

Latest Trends of Aseptic Packaging for Tomato Processors

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Members of the Aseptic Bag Manufacturers Association (ABMA)





What ABMA does

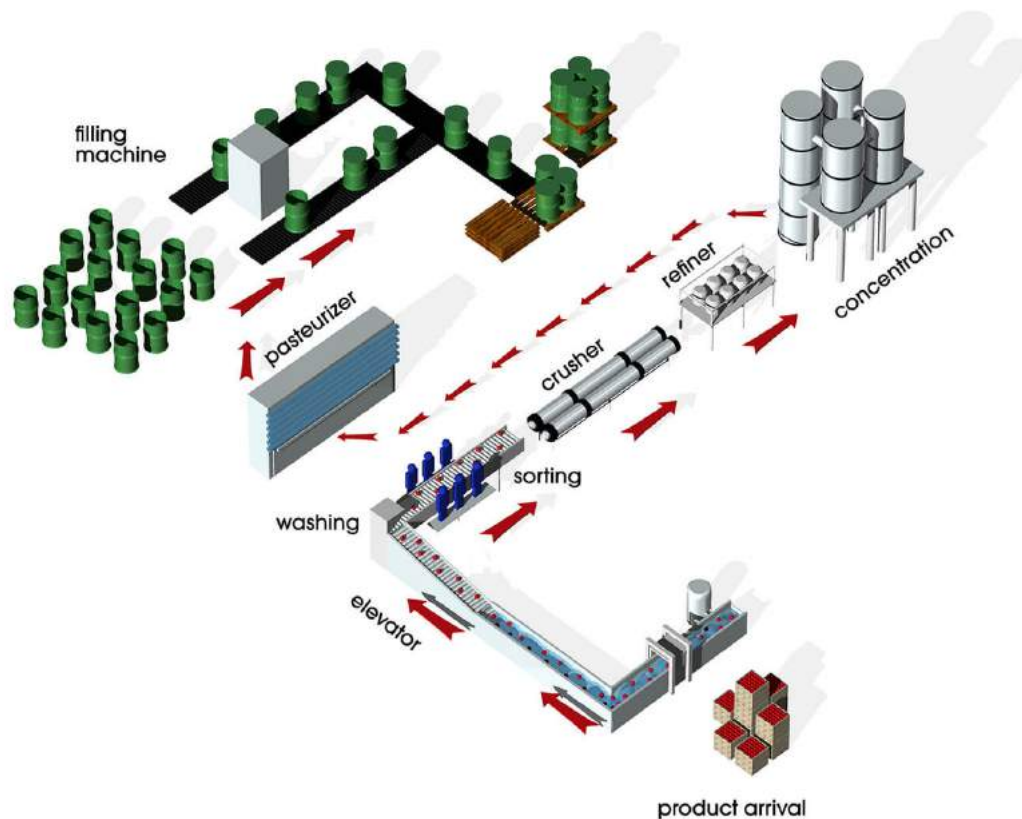
- Promote the development of the aseptic bag packaging market
- Define recommendations on process conditions and use of aseptic bags that the members can suggest to their customers in order to ensure the correct use of bags
- Gather information on current legislation and regulations about the use of aseptic bags, as well as on their re-use, recycling, or proper disposal
- Be the industry's voice and represent the general point of view of the association's manufacturers with other institutions and organisations in the aseptic packaging sector
- Represent the members and their interests to the various national and international authorities and institutions, whenever the point of view of the European manufacturers of aseptic bags may usefully be presented



History

- In the 1970's, the aseptic filling machine was developed which enabled the bag-in-box packaging process.
- Prior to the bag-in-box filling, the aseptic process had been limited to cans and was most commonly used for dairy products.
- Aseptic packaging for bulk bag-in-box allowed processors to provide out-of-season products throughout the year, revolutionizing the storage and transportation of processed fruit and vegetable products.
- The industry's advancements in filling equipment and bag-in-box technology provide solutions for retail and institutional establishments who wish to offer coffee, dairy, juice, smoothies, and other functional beverages, while retaining nutritional value.


Filling process



- Tomato preparation (receiving, washing, sorting, chopping)
- Hot/Cold break
- Refining
- Evaporation
- Aseptic processing (sterilizing)
- Aseptic filling

ABMA Technical Documents (May 2020)




Association of Bag Manufacturers

RULES AND DIRECTIONS FOR THE USE OF ASEPTIC BAGS

The good preservation of the product is directly related to connect with the correct utilisation of the aseptic bags.

The following instructions are of importance:

PRESERVATION AND HANDLING:

If the carton containing the aseptic bags is received damaged, to such extent that the contents are exposed, do not use the bags. Keep the aseptic bags in protected warehouses and under correct environmental and hygienic conditions. Bags must be stored between 5°C (41°F) and 32°C (90°F).

In particular keep bags away from:


- high temperatures,
- direct sun,
- poisonous or ill smelling articles.

