FORM-FILL-SEAL FILL-SEAL



PACKAGING SOLUTIONS



Alfa Machine is a global leader of Form-Fill-Seal (FFS) machinery for rigid plastic food packaging. We have four decades of experience providing custom FFS machines for cups and tubs in a wide range of appealing shapes and filling complex range of products. Alfa Machine prides ourselves in providing highly customised packaging solutions of premium quality, maximum production efficiency and personalized after-sales support.

Utilising our expertise in filling and sealing, Alfa Machine also manufactures Fill-Seal (FS) machines, known as Cup Fillers for preformed cups and containers, covering a broad range of products from pot set yogurt to chunky sauces, giving customers flexibility to source their own cups.

Driven by respect to our heritage in producing Traditional Yogurt, Alfa Machine has continued its technical advancements providing consistency of production and, simultaneously, preserving the basic principles of the traditional process. Our latest achievement is a completely automated filling line for Traditional Yogurt made in preformed cups on tray hot filling system with buffer, inoculation station and tray stacking for fermentation storage.



1983

Year of establishment Design, manufacture & after-sales support of FS machines.

1987

- Participation in Greek Italian & Middle Eastern exhibitions.
- International Sales begin (Middle East).

1985

1st Thermoforming

WORLDWIDE GREECE POLAND Alfa Machine premises **SWEDEN** TURKMENISTAN BULGARIA SLOVENIA BELARUS ITALY CANADA RUSSIA **GERMANY** DENMARK UNITED KINGDOM IRELAND | ROMANIA PORTUGAL USA JAPAN CUBA IRAN BAHREIN INDIA TUNISIA SAUDI ARABIA MALAYSIA DEMOCRATIC REPUBLIC OF CONGO SYRIA BRAZIL ISRAEL **AUSTRALIA** CYPRUS SOUTH AFRICA EGYPT TURKEY ZEALAND 2008 2017

120+

CUSTOMERS

1995

- Complete re-designing of FFS packaging machinery.
- Collaboration with another European supplier of FFS machines
- Design and manufacturing of the 1st FRV split-mould negative curve type machine
- 1 st participation in Interpact international exhibition.

2010

Development and successfull installation of four large-scale FFS machines with IML system for the decoration of the cups.

2021

Design & manufacture of the 1st completely automated line for filling traditional yogurt (with milk skin).

320+

MACHINES INSTALLED

COUNTRIES



YOGURT & DESSERTS



TRADITIONAL YOGURT (WITH MILK SKIN)



CREAMS & SPREADABLE CHEESE



BUTTER & MARGARINE



TOMATO PASTE, SAUCES & DIPS



FRUIT & VEGETABLE PUREE



PROCESSED MEAT



WET PET FOOD



HAZELNUT PASTE, PEANUT BUTTER, TAHINI



JAM, MARMALADE & JELLY

With Alfa Machine's long extensive experience across the food industry, we have developed many innovative and efficient filling solutions. Our customized solutions fill products from warm milk for pot set yogurt to viscous sauces and processed meat, with or without particulates whilst ensuring high filling accuracy and providing you the flexibility to process several products on the same machine. Alfa Machine's technical expertise guarantees both the quality of the product and the integrity of the packaging, even when filling products with high temperatures.

KEY FEATURES:

- Filling nozzles appropriate for any liquid to viscous product with or without soft particulates up to Ø12mm.
- Thick product handling for accurate dosing (i.e. mayonnaise, margarine, processed meat).
- Cold or hot (up to 93°C) filling process.
- Drip-free filling process.
- 316L stainless steel construction.
- Aseptic type dosing pistons.
- Servo-piston driven operation of dosing pistons for optimum accuracy: ±1% on homogenous products.
- Hygienic design of the filler in order to eliminate product residue accumulation, according to EU safety standards.
- Fully CIP & SIP connectable.





- Double jacket product hopper and heated filling head.
- Agitator with stainless steel motor.
- Mixed & multi product dosing.
- Just-in-time fruit injection with dynamic inline mixers.
- Flowmeter, recommended for liquid products.

Packaging Solutions

Alfa Machine provides a holistic approach, by examining all the aspects of each individual project, in order to offer tailor-made solutions according to your specific packaging requirements. We assist in packaging material research as well as the design of a customer appealing thermoformed shape, with or without label decoration, embossing and integrate new techniques for better & sustainable results.



