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भारतीय मानक मसौदा

कागज के अलावा प्लास्टिक और लचीली पैकेजबन्दी की पारिभाषिक शब्दावली

(IS 7019 *का तीसरा पुनरीक्षण*)

Draft Indian Standard

GLOSSARY OF TERMS IN PLASTICS AND FLEXIBLE PACKAGING, EXCLUDING PAPER

(*Third Revision of* IS 7019)

(ICS 83.080; 55.040)

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FOREWORD

(*Formal clauses to be added later*)

This standard was originally published in 1973 and subsequently revised in 1982 and 1998 to cover the glossary of terms in plastics packaging only. As the industry has progressed manifolds since then, a need was felt to revise the standard to bring in newer terms. This standard has been prepared with a view to eliminate the ambiguity and confusion arising from different interpretation of terms used in plastic packaging and to establish a generally recognized usage. It is hoped that this glossary will be useful to the trade in general and the industry in particular.

In this (third) revision, assistance has been taken from ISO 21067-1 Packaging- Vocabulary- Part 1: General terms. Definition of single use plastic has also been added as stipulated in Plastics Waste Management Rules, 2016, as amended.

1 SCOPE

This standard defines the packing terms used in plastics and flexible packaging excluding paper.

2 TERMINOLOGY

A

Abrasion Ring — A ring moulded *in situ* on the bottom of the large container; the ring adds to the thickness thereby greatly increasing the life of the container against abrasion.

Acceptance Sampling — Sampling inspection in which decisions are made to accept or reject the product.

Acetal Resin — A resin made by polycondensation of acetone with another compound, for example, formaldehyde or phenol.

Additive — A material, such as hardener, plasticizer, preservative, slip agent, etc., added to a base material in order to achieve a specific property.

Adhesive — Any non-metallic material that can join solid surfaces by surface bonding and internal strength (adhesion or cohesion).

Adhesive Cold-Setting — An adhesive that bonds at room temperature, usually below 30 ºC.

Adhesive Hot Melt — 100 percent non-volatile thermoplastic materials which are typically solid at room temperature and heated usually to 150 ºC to 200 ºC for application on the substrata at molten state. On cooling solidify, resulting in quick setting on the substrata.

Adhesive Lacquer

a) A coating applied to a surface to perform its sealing in the coated areas of the film.
b) An adhesive which usually consists of resins dissolved in organosols.

Adhesive-Thermoplastic — An adhesive capable of being activated or reactivated repeatedly by heat; made of thermoplastic resins.

Adhesive-Thermosetting — An adhesive which permanently sets when heated.

Ageing — Change of material properties with time due to environmental conditions.

Anchoring — Securing of a surface coating to a base material.

Anti-fog — A material or agent which reduces the tendency of a film or material to appear cloudy in a high humidity atmosphere by promoting the deposition of a continuous film of moisture.

Antistatic Agent — An agent to dissipate static electricity on plastics surfaces.

Aseptic Packaging — A technique for producing shelf-stable food products in which packaging and product are sterilized separately and brought together in a sterile environment.

B

Bag, Film — A general classification of flexible bags made from plastics or cellophane type films.

Bag, Flat — A bag of simple construction having no gussets.

Bag-in-Box — Packaging generally for liquid products, consisting of a flexible, collapsible, sealed bag of film or laminate in a rigid outer container, typically of fibreboard. The bag is fitted with a closure and a spout through which it can be filled or emptied.

Barrier Layer **—** A layer of material that provides a physical obstacle to the passage of solids, liquids or gases.

Barrel, Plastics — A bilged container, usually 10 litres or more in capacity, of circular section and having two flat ends or heads of equal diameter with orifice(s) suitable for accepting a screw-threaded or pressfit tap. The diameter of the main orifice(s) is usually 50 mm or more.

Barrier Properties — The properties of a plastics material or laminated material which enable it to reduce passage of gas, vapour, liquid or solid through it without affecting it physically or chemically.

Batch — Generally, any group or quantity of materials prepared at one time or for one purpose and which has been subjected to some unit chemical or physical mixing process intended to make the final product substantially uniform.

Biaxially Oriented Films — A film in which the molecular structure is aligned mechanically into two directions, that is, machine direction and transverse direction, in order to gain strength and to introduce shrinkage characteristics.

Bead Seal — A seal in the form of a bead which is formed when plastics bags are heat sealed or cut one from another by a hot wire, due to surface tension in the melted plastics.

Bleed Out; Exudation, Sweat Out (Deprecated) — The migration of liquid constituents to the surface.

Blister Pack — A pack which encloses an article between a thermoformed plastic cover and a flat backing paperboard/foil.

