

This double wall construction provides effective additional leak protection, even under extreme conditions, such as fire. In exceptional conditions and emergencies, maximum safety is paramount – and that is precisely what the ECOBULK SX-D offers!

The fire-resistance of the SX-D was tested and confirmed in the UL 2368 test conducted by Underwriters Laboratories Inc. The independent organisation, headquartered in Illinois, tests and certifies product safety. Underwriters Laboratories awarded the IBC the UL-certified mark. This means that the container complies with the Fire Protection Directive "NFPA 30: Flammable and Combustible Liquids Code" of the National Fire Protection Association in the USA. It certifies that the SCHÜTZ ECOBULK SX-D is ideally suited for flammable and highly flammable liquids as well as for use in potentially explosive zone 1 and 2 operating areas.



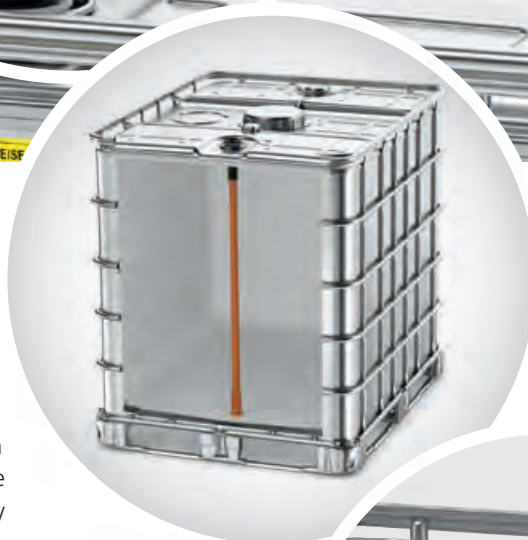


DOUBLE SECURITY FOR EVEN BETTER PROTECTION OF SENSITIVE PRODUCTS

There is a wide range of additional applications for this container. For example, the SX-D can be used for hazardous goods or other sensitive filling goods such as toluene diisocyanate (TDI). Until now, these filling products have been packed in smaller containers with a lower volume, such as steel drums, to ensure that less liquid can leak out in the event of an accident. The double wall of the SX-D greatly reduces the risk of leakage. Should the inner container leak, the additional wall prevents sensitive or flammable media from seeping out into the environment.

FILLING AND EMPTYING

Another special safety feature of the design is that the container's three openings are located in the top plate and are additionally protected by steel caps. An opening with a nominal width of DN 150, a G2 and a S56 bung are used for filling and discharge. One of the bungs can be used to discharge product with a dip-tube system. In combination with a conventional pump system, this guarantees safe and easy discharge. The second bung is located close to the edge of the container and can, for example, be used to completely empty the container by tilting it.



MAXIMUM PROTECTION FOR DEMANDING FILLING PRODUCTS

IBCs and drums from our FOODCERT and CLEANCERT lines ensure comprehensive material, product and process safety. These lines have firmly established themselves in particularly demanding sectors, such as the food and pharmaceutical industries. In the past few years, the big global players in these industries have increased their demands significantly, frequently even going far beyond current statutory requirements. With the new ECOBULK FOODCERT + ASEPTIC and CLEANCERT + DUALPROTECT we are now taking things up to the next level when it comes to safety and cleanliness and are expanding the range of applications to ensure even greater sustainability: as a top product innovation, SCHÜTZ is now offering these IBCs with a liner system including UN approval, thus ensuring maximum quality protection with minimum effort.

THE ECOBULK FOODCERT + ASEPTIC IBC fully meets the specific requirements in the food, pharmaceuticals and toiletries industries; it effectively excludes contamination risks along the entire supply chain, extends the shelf-life of the filling products and ensures consistent quality from filling to emptying. All of these benefits have been achieved by including a special component in this IBC model: an integrated liner which is certified in accordance with the FSSC 22000 industry standard that guarantees the highest food safety. The liner is made of high quality LDPE film which unfolds and aligns itself automatically in the inner bottle during filling. It ensures the highest degree of cleanliness, protection against leakage and also has an EVOH permeation barrier against oxygen. The liner gradually unfolds, meaning that contact between the filling product and the ambient atmosphere is kept to a minimum.

The result is 99 percent less exposure to oxygen than in a standard IBC!



STERILE IBC REDUCES RISKS

As a special measure to rule out microbial contamination during the production of ECOBULK FOODCERT + ASEPTIC containers, the integrated liner and valves are sterilised by gamma radiation with an average dose of at least 15 kGray. This special treatment leads to a sterile state. The IBC inner bottle also forms a highly effective, independent barrier against leakage, even if the integrated liner is damaged, thus providing double protection for the filling product. For maximum safety, cleanliness and optimum ease of use, the IBC is delivered "ready to fill". The packaging does not require additional steam sterilisation of the inner bottle or time-consuming liner assembly, which saves time and money! The ECOBULK FOODCERT + ASEPTIC can be filled and emptied on all conventional lines, including with pump systems and under aseptic conditions.