Conical multi-cups



Conical single cups



Rectangular & oval cups



Double-compartment tubs



Mini portions



Split mould special containers

Processability of: PET, PP, PLA, PS, PVC, and other multilayer packaging materials.

Alfa Machine cooperates with leading packaging material suppliers in order to advise you on the best material solution according to your packaging needs. Each material has its own advantages and disadvantages, and your choice will depend on various factors such as the product being packaged, the intended use, and the environmental impact. We will work with you to optimize your packaging for factors such as consumer experience, durability, sustainability, and cost-effectiveness.

Given the increasing consumer and packaging industry awareness of the environment, Alfa Machine is determined to be a sustainable packaging equipment supplier. We are the first to develop the technology for multipack PET & PP recyclable packaging with high oxygen and moisture barrier properties which maintains product freshness and visual appeal. Our hot filled and retort-capable packaging enables shelf-stable products eliminating the need for refrigeration to minimise food waste and supply chain carbon footprint.

Developed for minimum footprint and entry level investment, these compact FFS machines offer all the advantages of FFS technology; simple and intuitive HMI, low operating costs, simple maintenance and minimal downtime.

PRODUCTION CAPACITY:

PACKAGING	MF 18	MF 24	
Mini-portions*:	15,000 pcs/hour	21,500 pcs/hour	
Large tubs*:	6,000 pcs/hour	9,000 pcs/hour	

^{*} Depending on project specifications



KEY FEATURES:

- Quick investment payback.
- Punching unit for single cups and/or multipacks with minimum waste material.
- Combination of air filters supplying clean air in the forming area (air filter, active carbon filter).
- Advanced base and lid material tracking for individual print lidding, consistent sealing and cutting of each cup.
- Maximum flexibility and user-friendly interface of HMI.
- Easy to operate and maintain.
- Chain free indexing for reduced maintenance and packaging trim waste minimization.

- Modified atmosphere packing with inert gas flushing (under 1% residual oxygen).
- Servo-motor driven output conveyor with stainless steel cup holds for safe and accurate transportation.



FRS & FRS-L series



FRS series are appropriate for a wide spectrum of possible applications, packaging shapes and materials. Specially developed to offer reliable continuous operation with minimum labor, and maximum cost effeciency due to remarkable reduction of the scrap material. Alfa Machine's technical expertise guarantees the optimal process of premium packaging materials for any kind of product viscocity, composition and filling temperature. Furthermore, the advanced hygiene of the FRS and FRS-L series, helps preserving the quality and maximizing the shelf life of the final product.





PRODUCTION CAPACITY:

PACKAGING	min	max
Mini-portions*:	18,000 pcs/hour	52,000 pcs/hour
Cups with 65x65mm top rim* and full-body label:	7,000 pcs/hour	31,000 pcs/hour
Large tubs with 78x97mm top rim*:	6,000 pcs/hour	12,000 pcs/hour

^{*} Depending on project specifications

KEY FEATURES:

- Advanced base and lid material tracking for individual print lidding, consistent sealing and cutting of each cup.
- Punching unit for single cups and/or multipacks.
- Servo technology employed in every station of the machine.
- Combination of sterilization filters supplying clean air in the forming area, consisting of: pre-filter, active carbon filter and sterilization filter.
- Maximum flexibility and user-friendly interface of HMI.
- Easy to operate and maintain.
- Chain free indexing for reduced maintenance and packaging trim waste minimization.

- In Mould Labelling (IML) system.
- Modified atmosphere packing with inert gas flushing (under 1% residual oxygen).
- Ultra-Clean hygiene level equipped with:
 - Class 100 clean air supply unit (coarse dust filter, fine dust filter, HEPA filter H14).
 - Closed tunnel with sterile air overpressure, extended from the forming area up to the sealing station.
 - UV-C system or Pulsed-UV light (up to LOG3) for cups and lid material sterilization.
- Servo-motor driven output conveyor with stainless steel cup holds for safe and accurate transportation.
- Dual ionizing bars for the base material, equipped with dust vacuum unit.
- Extended operation with double reel feeders for base, label and lid material for minimal downtime.
- Integrated servo-driven traverse printer.