Block Bottom Bag — A bag made from layflat tubing with one end welded. The corners are folded to produce a square or rectangular base. The folded-in corners may be sealed or removed but are normally taped.

Blocking — An undesired adhesion between layers of a material in contact, such as may occur under moderate pressure during storage or use.

Blow Hole — A localized thinned spot or hole in a container or film.

Blow Up Ratio — In blow moulding, the ratio of the mould cavity diameter to the parison diameter. In blown film extrusion, the ratio of fully expanded bubble diameter of the blown tube to the diameter of the extrusion die.

Blown Film — A film produced by internally blowing the hot tube as it comes out from the cross head.

Blown Lettering — Letters or other designs appearing raised or depressed on a glass or plastic container, produced by the mold.

Boil-in-Bag — A bag made from flexible film or laminate and containing food which can be cooked by immersing it unopened in boiling water.

Brimful Capacity — The volume of water required to fill the container completely at (27 ± 2) °C.

Bubble Film — A type of cushioning material consisting of two layers of plastics film between which regularly spaced air bubbles are formed. It is usually supplied in roll form.

Bubble Pack — A type of packaging where the item is secured between a pre-formed dome or the bubble of a laminated materials consisting of a film or foil laminated to base paper, film or foil and closed by stapling, heat sealing, glueing, etc.

Buckle — Collapse of walls of a container causing permanent distortion caused by vacuum created inside the container or by external pressure.

Burnt Particles — Polymer particles which are degraded due to exposure to excess heat and which thereby have turned brown or black. They would appear as ‘black spots’ on the moulded articles.

Butt Welding — Formation of a joint by welding abutting edges without overlapping.

C

Calendered Film — A film manufactured by passing heat softened plastics material between two or more nip-rollers to produce a continuous film.

Cap — A cover for the open mouth of a container. It may be a snap-on type where it snaps on the neck of a bottle, a threaded type or push-in type.

Capsule

a) A secondary seal used to protect a primary closure against tampering.

b) A small tube, typically enclosing medication.

Captive Flap — A lipped bag in which a lip is folded over and sealed to the side of the bag.

Carboy — A cylindrical lightweight plastics container, usually between 25 litres and 60 liters in capacity intended to be used with an outer support when filled.

Cast Film — A thermoplastic film produced by extruding a flat film from the T-die on to a chilled roller for imparting high gloss and transparency.

Child Resistant Packaging (CRP) — A package which requires two or more sequential or combined operations to be opened and to which, in testing, 80 percent of children in a specified age group cannot gain access.

Closure — *See* Cap.

Coating (Process) — The process of applying a thin layer of a material in the form of a fluid or powder upon a substrate.

NOTE — Laminating is not considered coating.

Coefficient of Friction — The ratio of the force required to move one surface over another to the force pressing the two surfaces together.

Co-extruded Films — Two or more films extruded through a composite cross head using same or different polymers. The extrudate comes out through a common cross head to produce a composite film using a blown film die or a T-die.

Cold Seal/Cohesive Seal — A seal made by an adhesive which bonds only to itself, requiring only contact pressure and no heat.

Collapsible Tube; Flexible Tube — A cylindrical container of flexible material with an integral shoulder and neck opening which is usually filled through the bottom and then closed by sealing and folding.

Composite Container

a) A rigid container which is made from a mix of material, often fibreboard combined with metal or plastics.
b) A packaging comprising a rigid outer casing and a plastics inner receptacle constructed so that they form one integral unit, filled, stored, transported and emptied as such.

Corona Treatment — Exposing a material, such as a plastics film or a coating, to a corona discharge to improve its receptivity to inks and printing and to improve its adhesive characteristics to other substrates.

Cross Wise Laminate — A laminate in which some of the layers of material are oriented at right angles to the remaining layers with respect to the grain or strongest direction in tension.

Crimp Seal — A seal formed by pressing materials together between corrugated or knurled surfaces, which may be heated, producing a characteristic ridge and-furrow appearance.

Cross Direction; Transverse Direction — The direction in the plane of a sheet that is at right angles to the direction of flow during manufacture.

Cross Linking — Treatment by means of radiation or chemicals to link the long chain molecules of thermoplastics polymers to improve properties such as water vapour transmission rate and strength.

D

Dead Fold — The ability of a material to recover after being folded.

Delamination — Separation of layers of material. A laminate in which isotropic layers are arranged at right angles to on another,

Disposable Pack — A one-way package which is disposed of after emptying the contents.

Drum, Plastic — A free-standing plastics container, usually circular or rectangular in cross section, with a capacity between 10 litres and 250 litres.

Dry Lamination — A process in which one substrate is extrusion coated from a die and immediately combined with a second, the coating forming the bond between the two.

Dual Ovenable Package — A package durable to heating in either a microwave or conventional oven.