ECOBULK CLEANCERT + DUALPROTECT

For industries that handle highly sensitive products from non-food segments SCHÜTZ also offers the innovative liner system in the CLEANCERT + DUALPROTECT ECOBULK. The name says it all: this IBC version also offers double protection for filling products thanks to an integrated liner. The IBC features a leakproof inner bottle, thus effectively avoiding leaks even if the liner is damaged. The new packaging solution for technically demanding products is extra



safe and, because it is delivered "ready-to-fill", is also exceptionally user-friendly. Due to its maximum quality protection, the container is ideal for transporting natural and synthetic organic compounds, inorganic compounds and silicones. A good example of an application field is the adhesives industry. The annual volume of adhesives produced in Germany is nearly one million tons. When exposed to oxygen, the majority of these products react by forming a film or even starting to cure. The integrated liner minimises oxygen contact both during filling and inside the packaging, thus preventing the filling product against oxidation. This extends the product's shelf-life and makes it easier to discharge.



TWO NEW MODELS WITH MANY ADVANTAGES

In most multi-use systems there is a significant risk of accidental contamination due to product residues. Not so in SCHÜTZ's two new models. Filling into the integrated liner minimises the general risk of contamination, and there is no risk of the filling product coming into contact with condensate, which can form inside the inner bottle. The liner's oxygen barrier provides additional protection against oxidation, vitamin depletion and microbial contamination. And unlike other container types, there is no need for nitrogen blanketing. UN approval for hazardous goods transport also applies to the IBC version with a liner.

EASY HANDLING – FROM FILLING TO DISCHARGE

Both ECOBULK can be filled via the IBC's standard outlet valve or from above via a filler nozzle which is attached to the liner and can be fitted to different bungs as required. For aseptic applications, both the outlet fitting and the bung used at the filler nozzle can be steam sterilised. The integrated liner unfolds on its own as it is filled. The air in the inner bottle is vented by opening the screw cap. Optionally, the container can also be filled from above using the filling nozzle in the liner.

As a rule, the container is emptied easily and safely gravimetrically through the outlet valve which is securely and rigidly attached to the IBC inner bottle. For liquids with a watery consistency, this method achieves an almost residual free emptying. For more viscous filling products the cap nut can be loosened and the liner and the outlet valve can be carefully pulled out of the container in order to empty it completely. Once the IBC has been emptied, the SCHÜTZ TICKET SERVICE with its worldwide network provides a fast, administrative-free collection service and then reconditions both the IBC and inner bottle in an environmentally-friendly process – giving this innovative system both unrivalled economic and ecological benefits.



AUTOMATIC LOCK: SEAL CAP SYSTEM WITH ORIGINALITY PROTECTION

Seals have a long tradition in history. Thousands of years ago they were used to ensure the intactness of vessels and their contents. The seal of our new AUTOMATIC LOCK cap system for plastic drum closures may not look like a medieval wax seal, but it fulfils the same purpose: it demonstrates originality and protects quality!

The new seal cap system for SCHÜTZ PE drums consists of a plug and a tamper-proof sealing cap, either in red or white. The outstanding feature of the system is that it cannot be opened without breaking the seal cap, as the inner seal ring is firmly incorporated in the ring. The filling product is fully protected against tampering, accidental discharge or contamination. The seal cap is available for a variety of different bung sizes. Trade visitors at Interpack will be able to test the new

AUTOMATIC LOCK cap system at the SCHÜTZ booth, where an automatic F1 tight-head drum capping station will be set up for demonstration purposes.

The filling product is fully protected against tampering, accidental discharge or contamination.

