

# Glossary



**Additive:** A substance added to a polymer in order to provide a specific functionality or characteristic.

**Antiblock:** An additive concentrate designed to alleviate issues in film where layers have a tendency to cling or stick together. Antiblocks are added to roughen the surface of the film.

**Antioxidant:** An additive that is added to reduce or prevent polymer degradation caused by oxidation.

**Antistat:** Polymers are often very effective insulators and are prone to build electrical charges that can attract dirt particles, or discharge causing shocks and sparks. An antistat is used to provide a pathway by which the static charge can dissipate safely, gradually, and continuously.

**Ash Content:** The amount of solid residue expressed as a percent that remains after a sample is heated in a specific manner.

**Biodegradable Plastic:** Plastics that can be broken down biologically, in a reduced time period, under specific conditions, into their basic components.

**Bio-degradation:** Polymer degradation that occurs due to micro-organisms when buried in soil.

**Bioplastic:** A plastic derived from renewable raw materials such as vegetable oil, corn or pea starch. Some but not all bioplastics are designed to be biodegradable.

**Blend:** BL: CCC designation for a product that is not extruded into a pellet form, but is sold as a “blend only”.

**Bloom:** Many different products added to resins are not fully compatible. The additives are migratory within the polymer and will move to the surface of the finished material. Slip, antistat, antifog, some UV stabilizers, etc will bloom.

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**CIE LAB:** A colour measurement system where the L,A,B values are plotted on a three dimensional grid at right angles to one another

L\* represents the light dark value: 100 for white 0 for black

A\* Red-Green coordinate in CIE LAB: Negative indicates greenness, Positive indicates redness.

B\* Yellow-Blue coordinate in CIE LAB: Negative indicates blueness, positive indicates yellowness.

**Clarifier:** A type of additive used to improve the optical transparency of a resin. Clarifiers are often used in PE and PP.

**Concentrate or Masterbatch:** MB: CCC designation for a product designed to be used at a specific rate or let-down-ratio.

**Compound:** This describes a product that is designed and produced to contain all necessary components and is used by the customer 100% as it is sold.

**Delta E:** The total colour difference calculated using the difference in measured L, A, B values from a STD using a colour difference equation.

**Density/Specific Gravity:** Density is the weight per unit of volume reported as grams/cm<sup>3</sup>

**Durometer:** Is one of several ways to describe/measure the hardness of a polymer. It is defined as a material's resistance to permanent indentation . Durometer is also the name of the devise used to accomplish this hardness measurement.

**Elongation:** This is a percentage value of the measured length of a specimen after a tension test divided by its original length, after the sample has been pulled to the point of fracture.

**Flexural Modulus:** A measure of the ability of a specific cross section of a plastic to resist deformation/bending when a force or weight is applied.

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**Gels:** A common problem in clear/transparent film that shows as small visibly distorted areas (fisheyes) or specs. Gels could be high molecular weight molecules or cross linked materials. These can be caused by overheating, degradation, fines from regrind, organic or inorganic contamination. Gels can be present in purchased resins or created during extrusion.

**Haze:** A statement of the amount of light scattering by a material. Haze defines the optical clarity and is the reference used for clear films. It should not be used for opaque films.

**Izod:** A measure of the material's impact resistance. This is reported as the amount of energy needed by a pendulum hammer that will fracture a notched or unnotched test specimen. (ASTM D256)

**Lacing:** This term is used to describe a particular occurrence in white film which in extreme cases can resemble lace. It is a result of volatile released as the film is run. It is often a complex combination of pigment, surface treatment, temperature, and film gauge that cause the bubbles or holes in the finished film.

**Laser Marking:** Marking done on parts that uses no toner or ink, it is immediately rub-fast and permanent. It is done by various types of laser for identification or decoration. In PP, PE and PS, special additives are needed to produce a laser mark.

**Let-down-ratio (LDR):** When working with a concentrate, pigment or additive, this defines the mathematical usage rate.

- 100:1 or 1% LDR: This represents 1 gram concentrate plus 99 grams of resin
- 50:1: or 2% LDR: 2 grams of concentrate plus 98 grams of resin
- 25:1 or 4% LDR: 4 grams of concentrate plus 96 grams of resin

**Melt Fracture:** This is seen as a jagged or uneven surface on extruded material and is often referred to as "Shark skin" It appears when material sticks, and then slips on the die wall during extrusion resulting in the rough/wavy surface.

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**Metamerism:** This is a colour term that is used to describe colours that appear to match in one type of light, but differ in another. This is common when inorganic or heavy metal colours are re-matched to meet specific requirements such as CONEG, direct food contact or RoHS.

**Nucleator:** An additive that is added to a polymer to provide fine crystallization points for when a material is going from its molten state to solid.

**Opacity/Transmittance:** This is the measure of the light that passes through a sample or conversely the amount of light that is blocked from passing through a sample. It is used to define materials that are not clear.

**PPG:** Pellet per gram: This is the number of pellets it takes to total one gram weight. PPG is used to provide a consistent pellet size guideline for pellet production.

**Pantone PMS:** One of several matching systems designed to standardize colour and provide easy colour communication. Other systems: Munsell, RAL, Federal Std, etc

**Parts per Million, PPM:** Describes very low levels or concentrations. Percent is 1 in 100, parts per million is 1 in 1,000,000.

- 1 ppm = 0.0001
- 10 ppm = 0.001
- 100 ppm = 0.01
- 1000 ppm = 0.10

**Slip:** An additive used to reduce the coefficient of friction on a film surface. This will allow one film to slide easily over another or over processing equipment surfaces.

**Tensile Strength.** This is a value provided that supplies a measure of the force per unit of areas that a sample can support without fracturing.

**UV Stabilizers:** A large assortment of additives, with various mechanisms that are designed and used to protect/defend polymers from degradation by UV exposure.

**VCI-Vapour Corrosion Inhibitor:** As the name implies, this additive is designed as a volatile that will deposited on a specific type of metal surface to help inhibit corrosion.