In-Mould-Labelling (IML) system for FRS-L series



Adding a label not only improves the final appearance of the cup but also improves the strength of its sidewalls, allowing the use of a thinner base material film. Alfa Machine offers a wide variety of labelling solutions depending on the cup shape, on both cold and hot filled cups, achieving absolute accuracy in the application of the label.

IML Options:

Full body or half body label plus the bottom side



2-side label plus the bottom side



4-side label plus the bottom side



Special label with 2+1 sides for double compartment cups



Multi-Punch cutting/scribing station:

- Multipacks of PET, PP, PS and other multilayer material.
- Stainless steel construction with special stainless steel alloys used for knives, matrix and stripper plate for extra strength and durability.
- Servo-motor driven operation for accurate cutting.
- Automatic Positioning System.
- Easy adjustment of knives operation depending on material thickness.
- Optional auto-washing & lubrication system.



Cutting format:

Single cups



Multipack of 2 cups



Multipack of 4 cups



Multipack of 6 cups



Multipack of 8 cups

FRV series

The FRV series are designed to offer packaging shapes which are impossible for any other traditional FFS machines. An FRV machine incorporates all known FFS advantages but what differentiates it from other FFS series is the ability to form special geometry of containers with external body curves like vase shapes, using split-mould technology. It is the most reliable and economic solution for cups with thread for reclosable packages and due to its innovative design offers large savings on packaging materials.



PRODUCTION CAPACITY:

PACKAGING	min	max
400ml cups with Ø85mm top rim*:	4,000 pcs/hour	4,500 pcs/hour
180-200ml cups with Ø60mm top rim*:	6,500 pcs/hour	7,000 pcs/hour

^{*} Depending on project specifications





KEY FEATURES:

- Special geometry tailor-made cup.
- Punching unit for single cups.
- Servo technology employed in every station of the machine.
- Stainless steel chain with spikes for the advancing of cups.
- Combination of sterilization filters supplying clean air in the forming area, consisting of: pre-filter, active carbon filter and sterilization filter.
- Maximum flexibility and user-friendly interface of HMI.
- Easy to operate and maintain.

- Modified atmosphere packing with inert gas flushing (under 1% residual oxygen).
- Ultra-Clean hygiene level equipped with:
 - Class 100 clean air supply unit (coarse dust filter, fine dust filter, HEPA filter H14).
 - Closed tunnel with sterile air overpressure, extended from the forming area up to the sealing station.
 - UV-C system or Pulsed-UV light (up to LOG3) for cups and lid material sterilization.
- Advanced base and lid material tracking for individual print lidding, consistent sealing and cutting of each cup.
- Dual ionizing bars for the base material, equipped with dust vacuum unit.
- Extended operation with double reel feeders for base and lid material for minimal downtime.
- Automatic separation of the base and lidding waste materials for recycling purposes.
- Multiple filling stations.

FFS Machines	Average Length (m)	Average Width (m)	Ultra-Clean hygiene	IML system	Inert gas flushing	lonizing bars	External lid feeder
FRS 25/50	10.00	1.40	•	•	•	•	•
FRS 25/40	10.20	1.36	•	•	•	•	•
FRS 25/26	10.40	1.00	•	•	•	•	•
FRS 16/26	9.70	1.00	•	•	•	•	•
FRS 10/40	9.20	1.30	•	•	•	•	-
FRS 10/26	9.20	1.30	•	•	•	•	-
MF-24 🖞	6.30	0.90	-	-	•	-	-
MF-18 🖟	6.40	0.90	-	-	•	-	-
FRV	9.30	1.10	•	-	•	•	•

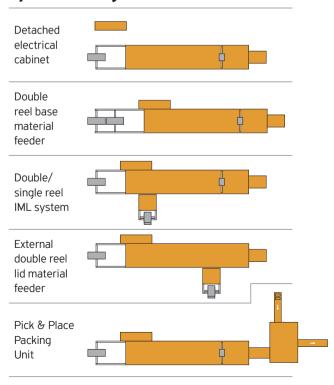
Alfa Machine offers a wide range of configurations for FFS machines, depending on the appropriate technology for processing each packaging material, the production capacity per hour, the required hygiene level, the size or shape of the cup as well as the arrangement of the cups and any extra integrated features required by the customer.

A variety of high-tech equipment is also available to incorporate into the Alfa Machine packaging machinery, changing the configuration of the machine. For instance, integrating an IML system, requires the presence of the label feeding unit on the side of the main machine.