G2-D88 and G2-D78 –
suitable for different bung types:



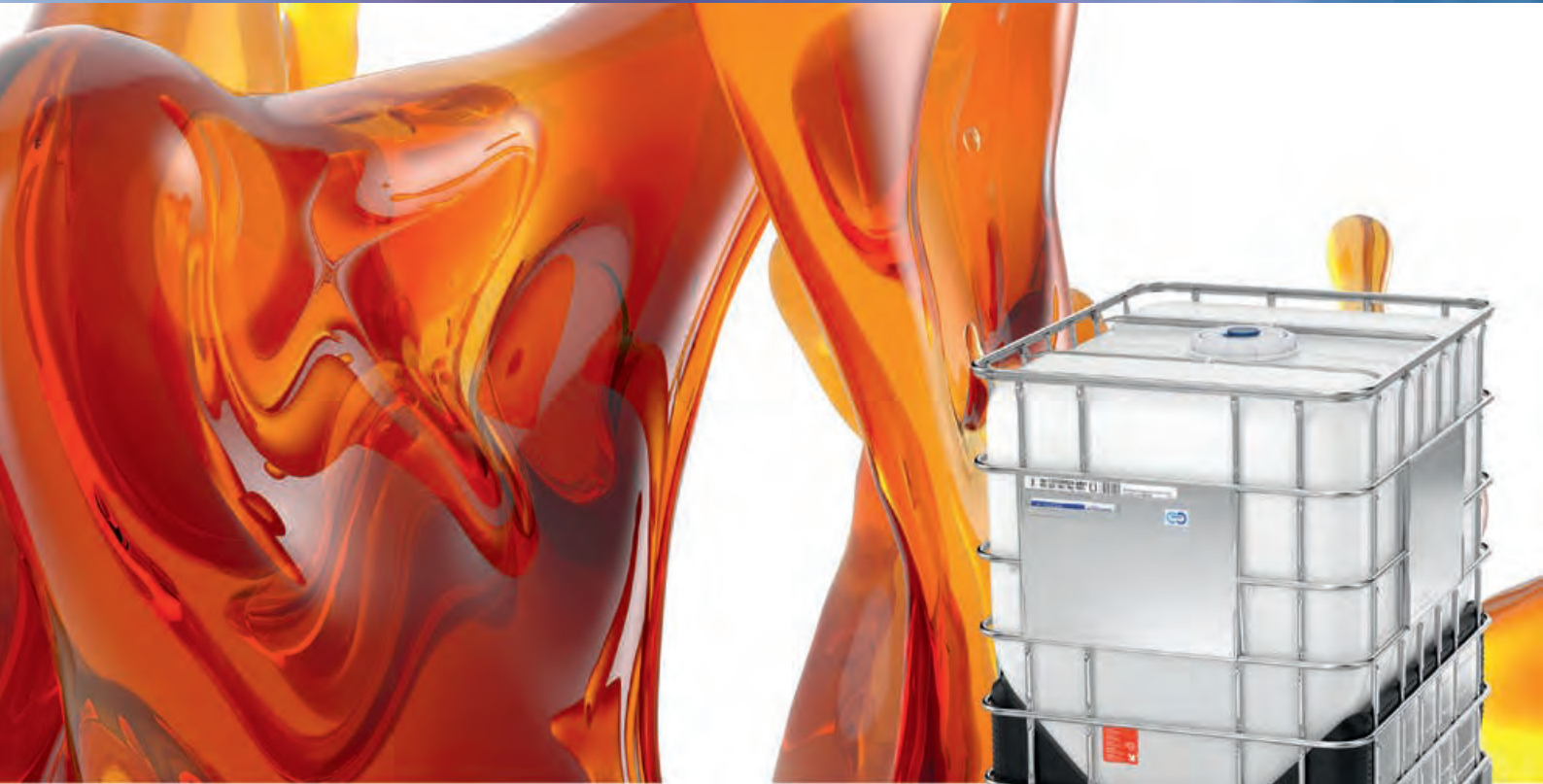
The seal cap can be fitted automatically or manually. To do this, the seal cap is placed on the bung; it centres itself automatically due to the position of the snap latches. Light pressure on the positioned seal cap makes the locking ring snap into place behind the snap latches in the bung. The rigid construction ensures the lock remains securely in place once fitted. The plastic tab connectors on the cap and the inner seal ring tear when the cap is opened, perforating the ring and making it easy to lift off the cap. The cap can be opened and lifted off in a single movement by pulling on the seal cap ring pull, allowing the bung to be unscrewed and the contents to be removed.

A SEALING CAP WITH MANY ADVANTAGES

AUTOMATIC LOCK is the only plastic drum closure system that is suitable for use with automatic filling systems and it offers numerous other advantages over conventional solutions. In contrast, standard plastic caps only close the bung opening without providing seal of originality, meaning that any tampering may remain undetected. With AUTOMATIC LOCK the seal cap is held by the plug and not by the bung. The broken seal cannot be repaired, and any tampering is instantly visible.

Compared with steel caps which are also fitted with a seal function to prevent tampering, the key advantages of the new plastic system are the hygienic and non-corrosive material. Accordingly, AUTOMATIC LOCK is certified for use on our FOODCERT drums for food applications. In addition, the new SCHÜTZ sealing system is exceptionally user-friendly: the integrated ring pull does not require an extra tool for opening, as is the case with steel sealing caps.