E

Easy Open Pack — A retail pack having design features making it readily openable by the consumer.

Electric (Electronic) Sealing — The sealing of contiguous surfaces of thermoplastic films by means of inducing high frequency electrical current.

Embossing — A process of producing contoured patterns on surfaces.

Equilibrium Humidity — Relative humidity of an atmosphere at a given temperature at which absorption will not occur in a moisture sensitive material of a given moisture content.

Equilibrium Relative Humidity — The relative humidity produced by a product when in an enclosed space at a steady temperature, that is, the relative humidity in equilibrium with a product at a given temperature.

Extrusion Blow Moulding — A moulding formed by the extrusion of heat-softened plastics through a die to form a tube. This tube is captured by the two halves of the bottle blow mould. A blow pin is then inserted through which air enters and expands the molten tube to conform to the chilled mould.

Expandable Plastics — A plastic whose density is reduced by the presence of numerous small cavities (cells), interconnecting or not, dispersed throughout the mass.

NOTE — A cellular plastic (foamed plastic) is often called simply a foam.

Extrusion Coating — The coating of a base material (substrate) with a thin layer of thermoplastics material applied by an extrusion die.

Extrusion Lamination — Preparation of a laminate by extrusion coating a base and simultaneously applying laminate substrate.

F

Film — A non-fibrous non-metallic material normally up to and including 0.25 mm thickness.

Fin — In a moulded object, a ring of excess plastics material which forms at the parting line of the mould and must be removed from the finished article.

Fin Seal — Type of seal resulting from sealing together the contiguous edge-areas of two sheets, usually by heat, resulting in a fin-like protuberance.

Finish — The plastic forming the opening of a container shaped to accommodate a specific closure.

Fish Eye — A fault in transparent or translucent plastic material such as films or sheets, appearing as a small globular mass and caused by incomplete blending of the mass with surrounding material.

Fitments/Fittings — Accessories for a package. These would include spout, dispensers, handles, etc.

Flame Treatment — Exposing a material (such as a plastic bottle or film) to a gas flame to increase the polarity of the surface. The amount of flame treatment is dependent on the condition and position of the flame and the time of exposure.

Flash — Excess of moulding material which runs out of the cut-off when mould is closed.

Flash Line; Spew Line — A raised line appearing on the surface of a moulding and formed at the junction of mould parts.

Flash Mould — A mould designed to permit excess moulding material to escape during closing.

Flame Sealing — The welding of plastics films by a gas flame.

Flat Seal — A method of heat sealing thermoplastic coated papers or thermoplastic films with a heated surface having no configuration.

Flexible Packaging — Packaging including the use of such flexible materials as foils, films, paper, flexible sheeting, etc., to form the container, for example, wraps, bags, envelopes, pouches.

Flexographic Printing — A method of direct rotary printing which employs resilient raised image printing plate of rubber or photopolymer, affix to variable repeat plate cylinder, ink by a metric roll or doctor blade wipe metal/ceramic roll, carrying fluid type ink, to virtually any substrate.

Float Packing — The method of packing which employs an inner and outer container with suitable cushioning material between the two to absorb mechanical shock.

Fluorination — The modification of a plastics surface by exposure to fluorine gas, used to improve the barrier properties of plastics containers to solvents.

Foam Cushion — Natural or synthetic material expanded or foamed to lower bulk density by suitable chemical process, the foam thus becomes resilient with cushioning properties.

Foamed Plastics; Cellular Plastics — A plastics structure containing a matrix of gas filled cells.

Fogging — The clouding of a packaging film due to condensation of water droplets.

NOTE — *See* also anti-fog.

Foil — A rolled metallic material, normally less than 200 m thick.

Form-Fill-Seal Machine — A machine which automatically forms a package or pouch, dispenses product into the pouch and then seals it. Machines can be vertical or horizontal in configuration.

Free Standing Container — A container usable without an outer protective or supporting framework or both.

Friction Welding; Spin Welding — The process of fusing two surfaces by forcing them together while one of the pair is spinning or reciprocally moving, until frictional heat melts the interface.

FRP Tank — FRP tank is used to store and also can be used to distribute milk with addition of vending system is of the capacities 200 litres, 400 litres, 600 litres and 1 000 litres. The tank is generally double-walled, insulated and also provided with an insulated lid. The outer shell is built

up using 3 layers of fibre glass chopped strand mat having weight of 600 g/m^2 and laminated with polyester resin. The inner shell is built up using four layers of fibre glass chopped strand mat having weight of 600 g/m^2.

G

Gas Transmission — The movement of gas through materials.

NOTE — Values are expressed in terms of area, thickness of film, partial pressure gradient, relative humidity and time.