Relay on our experts for a tailored solution according to your application and the product's requirements.

Alfa Machine works as your partner ensuring efficient operation and maximum performance of your tailor-made packaging machine.

Optional Configurations



Packaging Solutions

Alfa Machine designs and manufactures high quality linear and rotary Fill-Seal (FS) packaging machines for preformed cups, tubs and other containers, appropriate for filling any kind from liquid to viscous product, offering improved packaging speed, accuracy, and consistency. They are designed to offer flexibility in production, and they can be adjusted to accommodate different container shapes, sizes, and filling products. This flexibility allows food manufacturers to respond quickly to changing market demands.



Ready-made cups



Buckets



Ceramic & glass containers

Our FS machines can run all common packaging materials such us:

- Preformed container made from PET/PLA/PP/PAPER
- Pre-made container of GLASS/ CLAY
- Pre-cut PET/ALUMINIUM FOIL lid
- Pre-made snap-on rigid PET lid
- Soft lidding material from reel stock

The FCM series are linear Fill-Seal machines, capable of a large volume production output. Appropriate for single cups, split cups, cups with snap on lid, small buckets and tubs, give the benefit of integrated state-of-art sterilization equipment for advanced hygiene.





KEY FEATURES:

- Easy changeover for different size cups.
- Easy to operate and maintain with improved ergonomics.
- Servo-motor driven chain cup conveyor for spill avoidance.
- Servo technology employed in every machine station.
- Automatic destackers and feeders for containers, pre-cut lids and snap-on rigid lids.
- Container discharge on one or two conveyor belts.
- Seal integrity check by mechanical squeezing or thermal treatment.
- Maximum flexibility and user-friendly interface of HMI.

OPTIONS:

- Ultra-Clean hygiene level equipped with:
 - Laminar flow cabinet with class 100 clean air overpressure (coarse dust filter, fine dust filter, HEPA filter H14).
 - Pulsed-UV light (up to LOG3) for containers and precut lids sterilization.
 - □ UV-C system (up to LOG4) for lid film sterilization.
- Modified atmosphere packing with inert gas flushing (under 1% residual oxygen).
- Hydrogen Peroxide (H₂O₂) gas solution flushing system into the containers.
- Two dosing units for two products with dynamic in-line mixers for less product waste during changeovers.
- Extended autonomy with external cup loading buffer.
- Integrated case packer.
- Integrated servo-driven traverse printer.



PRODUCTION CAPACITY:

MODEL	ARRANGEMENT	MAXIMUM OUTPUT*
FCM30-L4:	1 x 4	7,200 pcs/hour
FCM30-L6:	1 x 6	10,800 pcs/hour
FCM30-L8:	1 x 8	14,400 pcs/hour
FCM30-L10:	1 x 10	18,000 pcs/hour

^{*} Depending on project specifications

Built-in Pick & Place Packing System



These series offer the option of a built-in pick & place packing unit, made of stainless steel, with servo-motor driven operation, providing the benefit of a compact size machine configuration.

Pulsed-UV for containers & lid



Pulsed-UV system with air-cooling unit, an output up to 700 J/pulse, at a frequency of 3 Hz.

- Total DNA destruction.
- Rapid sterilization.
- Low heat generation with short pulse & high peak energy.
- Free of toxic substances compared to mercury UV lamps.

FCM30-L1 model allows for easy adjustments to accommodate multiple sizes of buckets, as well as any liquid to viscous food product such as yogurt, dairy creams, mayonnaise, sauces and dips, with or without soft particles (up to \emptyset 12mm). It is designed to offer flexibility between 2 to 10 liters volume in production with reduced downtimes.



PRODUCTION CAPACITY:

PACKAGING	min	max	
2-10L buckets*:	300 pcs/hour	600 pcs/hour	







KEY FEATURES:

- Easy changeover for different size containers.
- Filling process with servo-motor driven pump and weighing scale.
- Automatic destacker and feeder for containers.
- Servo-motor driven chain conveyor for containers.
- Simultaneous sealing and cutting of soft lidding material from reel stock, and rewinding of waste material.
- Seal integrity check by mechanical squeezing.
- Snap-on rigid lid automatic destacker and applier.
- Maximum flexibility and user-friendly interface of HMI.
- Easy to operate and maintain.