ECOBULK HX USED FOR HIGHLY VISCOUS RESINS FROM WESTWOOD AND ITS SUPPLIERS

“To preserve buildings and boost building value” is the mission of WestWood Kunststofftechnik GmbH. The company, which is based in Petershagen, North Rhine-Westphalia, produces highly reactive liquid plastics based on flexible PMMA resins (poly-methylmethacrylate) which are used to refurbish and renovate roof terraces, balconies, flat roofs and underground garages. The company’s resins are also used in highly complex and demanding projects, such as the reconstruction of the Frauenkirche in Dresden. Faced with the challenge of getting the highly viscous material safely and quickly to the building sites, WestWood ran several tests and chose the CLEANCERT version of our ECOBULK HX as the ideal solution.

WestWood specializes in sealing and coating building surfaces and building parts with highly reactive PMMA resins. These liquid plastics can be processed at low temperatures and in relatively high humidity. They cure in a record time of around 20 minutes, which allows the individual layers to be reworked immediately or used in another way. A ramp treated with this

resin is firm enough for use by cars after only six hours. The chemical structure of the acrylic resins makes them elastic and they are free of plasticizers, giving them permanent elasticity.

Until now, the North Rhine-Westphalian company has used steel containers to transport their highly viscous, light-sensitive product. The drawback was the amount of residual product which remained in each container after emptying: between six and eight kilograms. This wasted product represented a significant economic loss. Additionally, all residual product had to be removed from the steel containers in time-consuming manual labour and then disposed of for an extra charge. The washing processes demanded a lot of administrative input and highly complex logistics. For WestWood, day-to-day handling of the steel containers was also highly impractical. In the warehouse, the steel drums could only be stacked 2-high, and they had to be transported in a single layer in trucks, which halved the transport capacity. The substantial weight of each drum – approximately 270 kilograms – also often made it impossible to use the whole loading area of the truck. Two slots had to remain free in order to avoid exceeding the truck's maximum loading capacity. Legally prescribed regular tests for stainless steel IBCs also made the packaging system inflexible.

HX – ONE CONTAINER WITH ALL THE ADVANTAGES

The liquid plastic manufacturer started searching for more efficient solutions to all these application challenges – ideally, combined in a single container. One of the products tested by WestWood was our SCHÜTZ ECOBULK HX. The results were more than persuading: the amount of acrylic resin left in the container after emptying was reduced to less than one kilogram! This is thanks to the special geometrical features of the container: a sloping base with a stable supporting cushion, an optimised outlet area and a low-lying outlet valve. Together, these features ensure optimum residual draining and shorter emptying times when draining the container. They also completely eliminate the need for administration work to plan washing processes and waste disposal costs for product residues. Additionally, the HX can be stacked two- and three-high in the warehouse and two-high in trucks, thus optimally utilizing storage space and reducing transport costs.

**Thanks to the HX,
less than one kilogram
residual product remains
in the container!**

WestWood's highly sensitive acrylic resins have to be stored and transported in silicone-free containers, which is why the



company chose the CLEAN-CERT model of the ECOBULK HX. SCHÜTZ CLEANCERT IBCs are specially produced for use in areas where technical cleanliness and packaging safety are of exceptional importance. As

well as manufacturing according to the FSSC 22000 cleanliness and safety standard, which is currently the most stringent, we also run full FMEA analyses to rule out contamination risks along the entire manufacturing process for our CLEANCERT containers. Optionally, this version is also available with a black conductive outer layer to protect the contents from electrostatic charges, UV radiation and light.

ENVIRONMENTALLY FRIENDLY RECONDITIONING SAVES COSTS

In a direct comparison with a stainless steel system, the HX has a lower acquisition cost, lower cost of cleaning, repairs and collection logistics. With our SCHÜTZ TICKET SERVICE we collect the administration-free containers after they have been used. "Thanks to the numerous advantages of the ECOBULK HX, we have been able to optimize our entire supply chain and also significantly reduce our total operating costs. We were so impressed with the numerous advantages and our experience with this container, that we also recommended it to several of our raw material suppliers from France, South Korea and the Netherlands, who have now started using it and are delighted with the benefits", says Frank Könemann, Purchasing Manager at WestWood.