Gauge — A unit of measurement for the thickness of a material where 1 gauge = 25.4×10^{-5} mm.

Gusset — The inwardly folded portion of a flexible container.

H

Haze — A cloudy or foggy appearance in a normally transparent plastics.

HDPE/LLDPE Can — A can with a capacity of 20 litres/40 litres intended to store and handle milk and milk products at a temperature upto 60 °C and is made from HDPE/LLDPE or combination of both.

Headspace — The volume in the upper portion of the container between the top of the product fill line and the top of the container finish.

Heat Sealing — Joining by fusion under heat and pressure.

Heat Sealing Film — A film that can be joined to itself by the application of heat and pressure without the necessity for adhesives.

Heavy Duty Sack — A sack made from low density polythene or polyvinyl chloride by a blown-film method or by weaving of high density polythene or polypropylene flat tapes. These are intended for packing 25 kg and more of material.

Hose for Milk Loading/Unloading — A hose is used to unload/load the milk from tanker. It is of about 75 mm diameter and is made of food grade quality high density polyethylene material.

Hot Foil Stamping — The transfer of colour from a pigment-coated foil by the use of a hot die applied to the reverse side of the foil.

Hot Tack — The ability of the material to resist separation of a seal when the material is in the semimolten stage.

I

Impulse Sealing — A sealing method which uses heat generated by an impulse of electric current flowing through a sealing head to melt sealant layers and produce bonding.

Injection Blow Moulding — A blow moulding process in which a parison is formed over a mandrel by injection moulding and blown to its final form and dimensions in a second mould.

Injection Moulding — The method of converting a plastic material into the desired shape by forcing the heat softened material into a relatively cooler cavity under pressure.

In Mould Labelling — A process for labelling containers in which precut labels coated with heat seal adhesive are placed in the mould before a plastics material is moulded. The adhesive is activated by the heat of the molten plastics material and thus adheres to the container.

Insert — A part consisting of metal or other material which may be moulded into position or may be pressed into the moulding after the completion of the moulding operation.

Intermediate Bulk Container (IBC) — A primary packaging with a capacity of 3 m^3 (3 000 litres) or less, intended to contain liquids, pastes or solids (for example powders or granules) and designed to be handled mechanically.

J

Jerrycan — Transport storage and dispensing container for liquids usually of rectangular cross section and capacity of 30 litres.

L

Laminate — To unite layers of materials by extrusion or with adhesives.

Laminated Tube — A collapsible tube made from a laminated material which is normally closed by heat sealing.

Lap Joint — A joint formed by overlapping plastics film(s) using adhesive or a heat seal.

NOTE — This can only be used where both surfaces of the film(s) are capable of accepting the same adhesive or of being heat sealed.

Liner — A secondary thin inner container that gives chemical resistance and is used in conjunction with an outer container that provides mechanical protection.

Lipped Bag — A bag with one face at the open and longer than the other.

Low Temperature Flexibility — The pliability of a material, such as plastics, at low temperature.

L-Ring Drum — A blow moulded drum with integral rings in the shape of the letter L at the chimb.

M

Machine Direction/Longitudinal Direction — The direction in the plane of web or sheet that is parallel to the direction of flow during manufacture.

Marking — In packaging, application of numbers, letters, labels, tags, symbols or colours, for identification and handling instruction during shipping, handling and storage.

Melt Flow Index (MFI) — A measure of the fluidity of a molten thermoplastics material under specific conditions of temperature and applied force.

NOTE — In practice, the lower the MFI of a thermoplastics, material, the more difficult the material may be to process.

Metallizing — Applying a thin coating of metal to a non-metallic surface. May be done by chemical deposition or by exposing the surface to vaporized metal in a vacuum chamber.

Micro-Porous Plastics Film — A packaging film which is porous to gas but prevents ingress of microorganisms.

Microwaveable Packaging

a) *Passive* **—** A packaging material which is transparent to microwave energy and heat stable thus allowing food products to heat in a microwave field.

b) *Active* **—** A packaging material in which microwave opaque features reflect, redirect, shield or absorb microwave energy.

Migration — The transfer of substances (migrants) from packaging material into the packaged product.

NOTE — A distinction is made between:

a) global migration, which is the sum of all migrants (identified or not); and

b) specific migration, which is the transfer of specific constituents. Migration can occur spontaneously (by movement of monomers and/or volatiles), or by contact with the product (through leaching).

Modified Atmosphere Packaging (MAP) — A packaging system in which the atmosphere inside a package, introduced during the packaging operation, is a specific mixture of gases (CO_2, N_2, O_2) selected to extend the shelf life of perishable foods (usually under chilled conditions) such as fruit, vegetables, fish and meat.

Moisture Content — The mass of moisture held by a material.