- Ultra-Clean hygiene level equipped with:
 - Laminar flow cabinet with class 100 clean air overpressure (coarse dust filter, fine dust filter, HEPA filter H14).
 - □ Pulsed-UV light (up to LOG3) for containers sterilization.
 - □ UV-C system (up to LOG3) for lid film sterilization.
- Sealing unit with integrated inert gas flushing (under 1% residual oxygen).
- Hydrogen Peroxide (H₂O₂) gas solution flushing system into the bucket.



The FM linear models are compact fill-seal machines for pre-formed containers of different kinds of materials, shapes and sizes. It can be used for plastic, ceramic and glass containers up to 3 pockets, capable of working with 30 cycles/minute. With a few easy adjustments you can change container shape/size, or even filling product, offering the flexibility to work with a wide range of containers and recipes on the same machine.

PRODUCTION CAPACITY:

MODEL	POCKETS	MAXIMUM OUTPUT*
FM30-R1:	1	1,800 pcs/hour
FM30-R2:	2	3,600 pcs/hour
FM30-R3:	3	5,400 pcs/hour

^{*} Depending on project specifications

KEY FEATURES:

- Easy changeover for different size containers.
- Easy to operate and maintain.
- Rotary table with cup holds for containers accurate transportation.
- Automatic destackers and feeders for containers, pre-cut lids and snap-on lids.
- Container discharge on a conveyor belt.
- Maximum flexibility and user-friendly interface of HMI.

- Ultra-Clean hygiene level equipped with:
 - Laminar flow cabinet with class 100 clean air overpressure (coarse dust filter, fine dust filter, HEPA filter H14).
 - Pulsed-UV light (up to LOG4) for containers and pre-cut lids sterilization.
 - □ UV-C system (up to LOG4) for lid film sterilization.
- Modified atmosphere packing with inert gas flushing (under 1% residual oxygen).
- Soft lidding material feeding from reel stock.
- Mixed and multi product dosing.
- Container feeding from a conveyor belt for fragile materials (i.e. glass, ceramic).
- Integrated printer.









PRODUCTION CAPACITY:

MODEL	ARRANGEMENT	MAXIMUM OUTPUT
Containers with Ø110mm	1 x 6	5,400 pcs/hour
top rim*:		

^{*} Depending on project specifications

KEY FEATURES:

- Servo-motor driven chain conveyors for highly smooth indexing.
- Automatic destacker and feeder for plastic cups.
- Maximum flexibility and user-friendly interface of HMI.
- Easy to operate and maintain.

OPTIONS:

- Pulsed-UV light (LOG3) for containers sterilization.
- Stainless steel trolleys for manual transportation of the stacked trays.
- Tray De-stacker Unit for separating the trays after the incubation room.
- Container Extraction Unit to discharge the containers on a flat conveyor belt to be sealed.

Traditional yogurt (with milk skin) is a fresh dairy product and its filling process is labor intensive. The TY15-L6 line performs a fully automatic filling of traditional yogurt in pre-made plastic cups or clay pots, offering improved product quality and an outstanding increase of its shelf life over the manual process it replaces. The advancing of the cups/pots throughout the line is performed in plastic trays (in a 6x6 arrangement) specially designed by Alfa Machine, which fit both types of containers guaranteeing their safe and accurate indexing and the fast cooling of the product. The smart design of this line is a true innovation by Alfa Machine, minimizing the footprint of the whole packing line making it just 15m long and under 2m wide. The complete line consists of the following equipment:





The **Filling Machine** is equipped with a volumetric high accuracy filling unit with aseptic type dosing pistons and nozzles with membranes specially designed for a drip-free and foam-free hot filling of pasteurized milk.

The clean room **Tray Buffer Unit** moves the trays with the filled pots slowly for about 30 minutes in order to cool down and allow the characteristic milk skin to form.

The **Inoculation Unit** consisting of a volumetric high accuracy filling unit with aseptic type dosing pistons and nozzles designed for the effective piercing of the yogurt live culture through the skin without damaging it.

The **Tray Stacker** smoothly places one plastic tray on top of the other in stacks of up to 12 trays.

This procedure facilitates the trays' transportation in and out of the incubation room.