WestWood Kunststofftechnik GmbH provides sealing services in refurbishment projects for building components and flat surfaces, such as balconies and roofs, for traffic and parking areas, and for special projects such as the renovation of historic buildings. The company is located in the East-Westphalian town of Petershagen, between Bielefeld and Hannover. Founded in 1999, it has grown cons-



tantly and now has a production area of 4,000 square meters. The company employs over 100 people and has a production capacity for PMMA resin

systems of approximately 5,000 tonnes per year. The products are used around the world in 15 countries, including Luxembourg, the UK, Italy, Belgium, Denmark, Switzerland and the USA. In Germany, for example, WestWood resins were used in the construction work at the Frauenkirche in Dresden and the Holocaust Memorial in Berlin.

ECOBULK WINE-STORE-AGE



Equipped with EVOH barrier for controlled oxygen supply, the WINE-STORE-AGE IBC is ideal for storing, transporting and maturing wine. The IBC and its benefits have been thoroughly tested by experts in Australia. Studies are also currently being carried out at the Institute for Oenology of University of Geisenheim – and the initial results are very promising. Compared to conventional tanks, wine manufacturers can save time and costs in their supply chain. At the same time, these new IBCs ensure top food quality.



Connoisseurs know that wine typically matures in barrels or – as a modern alternative – in steel or plastic containers that ensure that only small quantities of oxygen can permeate in. Oxygen is wine's biggest enemy: it is responsible for premature aging, ultimately spoiling the quality and character of the wine.

However, wine also depends on oxygen to mature, as it influences the content of phenols. These are the substances that give wine its colour, tannins and other essential aroma substances that make it appealing for wine drinkers. The maturation process is essentially the storage of wine under highly controlled exposure to

oxygen. This is where our WINE-STORE-AGE IBC can show its true strengths; it has an EVOH barrier that prevents the permeation in and out of oxygen, nitrogen and other gases, enabling the wine to mature under controlled exposure to oxygen. The EVOH barrier also prevents unwanted changes to the wine's characteristics. It protects its aromas, flavours and hence ultimately its quality. Product shelf-life is also extended and product loss due to evaporation is avoided.

SUCCESSFUL TESTS IN AUSTRALIA

Over a period of three years, SCHÜTZ Australia, the Australian wine Research Institute (AWRI) and a winemaker from Central Victoria conducted a series of tests. They discovered that our IBCs with EVOH permeation barriers are not only very good for transporting and storing fine wines, under specific conditions they can also be used for maturation. 1,040 litres of 2014 Shiraz, a red wine from the south of the Bendigo wine region, were used in a comparative test between a barrel and container. A SCHÜTZ WINE-STORE-AGE IBC was filled with a wine where malolactic fermentation had already been completed. Oak chips were added to obtain the typical barrique flavour. A classic red wine needs 40 grams of oxygen per litre before bottling to react with the phenolic components and support the development of pigmented polymers and condensed tannins. The head space in an IBC provided 3 milligrams of oxygen per litre. The wine was decanted at regular intervals to reduce sedimentation, which added a further 6 milligrams per litre. This process was repeated four times at intervals of

six weeks and produced a high quality wine – ready for bottling. Experts constantly monitored the sulphur content and degree of maturity. The result: wine also matures to premium quality in the SCHÜTZ WINE-STORE-AGE IBC!

**Under specific
conditions our IBCs
with EVOH permeation
barriers are also highly
suitable for maturing
fine wines.**



LOWER PERMEATION IS AN ADVANTAGE

In direct comparison: in a classic wooden barrel up to 27 milligrams of oxygen permeates per litre a year; this goes down to 20 milligrams in a one-year-old barrique barrel and only 1 milligram in our six-layer IBC. This makes our WINE-STORE-AGE IBCs ideal for the safe, long-term storage of wine. Oak chips can even be added to obtain the typical barrique flavour.



COOPERATION WITH THE UNIVERSITY OF GEISENHEIM

In order to popularise the use of IBCs for the maturation of wine in Europe, SCHÜTZ is currently cooperating with the Institute of Oenology at the renowned University of Geisenheim, including an on-going integrated test series. Here, since the beginning of the year, a 2016 Riesling from the Rheingau region has been stored in a WINE-STORE-AGE IBC with an EVOH barrier. Intermediate measurements of the levels of volatile and stable sulphuric compounds showed that the EVOH barrier protects the wine against oxidation. The university, which is the world's leading institution in this field, also conducted sensory testing which revealed that wine from the SCHÜTZ IBC has all the typical attributes of the variety, it is well-structured and of excellent quality.

ADVANTAGES IN SAFETY, CLEANING, LOGISTICS AND COSTS

Plastic containers for wine and other foods need to comply with very specific standards. As part of the FOODCERT range, our WINE-STORE-AGE IBC is certified in accordance with the highest industry standard, FSSC 22000. Fine wines are packaged in our premium standard product for the ultimate food safety. The high hygiene standards that apply to this product range mean that the high quality filling product is optimally protected against contamination. The container is made of pure HDPE for complete odour and flavour neutrality. Compared with conventional containers,

the purchase cost and cost of working capital is much lower.