NOTE — The moisture content may be expressed as a percentage either of the moisture free mass or of the mass at the commencement of the test. The method of expression should be stated.

Moisture Vapour Transmission — The rate at which water vapour permeates through a plastics film or wall at specific temperature and relative humidity.

Moulding — The shaping of a plastics composition within or on a mould normally accomplished under heat and pressure.

Moulding Compound — A compounded polymer in a form suitable for moulding.

N

Natural Colour, Plastics — Plastics materials, such as polyethylene, polypropylene, polyvinyl chloride, polycarbonate, ABS, etc. to which pigment was not added.

Netting Plastics — Continuous extruded net of flexible plastics material available in varying diameters which can be cut to length and made into bags, sleeves, wraps.

Neck — The part of a container where the shoulder cross-section area decreases to form the finish.

Nominal Capacity — The volume of contents normally expected to be filled in the container at (27 ± 2) °C.

Non-woven Material — A fabric-like structure composed of fibres that are bonded together and not woven.

O

Open Mouth Bag — A type of bag which is closed the bottom only. It is usually heat sealed.

Oriented Films; Orientated Films — A film stretched in one direction (uniaxial orientation) or both directions (biaxial orientation) to improve strength transparency or modify shrinkage characteristics.

Orientation — The alignment of the structural elements of a material.

Overprint Varnish — A protective layer applied over the printed film to give it resistance for specific purposes.

Over-wrap — A method of completely covering a pack of film often supplied as continuous web.

P

Package Pack Packet — The product of a complete series of packaging operations or a unit consisting of a number of such products.

Packaging (Product) — Product to be used for the containment, protection, handling, delivery, storage, transport and presentation of goods, from raw materials to processed goods, from the producer to the user or consumer, including processor, assembler or other intermediary.

Packaging (Operation) — The operations involved in the preparation of goods for distribution, transport, storage, delivery and sale to the final user. The term includes preservation, packing, marking and unitization.

Packing — The operation of packaging by which the product is enveloped in wrapping and/or enclosed in containers or otherwise secured.

Packet — A term sometimes used to describe a pouch or lipped bag.

Pallet — A load board comprising a flat upper deck with a lower deck designed to permit movement by materials handling equipment, for example, fork trucks used to carry a single item or a number of combined items as a unit load for handling, distribution and storage.

Panelling — The partial flattening or distortion of a container, normally due to pressure differentials between the inside and outside of the container.

Parison — A shaped molten plastics mass, generally in the form of a tube used in blow moulding.

Parting Line — A thin ridge of material on the outer surface of a moulded container which indicates the junction plane of individual parts of mould sections.

Peelable Seal — A seal which can be opened by porous by peeling the sealing layers apart.

Perforated Film — A packaging film rendered gas porous by perforating a continuous film.

Permeability — The passage or rate of diffusion of a gas, vapour, liquid or solid through a plastic material without effecting it physically or chemically.

Phenolic Resin — Generic name for phenol formaldehyde thermosetting plastics (moulded or cast).

Pilfer Proof — A seal that cannot be opened without partially or wholly destroying the cap or otherwise showing evidence of tempering. Pilfer is not synonymous to non-refillable.

Pillow Pack — A package formed by heat sealing a plastics film tube at both ends so as to trap air around the product and to give a pillow-like shape.

Pinhole — A very small hole in an extruded resin coating of film.

Pinhole Perforations — Small holes made all over the bag tube by mechanical means to facilitate air removal during bag filling and/or after closing. Can also be placed directly below the valve on valve type bags. Very small holes found in thinner gauges of foil which are used in metal tubes and flexible laminates.

Pinch-Off (Plastic Bottles) — The bottom of the parison that is pinched-off when the mould closes.

Plastic (Noun) — A material which contains as an essential ingredient a polymer and which at some stage in its processing into finished products can be shaped by flow. Plastics are of two types:

a) *Thermoplastics* **—** The plastics which can be softened by heating and formed to the desired shape which is retained on cooling. The process can be repeated without appreciable loss in mechanical and physical properties of the material.

b) *Thermosetting* **—** The plastics material which undergo an irreversible chemical change when heated (termed curing) and forms an insoluble infusible mass which will not soften on heating but will decompose. Curing usually takes place under heat and pressure but some polymers can be cured without either.

Plastics Bottle — A container with an opening narrower than the body generally formed by extrusion blow-moulding or injection blow moulding or stretch moulding process.

Plastics Cup — Similar to plastics pot, but usually of thinner wall section intended to be used as a disposable drinking cup.

Plastics Deformation — A change in the dimensions or shape of a plastics article under load, that is not recovered when the load is removed.