The bag will remain aseptic if not tampered with. Be careful not to damage the bags when opening the boxes. Collect the bags from their boxes individually only at the moment of the filling process, carefully avoiding any possible damage.

All bags remaining after filling operations must be carefully packed in the original cartons in order to avoid bag damage.

It is the expectation that unfilled bags will be suitable for use 36 months from the date of Manufacture, provided that the storage and warehousing conditions detailed above are adhered to. It is recommended that the principle of 'First in First out' should be applied on unfilled bags. If this time period is exceeded it is a requirement to contact your bag manufacturer prior to usage.

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Association of Bag Manufacturers

ABMA SPECIFICATIONS FOR ASEPTIC BAGS UP TO 1500 LITRES

These recommendations were designed to specify aseptic bags up to 1,500 litres volume.

They are always overruled by national law whenever this requires lower tolerances or individual agreements between supplier and customer.

These specifications were developed by following ABMA members:

- Aran Packaging
- Liquibox
- Goglio
- Scholle IPN
- Smurfit Kappa Bag-in-Box

www.aseptic-packaging.org

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Main Advantages of Aseptic Bags

- Industrial bag-in-box packaging protect and safely deliver bulk amounts of flowable food and chemical products in packaging as large as 420 gallons (1,600L)
- Safely deliver base materials and ingredients to the production facility
- Flexible liners allow reuse of rigid bulk containers like IBCs and drums
- Less water needed to clean and service bulk containers
- Sterile, closed-loop systems protect products from exposure
- Optimized product-to-package ratio leaves minimal waste volume
- Less greenhouse gas emissions and energy used during production
- Separate sterilization of the product and the container increases efficiency and effectiveness of the process



Specifics of (bulk) aseptic packaging for tomatoes

- Dedicated packaging structures to suit product specifications
- Dedicated oxygen and moisture barrier to prevent product spoilage
- Flex cracking resistance





Examples for IBCs and drums



Specifics of (consumer/HORECA) aseptic packaging for tomatoes



- Dedicated packaging structures to suit product specifications as well as withstand storage/handling procedures.
- Dedicated oxygen and moisture barrier to prevent product spoilage (contact surface is higher in bag in box)
- Flex cracking resistance
- Fitments and closures to improve packaging convenience



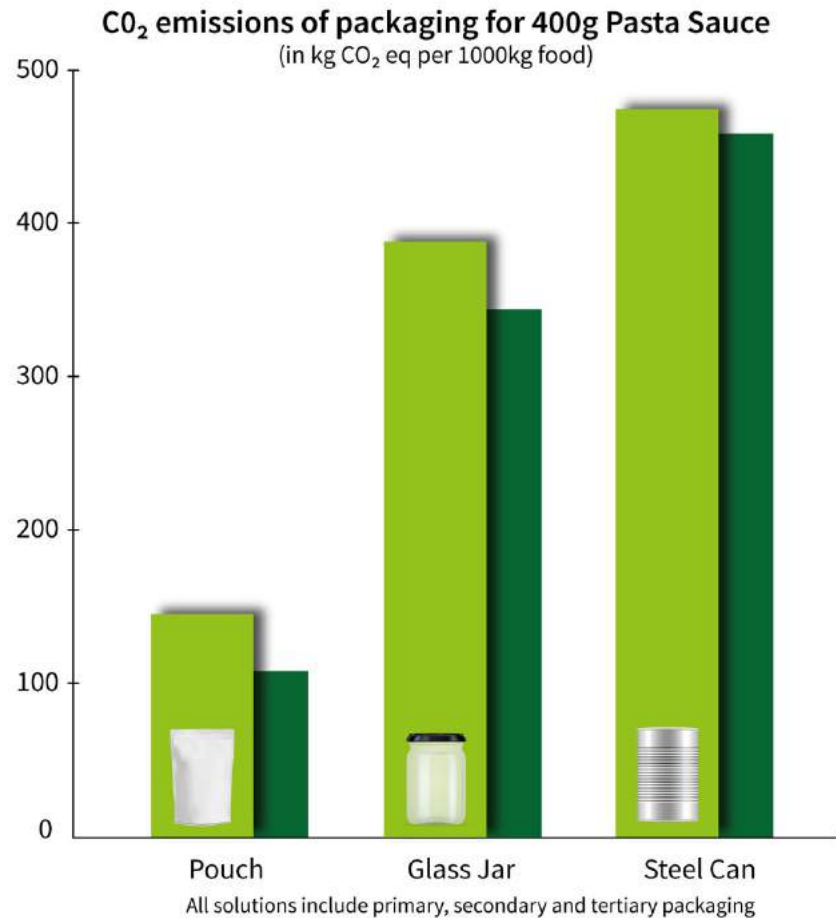
Environmental Advantages of Aseptic Bags

Less packaging and product waste for better energy and resource efficiency

- Aseptic bags are optimized to preserve products while reducing the amount of wasteful and costly dunnage.
- Aseptic bags provide a packaging option for fillers that delivers a safer, more reliable pack, resulting in less product spoilage. Aseptic bags offer customers peace of mind knowing that their bulk bag-in-box products are protected from flex-cracking and harmful oxygen transmission.
- No refrigeration is required resulting in significant energy savings.
- Bag-in-box systems eliminate the need for metal cans and/or rigid plastic containers.
- Bags represent a saving up to 70% on raw materials compared to rigid containers of the same volume.