Two other advantages are the almost complete emptying and the fact that the containers are very easy to clean, which was also tested and verified by the University of Geisenheim. To avoid microbiological contamination it is important that residues in the container are avoided. Our IBC can be almost completely emptied thanks to a special valve. The large diameter of the cap and the butterfly valve permit easy manual cleaning. The tests in Geisenheim showed that all residues, such as yeast or wood chips, could be easily rinsed out.

The IBC also offers unrivalled logistical benefits: the cubic shape means that space in freight containers can be used more efficiently. A 20" sea container holds a maximum of 18 IBCs or a total of 12,000 bottles packed on pallets. The transported quantity is 18,000 litres compared with 9,000 liters. This halves the share of freight costs, based on the liter price. An additional benefit is safer and easier handling, e.g. with forklift trucks. The design allows the containers to be stacked securely, up to a maximum of four IBCs during storage and up to a maximum of two filled IBCs during transport. A further plus: according to a study conducted by the AWRI, compared with oak barrels, cost savings of up to 80 percent can be achieved when ageing wine in the SCHÜTZ WINE-STORE-AGE IBC. Industry experts expect

that the demand for IBCs in wine production will continue to increase. For smaller vineyards in particular these containers are a cost-effective alternative for storing and maturing wine.

IDEAL FOR EXPORT

The design of SCHÜTZ IBCs makes them ideal as a transport container for land and sea export. A filled WINE-STORE-AGE IBC can be transported even during wine storage and maturing. The time a young wine needs to mature can be efficiently used during shipping en route to the target market. Once it arrives, the wine can be bottled and sold weeks earlier than if waiting for it to mature before shipping.



SAFEGUARD SYSTEM FOR OUTLET VALVES – WITH OPTIONAL ORIGINALITY PROTECTION



We guarantee the safety of the products in our IBCs in many ways. One important component is the outlet valve with an integrated lock that safeguards the container against unintentional opening and tampering, and also protects product originality.



The new lock is easy and intuitive to use. The latch is simply pressed up with a thumb; no tools are required and there is no risk of parts being dropped or lost. Pressing the latch up releases the handle of the outlet valve which can then be turned to discharge product. After discharge the handle is moved back to its original position to close it. The tab can now be pressed down again; it will snap into place to lock the outlet valve easily once it is closed. The possibility of securing the valve quickly and easily after every closing is a big advantage. Transport laws demand that the container is securely closed, and this is also required under the terms of the SCHÜTZ TICKET SERVICE when the container is collected.

SEALED FOR SAFETY

Another feature that can provide additional protection is SCHÜTZ's originality sticker. This sticker is attached to the closed lock at our factory. The seal breaks when the tab is pushed up for the first time to open the container, instantly showing that the tap has been opened. The originality strip protects the filling product from tampering. It effectively rules out the risk of contamination and protects the original quality.

A filled ECOBULK is always transported and stored with a closed and secured outlet valve. In order to open the valve, the customer must first remove the screw cap. This removes the red PE disk and reveals the seal foil as a concealed originality protection. Until now, there have been two options to secure the outlet valve: a steel safety screw or a plastic safety clip. In day-to-day operations both were unsatisfactory, as an additional tool was needed to open the screw and there was always the risk of the screw getting lost. This also applied to a small component like the safety clip, which posed the additional risk of the clip being dropped when the valve was opened making it impossible to secure the valve at a later point. For this exact reason, our teams worked on an innovative solution. The result is the new SCHÜTZ outlet valve lock. It consists of a yellow tab that is integrated in the valve between the casing dome and the handle. It is the new standard and will gradually be replacing the existing options of screw or clip.



TWO CONTAINERS – ONE ORIGINAL

ECOBULK



SCHÜTZ uses a globally standardised reconditioning process to turn a used ECOBULK into a 100-percent compatible RECOBULK with the same standard specification – in keeping with our corporate philosophy of sustainability. The recently introduced brand name illustrates clearly that whichever of the two IBC models our customers use, they know they are always getting the same original quality for the highest safety, including a new UN approval.

With the ECOBULK, SCHÜTZ has long established itself as the global market leader in the IBC segment. From the very outset, the modular design has been an integral part of our packaging concept and a key factor for the success of our group. Thanks to its flexibility, the container can be precisely configured to the filling product and the individual requirements of the customer's supply chain. From the inner bottle to the bottom plate and components such as outlet valves and screw caps, we are continually

improving the overall performance and opening up new application fields through a process of constant development.