Plastics Dip — A method of coating packages, objects or products in special waxing resins or plastic melts to enclose them completely and form a solid cover after hardening of the adhered material. Frequently used to protect metal parts against corrosion.

Plastics Flow — Change in dimensions and shape of a material when subjected to external weight or pressure, generally at room or cool temperature.

Plastics Foam — Plastic material, thermoplastics or thermoset, into which gas has been introduced to give a lightweight structure. Gas cells may be interconnected to give an open-cell foam, or unicellular to give a closed cell foam. Foams are most generally used as cushioning materials, trays, chests, boxes, platforms and for insulation properties.

Plastics Jar — An open-ended container with parallel sides.

Plastics Pouch Crate — The plastic pouch crates are required to hold and transport 10 pouch packs of 1 litre each or 20 pouches of half a litre each and is made from unpigmented high density polyethylene.

Plastics Tray or Dish — A thermo-formed shallow container.

Plasticity — Property of a material which enables it to be continuously deformed without rupture when acted on by a force sufficient to cause flow and allows it to retain its shape after the applied force has been removed.

Plasticize — To soften by incorporation of a plasticizer.

Plasticizer — Material, added during the manufacturing process, to increase flexibility.

Plasticizer Migration — Undesired movement of the plasticizer to the surface of a plastics or from one plastics to another.

Plastify — To soften by heating.

Plastisol — A suspension of a finely divided resin in a plasticizer.

Plain Cellulose Film — A cellulose film that is uncoated, whether converted or not.

Plain Plastics Film — An unembossed, unprinted, unpolished film. Some plain plastics films may have coatings applied to them by the film producers.

Plastics Drum

a) *Removable Head —* A plastics drum with an opening the full diameter of the vessel. The head or cover is usually secured to the drum by way of a metal ring.
b) *Non-removable Head —* A plastics drum with the top and bottom ends permanently attached.

Plug — A type of closure which is designed to be inserted into the opening of a container. May be held by friction or by screw threads or by heat sealing.

Ply

a) One components of a laminate.
b) Any one of the layers forming the walls of a bag or sack.
c) One of the layers in the formation of paperboard produced during the forming process.

Polycarbonate — Polymers containing a carbonate linkage. Characterized by great toughness and strength and wide temperature resistance and transparent. Finding use in some high-value blown bottles and thermoformed packages.

Polyolefin/Copolymers — A plastic based on polymers made with an (uniaxial orientation) or both directions (biaxial orientation) olefin (or olefins or copolymers of such monomers with other

monomers, the olefin monomer (or Monomers) being in the greatest amount by mass to improve strength or modify shrinkage characteristics.

Pouch — An open rectangular bag having three sides sealed.

Pouch Former — Machine for producing pouches from thin paper or plastics film or laminates.

Pouch Plicated — A folded pouch having gussets.

Pourout Fitment — A plastics component of a glass or metal package, designed to improve the dispensing action of liquid products; snaps over glass bead or inside can neck, with screw cap applied over the fitment.

Preform — In plastics, a compressed tablet or biscuit of plastic composition used for efficiency in handling and accuracy in weighing materials.

Also an injection moulded parison which is blow moulded by a second step into a plastic bottle.

To make plastic moulding powder into pellets or tablets.

Pressure-Sensitive Film — A film that is surface-coated on one side with a pressure-sensitive adhesive.

Primary Packaging — Packaging designed to come into direct contact with the product.

Print Treatment (Print Pre-treatment) — The surface of polyolefins products is ‘non-polar’ whereas the printing inks available are ‘polar’ in nature. To improve the adhesion, the polyolefins products (film, containers, etc.) require to be treated to make them ‘polar’. This is generally achieved by treating films and containers by ‘corona discharge’ and ‘flame treatment’ methods.

Processable Pouch — Flexible film or laminate heat-sealed pouch which remains hermetically sealed when subjected to a temperature of 120 °C or more in steam or water. This enables any foodstuff to be sterilized in the pouch, and so confer freedom from microbiological deterioration. Also has the properties of the boil-in-bag.

Push Fit Closure — A closure which is pushed into the neck or body of a container, and held in place by frictional or mechanical means.

R

Radio Frequency Welding; Dielectric Welding — A welding method using a high frequency electric field to melt adhesives or soften polymers and produce bonding.

Regrind — Ground plastic usually made from scrap from a plastic operation. It is usually blended with virgin material and remoulded.

Reinforced Plastics — A plastic with some strength properties greatly superior to those of the base resin, resulting from the presence of high strength fillers imbedded in the composition. The reinforcing fillers are usually fibres, fabrics of mats made of fibres. The plastics laminates are the most common and strongest type of reinforced plastics.