Impact of Different Packaging Solutions on Climate Change



CO₂ emissions at current recycling rates

CO₂ emissions at 100% recycling rate

From 0 to 100%:
Recycling of flexible packaging pouches for pasta sauce reduces carbon footprint **by 26%**



Closing the gap: How to make flexible packaging circular?

- **Improve the packaging structures** (e.g. mono where appropriate/feasible → accelerated evolution) **but acknowledge situations where environmentally and/or commercially not favourable** (e.g. thicker materials, less functionalities, operational speed of existing equipment, costs of material)
- **Improve recycling infrastructures** (the focus is not necessarily new but increase quickly the capacity of existing technologies to get started)

Revision of EU Packaging Legislation: Main measures proposed (30 Nov 2022)



- From a **Directive** to a **Regulation**
- **Higher recycling targets** at Member State (MS) level **remain** (in last revision and applicable from 2025, e.g. aluminium 50% and 60% in 2030)
- **Waste prevention targets** at MS level (5% by 2030, 10% by 2035, 15% by 2040 vs 2018)
- **Recyclability** as essential requirement (2030 and 2035 “at scale”)
- **Plastic Recycled Content** targets (2030 and 2040)
- **Bans** (as of entry into force. 2026/7 ?)
- **Reuse targets** (from 2030 and 2040)
- ...



Plastic Recycled Content

- Target is set as a minimum ‘per item of packaging’
- Pharma and medical (primary) packaging exempted
- Post-consumer recycled (PCR) plastic only
- Applicable to the plastic part of packaging
 - Potentially applicable to all types of packaging (not only the plastic dominant ones)
 - No threshold mentioned (for a minimum share of plastic fraction in the packaging) for the measure to apply
 - No exemption for inks. adhesives. varnishes or coatings

Plastic RC target	2030	2040
Contact sensitive PET	30%	50%
Contact sensitive (non-PET)	10%	50%
SUP Beverage bottles	30%	65%
All rest of plastic packaging	35%	65%



Bans for Single Use Packaging

- Packaging containing **individual portions or servings**, used for condiments, preserves, sauces, coffee creamer, sugar and seasoning in HORECA sector (except such packaging provided together with takeaway ready-prepared food intended for immediate consumption)
- Packaging used to serve **food and drinks filled at the point of sale** for consumption within the premises of an HORECA establishment
- **Transport packaging** used between own & partner sites and for transportation within the same Member State (→ via mandatory 100% reuse)



Reuse Targets for Transport Packaging

- Very ambitious targets set for most types of transport packaging:
30% (2030) and 90% (2040)
- Except if between sites of same economic operator or within same MS → Mandatory reusability
- This obligation applies to pallets, boxes, excluding cardboard, trays, plastic crates, intermediate bulk containers, drums and canisters of all sizes and materials, including flexible formats
- Targets to be applied at operator level (in units put on the market per year)



Timeline PPWR



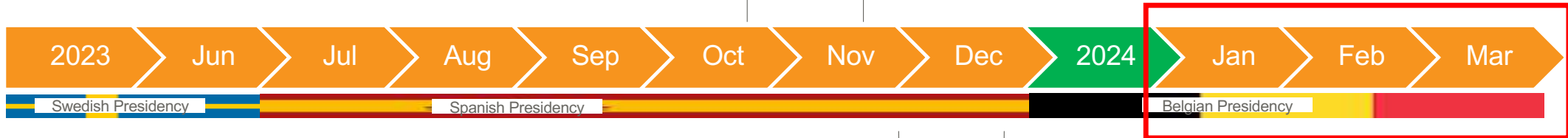
European Parliament

Involved committees of EP:

- **ENVI** (Environment)
- **AGRI** (Agriculture incl. food and beverages)
- **ITRE** (Industry)
- **IMCO** (Internal Market)

Vote in Plenary (20-23 Nov)

ENVI vote (23-24 Oct)



Council of the European Union

EU27 environment ministers are in charge. An intermediate body made of national diplomats (**Working Party on Environment**) meets on a regular basis.

Potential agreement on a General Approach (18 Dec)

Potential interinstitutional negotiation

European Elections (June 2024)

Conclusions



Aseptic bags are

- an essential part of the tomato value chain
- saving packaging resources and preventing waste
- enabling safe transport of products over long distances
- permitting storage times for perishable goods
- one of the most environmental packaging friendly solutions

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