The modular design of the ECOBULK is also a decisive factor for the recyclability of the containers. This makes the SCHÜTZ IBC system environmentally and economically effective, which is another reason why it is so widely used in many segments. As a pioneer in the industry, we first started reconditioning in 1976 and, as the

first manufacturer, have guaranteed the collection of used containers since 1980. The SCHÜTZ TICKET SERVICE has firmly established itself as an environmentally-friendly recycling system and has become the world's biggest manufacturer-operated network for the collection and reconditioning of empty IBCs.



RECOBULK – THE NEW NAME FOR RECONDITIONED ORIGINAL QUALITY

Just like our new packaging, from the very start SCHÜTZ applied the highest quality benchmarks to the reconditioned containers and established a dedicated standard. With RECOBULK, we have given this high reconditioning standard its own brand name. In order to completely rule out any potential risks that could result from the parallel use of new and used packaging, reconditioned IBCs offer exactly the same high level of safety as new ones. ECOBULK and RECOBULK

are available in exactly the same standard specification. Both have original UN approval. Our customers know that regardless of whether they use an ECOBULK or a RECOBULK, both products offer the same safety and performance! Customers also benefit from the system's flexibility, reliability and sustainability, as the production of each new RECOBULK saves around 100 kilograms of CO₂ emissions compared with a new IBC.



STANDARDISED PROCESSES FOR MAXIMUM SAFETY

Production and reconditioning takes place on state-of-the-art lines at our 47 production and service sites in accordance with uniform environmental, safety and quality management standards. Collected ECOBULKS are first assessed according to the last filling product they were used for on the basis of our internal filling product database. The correct handling method is determined using the appropriate material safety data sheet. Then the inner bottle is removed from the steel grid, opened and any remaining product residue is

Production and reconditioning takes place on state-of-the-art, certified production lines.

removed and disposed of separately. All other components, such as screw caps, outlet valves and label plates, are replaced with new parts. Only the robust steel grid and the bottom plate are repaired if necessary and are reused. The plastic components that have been removed are all recycled and are used to make new parts, for example plastic skids, in a completely sustainable process.

RECOBULK



CONTAMINATION-FREE STIRRING PROCESSES WITH THE SCHÜTZ IMPELLER

From manufacturing to packaging, transport and final processing: viscous products such as flavors, varnishes, adhesives, resins or coatings for the automotive industry require careful handling along the entire supply chain. To achieve an even consistency, many viscous products need to be stirred prior to use. In many cases, this is necessary before the product can be discharged from the IBC.

However, stirring can present a critical risk for the quality of the filling product: the insertion of a multiple-use stirrer can pose a potential contamination risk for sensitive filling products. Every time the packaging is opened and any contact with other materials can lead to contamination. Remnants on the stirrer can never be ruled out, even after cleaning. To protect valuable viscous sensitive media, SCHÜTZ has now developed an efficient tool: the IMPELLER.

This single-use stirrer is available for all 1,000 and 1,250 litre ECOBULK types with DN 150 and DN 225 filling openings. It is suitable for use in ex-zones 1 and 2. What makes this product so innovative is that IBCs with an IMPELLER can remain closed along the entire supply chain, from filling to emptying. At the same time, they allow filling products to be easily and effectively stirred. There is no need for conventional stirrers and the danger of contamination is significantly reduced.

EASY DRIVE ADAPTATION

The IMPELLER is connected to the screw cap of the IBC and is pre-inserted at the factory. While the IBC is being filled the IMPELLER is either briefly removed or remains in place, depending on the filling process and container configuration. The container can be safely filled from the bottom up with a separate S56x4 bung, allowing the screw cap to remain closed. To stir the contents a conventional stirrer drive is used; a steel shaft with dimensions and geometry configured to fit the drive that is being used is inserted into the shaft of the IMPELLER. The drive turns the IMPELLER. The steel shaft remains completely clean during the stirring process and can be easily removed for further use.

THE RIGHT SOLUTION FOR TOP PERFORMANCE

Another special design feature of the IMPELLER is its flexible wings: they change their position depending on the stirring speed and can be adjusted to the filling level. Reducing the speed will cause the wings to sink, thus ensuring optimum results even at low filling levels thanks to swirling. No air enters the container during stirring and no bubbles form, meaning that the entire process is gentle for the product. Low speeds with a maximum of 200 revolutions per minute provide optimum stirring results.