Relative Humidity — The ratio of the actual pressure of the water vapour in the atmosphere to the saturation water vapour pressure at the same temperature, expressed as a percentage.

Retortable Plastics Package — A package, usually based on polypropylene, capable of being heat processed in an autoclave, typically at 121 °C, to sterilize the contents.

Retortable Pouch — A flexible pouch formed from aluminium foil with outer layers of plastic to provide durability and heatseal. Pouch must be capable of withstanding heat and pressure of retort processing.

Re-worked Material (Thermoplastics) — A plastic material that has been reprocessed, after having been previously processed by moulding, extrusion, etc., in a fabricator's plant.

Rigid Packaging — Packaging whose shape remains essentially unchanged after the contents are added or removed.

Roll Wrapping — A wrapping method for cylindrical rolls of materials, especially confectionary and pharmaceutical products.

S

Sachet — Pouch type small bags.

Satchet Bag — A bag which has gussetted folds on each side.

Saturated Vapour Pressure — The pressure exerted at a given temperature by the vapour of a liquid in the presence of that liquid.

Scrap — Any portion which is not part of the primary product, for example, flash, cull, runners, sprues and rejected parts.

Sealing Surface — The surface of the finish of the container on which the closure form the seal.

Sealing Plane — The plane on the inside of a bottle cap along the sealing surface.

Seamless Tubing — A film made by extrusion of thermoplastics material in the shape of continuous tubing, often used for making bags.

Secondary Packaging — Packaging designed to contain one or more primary packaging together with any protective materials where required.

Self Adhesive Film — A film that is surface-coated on one side with a pressure-sensitive adhesive.

Separate Application — A process of bonding surfaces with a synthetic resin adhesive in which the synthetic resin is applied to one surface and the hardener to the other surface before clamping. Assembly of the joint then causes interaction of resin and hardener to take place. Alternatively, the synthetic resin and hardener may be applied separately to the same surface.

Sheet — A non-fibrous, non-metallic material normally greater than 0.25 mm thick.

Shelf Life — The length of time during which the contents do not deteriorate beyond acceptable limits under expected conditions of storage and display.

Shrink Film — A film which has been oriented to varying degrees in one or two directions during manufacture and can be shrunk by heating after being applied to the object to be packaged. Provides a light, contour fitting, unitizing sleeve or wrap.

Shrink or Sink Mark — A dimple like depression with well-rounded edges, in the surface of a part where it has retracted from the mould.

Shrink Tunnels — Devices for subjecting packages which have been wrapped in shrink films to hot air currents or radiant heat for shrinking.

Shrink-Wrap/Shrink Pack — A pack made by wrapping an article or group of articles in a shrinkable film and shrinking the film by heating or any other process around the article or articles to produce a tightly wrapped pack.

Shrink Wrapping — A technique in which shrink film, prepared by stretching a film when heated above its glass transition temperature and cooling while stretched, is draped over one or a number of articles and then heated, when the film shrinks to hold them tightly.

Silk Screen Printing — Printing on a surface by a process in which printing ink is forced through a screen, which has the required design or pattern, by means of a rubber squeeze. The screen is made of silk or nylon and the design is ‘stencilled’ on it by a ‘photographic’ or ‘lacquer’ method. The ink passes through the screen on to the product surface to form the design.

Single Serve Pack; Portion Pack — A pack which contains a quantity of .product designed to be completely consumed at one time.

Single-use plastics commodity — Single-use plastic commodity mean a plastic item intended to be used once for the same purpose before being dispose of or recycled.

Skin Pack — A pack which encloses an article on a suitable support with a film which is vacuum-formed to the contours of the packed article.

Slip Board/Slip Sheet

a) A flat rigid board on which a load is placed, fitted with a tongue to permit it to be pulled with the load onto the forks of specially equipped forklift trucks. It may be used with a pallet or independently depending on the particular distribution system.

b) A flat rigid board laid upon a palletized load to assist even distribution of the weight of a similar load placed upon it.

Slush Moulding — The coating of the mould with a liquid plastics which when heated cures to form the object being moulded.

Snap-on-Closure — Closure which is fitted over the neck of a container and usually held in place by mechanical means.

Spout — A fitting for the open end of the container to direct the dispensing of the contents.

Squeeze Bottle — A plastic bottle, usually made of polyethylene, which is sufficiently flexible that, by the pressure of gentle manipulation, it will dispense its contents as a spray, foam, droplets, or a viscous mass.

Squeeze Tube — Flexible tube made to take a screw cap at one end. The tube is generally filled through the open end which is then closed permanently.

Stackable — Containers that can be placed one on top of the other filled with the material to be packed.

Static — The build-up of electrically charged particles on a surface.

Sterilization — Removed or destruction of all living organism to render a package free from bacteria and germs.