16

HIGH-END PERIPHERAL EQUIPMENT



Pick & Place Packing Unit

- Automatic Pick & Place Case/Tray Packing Unit adapted to the output conveyor of the primary FFS packaging machine, fully capable to operate at the same speed.
- Servo-motor driven, robust stainless steel construction, with vacuum pump assisted operation.
- HMI panel allowing full control of the unit.
- Optional automatic case erector.
- Optional layer pad between the cup layers.

CIP Skid

- Compact and flexible cleaning solution dedicated to the primary FFS/FS machine.
- Equipped with a Programmable Logic Controller.
- Optimized CIP process for reduced cleaning times.
- Improved effectiveness and less labor intensive.
- Programmed operation cycles upon specific requirements.
- Complete stainless-steel construction including the following:
 - □ Water storage with level control sensors.
 - □ Two water pumps depending on project specifications.
 - □ Three dosing pumps for caustic, acid and sanitiser.
 - □ Sanitized valves for automatic water and chemical solutions circulation.
 - □ Heat exchanger with steam supply connection.
 - Conductivity controller for the solutions.





Butter Homogenizer

- Specially designed to rework and homogenize blocks of bulk butter, margarine and other fats, before re-packing into customer-size portions.
- Robust stainless steel construction.
- Adjustable variable speed double helical screws.
- Creates a product with uniform moisture distribution for extended shelf life, improved texture, stability and flavor of the final product.
- Continuous pressure feeding to the hopper of the filler with bypass loop for excess product.
- Hygienic design in order to prevent the product concentration.

RESPONSIBLE COMMITMENT TO CUSTOMERS

Process Optimization

The optimal handling of the packaging materials is not only an important factor for a trouble-free machine operation, but it also affects the quality of the final product. Alfa Machine carries out the following tests during the development of each project according the specification given:

- Film thickness testing of cups after thermoforming.
- Sealing strength tests of pre-formed or thermoformed cups with various lid and cup material combinations.
- Seal integrity testing with the machine adjustable parameters to ensure optimal preformance and highest tolerance to product variations.
- Vacuum test for detecting sealing strength.
- Alignment check of sealing and cutting.
- UV-C verification to calibrating the energy required for sterilization needed by Ultra-Clean hegiene level.
- Residual oxygen level verification in the headspace after inert gas flushing.
- Autoclave conditions resistance test for special food packaging applications (i.e. processed meat).
- Clean room verification (HEPA filters efficiency test).
- Review and optimization of the CIP programming.

Operation & efficiency testing before shipment

Alfa Machine guarantees your complete line efficiency and performance. The Factory Acceptance Test (FAT) validates the operation of the equipment and helps assure both parties that the project contractual specifications and all other requirements have been met. It addresses any foreseeable operational issues by the customer before the equipment arrives at the client's installation site. Our skilled technicians also conduct a Site Acceptance Test (SAT) after the machine installation, to ensure optimal performance under actual operating conditions.

After Sales

Alfa Machine supports you over the entire life cycle of your packaging machine. Working with you as your best ally, we offer personalized after-sales services to guarantee smooth operation of your equipment and maximize your production efficiency.



Service Agreements

Our tailored service packages, include a number of scheduled visits of our technical experts in order to conduct a comprehensive health-check of the machine. After each visit you receive a detailed service report, service recommendation and a spare parts offer.



Remote Assistance & Troubleshooting

Thanks to secure cloud technology our experienced technicians are able to connect to your equipment, help you with troubleshooting, provide diagnosis and offer you direct support whenever you need it.



On-Site Services

Our highly skilled service engineers provide a complete range of field service and support from the installation of machinery to maintenance and consulting services world-wide.



Training

Our service engineers provide customized comprehensive on-site training for your operators and maintenance technicians, as a part of the machine installation.



Spare Parts

We develop spare parts lists customized to your needs and provide you with quality-approved OEM spare parts ensuring the long-term performance of your machinery. With almost all parts designed and made in-house by Alfa Machine, getting your machinery back up and running as quickly as possible, in case of urgent inquiries, is always our top priority.



Customer-Specific Manuals

We supply you with a comprehensive set of digital and interactive manuals, specially edited and illustrated for each individual packaging machine.



Upgrades & Modifications

Our in-house experts can provide you all the information about technical innovations that could modernize your equipment and consult you about the required and feasible modifications in case of changing shape or material of packaging, or even filling product.



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