Paints and varnishes

Food and pharmaceutical products

Adhesives and sealants

Other viscous products

Other chemicals

HIGH EFFICIENCY – COMPLETELY RECYCLABLE

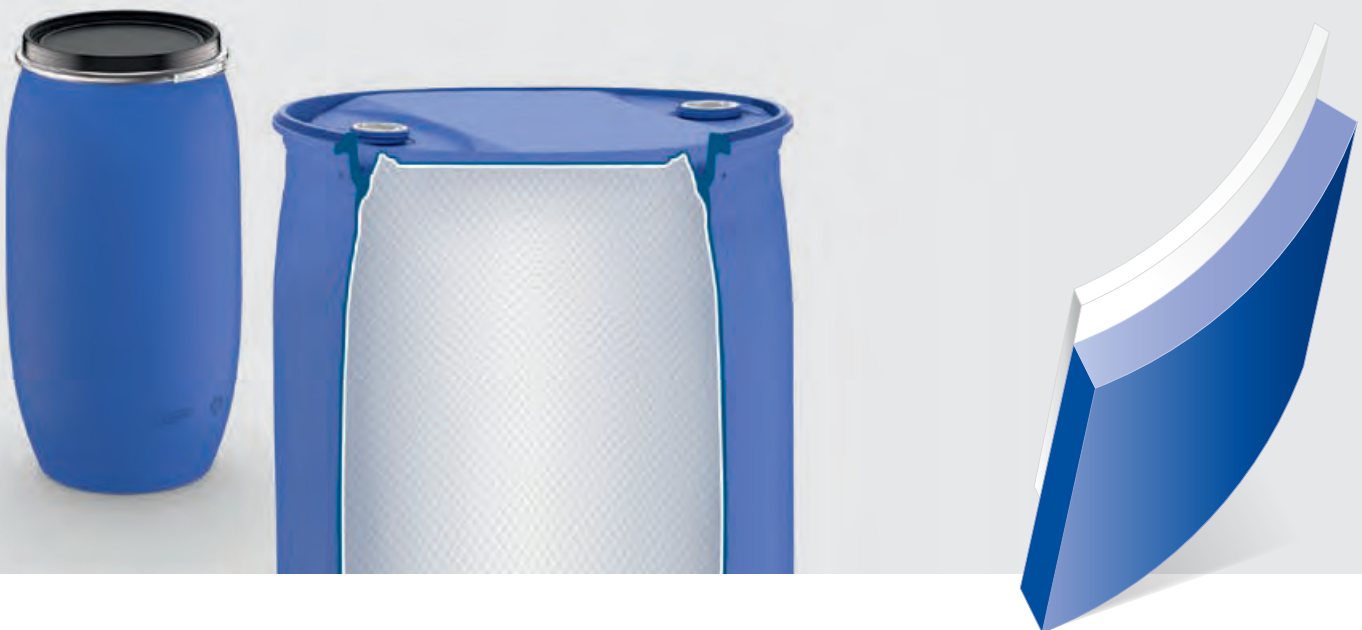
The IMPELLER eliminates the risk of contamination due to residues of other products on the stirrer. Customers also benefit from the fact that there is also no need for time-consuming, costly cleaning processes: the packaging system ECOBULK plus IMPELLER saves time and administration costs along the supply chain.

The outer parts of the impeller are made of pure HDPE. The filling product does not come into contact with steel, as in conventional stirring systems, which is another advantage when it comes to product purity. The system also offers environmental benefits: empty IBCs with the IMPELLER are collected by the SCHÜTZ TICKET SERVICE, the bottle and IMPELLER are recycled back into HDPE granulate. This material is used to make new SCHÜTZ products, e.g. plastic pallets.



NEW INNER LAYER FOR PE DRUMS INCREASES PERFORMANCE AND COMPATIBILITY

We make good things even better! At SCHÜTZ we are continuously developing our extensive portfolio of products in order to enhance performance and increase the range of potential applications. Our F1 and S-DS1 drums are now available with an optional, natural inside layer.



The inner layer consists of the same natural, high-quality HDPE material as the inner bottles of the SCHÜTZ ECOBULK. This new feature is based on our Security-Layer technology which allows several functional layers to be extruded simultaneously.

Through the technological development an increase in the range of applications for PE drums to equal that of our IBCs, giving our customers greater flexibility in the choice of packaging. Regardless of whether a product is packed in ECOBULK or PE drums, the same material means identical pro-

duct compatibility. As several factors influence the choice of packaging, the new layer simplifies matters: products that have been filled in IBCs can, in most cases, simply be transferred to drums.

The quality of the filling product is optimally protected thanks to the high purity of the packaging materials.

The new, natural-coloured inside layer of F1 and S-DS1 drums offers further advantages. It contains no colour pigments and the quality of the filling product is optimally protected thanks to its high purity. We have also succeeded in further enhancing resistance to stress cracking.

IMPRINT:

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