Stillage — A load board comprising a single deck supported on bearers or legs, with an uninterrupted space between the bearers or legs for the entry of a stillage truck. If required, the deck may be fitted with a superstructure.

NOTE — There is a close similarity between stillages and certain types of pallets. Stillages, however, are not normally intended for stacking. Whilst a pallet truck might be suitable for moving a stillage, a stillage truck cannot enter a pallet with centre bearers or a bottom deck.

Stress Crack — External or internal cracks in a plastic caused by tensile stresses less than that of its short-time mechanical strength. The development of such cracks is frequently accelerated by the environment to which the plastic is exposed. The stresses which cause cracking may be present internally or externally or may be combinations of these stresses. The appearance of a network of fine cracks is called crazing.

Stretch Blow Moulding — The technique of stretching to induce orientation which can be applied to either injection blow moulding or extrusion blow moulding.

Stretch Forming — A plastic sheet-forming technique; the heated thermoplastic sheet is stretched over a mould and subsequently cooled.

Stretch Wrap — A type of package which is formed by the act of stretching an extensible film around the product and holding the film under tension by means of a heat seal or frictional device.

Strip Packaging — A method of packaging in which small articles, such as, capsules or tablets are packaged individually in a continuous strip that is divided into segments or packets that permit easy tearing off. The strip material could be heat-sealable film, heat sealable metal foil or combinations of film and foil may be used.

Substance (Cellulose Film) — The nominal weight in grams per square metre (g/m^2).

Suspension Packing — A method of packing where, by the attachment of springs of metal or rubber, an article is suspended in a container, or an inner container in an outer.

Susceptor — A material manufactured by depositing finely divided metal particles on a carrier substrate which heats in a microwave oven, aiding the crisping and browning of foodstuffs.

T

Tamper Evident Package — A container or package which has an indication of, or barrier to, entry which if breached or missing provides visible evidence that tampering might have occurred.

Tear Strip — A narrow ribbon of film included in a wrapper to produce an easy open feature.

Tamper Proof — *See* Pilfer proof.

Testing — Procedure for assessing qualitatively or quantitatively by properties of a material or product.

Thermal Stress Cracking (TSC) — Crazing and cracking of some thermoplastic resins resulting from overexposure to elevated temperatures.

Thermoforming — A process of forming thermoplastic sheet which consists of heating the sheet and forcing it into or over a mould by vacuum or mechanical or air pressure. Used to produce blisters, skin packs and thin-wall cups, trays, platforms and other sheet formed containers or components. The term is an overall designation for vacuum forming, pressure forming and combination of these.

Toxicity — The quality or degree of being toxic or poisonous.

Transfers — A method which applies printed matter on an inert carrier to the article.

U

Ullage — What the filled and closed container lacks of being truly full [the remaining air space serves (by its compression) to accommodate thermal expansion of the contents and/or rise in vapour pressure].

Ultrasonic Sealing — A film sealing method in which sealing is accomplished through the application of vibratory mechanical pressure at ultrasonic frequencies (20 kg to 40 kg).

Undercuts — An indentation or protuberance on a moulded form that impedes the withdrawal from the mould.

V

Vacuum Pack — A pack in which the air has been withdrawn from the pack before sealing it.

Valved Bag — A bag with a factory-closed top and bottom with a small opening or valve at one comer, through which the bag is filled.

Vapour Pressure — The pressure exerted by the vapour of a volatile liquid or solid at a given temperature.

Vent Mouth — A secondary opening on a container for allowing the passage of air or vapour while the contents are being poured through the mouth.

Virgin Material — A material that has not been subjected to use or processing other than that required for its original manufacture.

W

Wallet — A bag made in a style which combines interconnected bags with the mouth facing each other.

Warpage — Dimensional change in the shape resulting due to uneven post moulding shrinkage.

Water Soluble Film — The film used for making pouches for packing various products and which gets dissolved in contact with water.

Water Vapour Transmission Rate (WVTR) — The rate at which water vapour passes through a film or laminate, usually expressed in grams per square metre per 24 h under specified conditions of temperature and humidity.

Welding — The joining together of thermoplastic materials by the application of heat and/or pressure in such a manner as to cause two or more surfaces in contact to flow together to form a homogeneous bond on cooling.

Weld Line — Position on a blow moulding where two halves formed by fusion of the parison unite. In case of injection moulding, it is a point where the material shows incomplete union.

Wet Bonding — The process in which a solvent or water based liquid adhesive is applied to a substrate which is then immediately combined with another material to produce a laminate.

Wetting Tension — The surface energy of a substrate. A measure of the ability of a liquid to flow on a base material.

Y

Yield — The area in square metres of 1 kg of film conditioned at 35 percent relative humidity.