

Standard Glossary of Food Contact Material Inks and Coatings Terms

Acrylic binder	Non-reactive Styrene-acrylate-copolymers or pure acrylate polymers as a resin solution in water or as a dispersion of polymer particles stabilized in water. Both forms are used for the formulation of water based overprint varnishes and flexo inks. Acrylic binders are also used as a co-binder in solvent based inks and in heat-seal coatings.
Additive	An ink additive is a substance used in small quantities, which optimises the technical properties of the printing ink, primer and/or overprint varnish in their manufacture or in the printing process as well as the technical properties of the printed product.
Basecoat	A white or coloured coating applied to the substrate prior to the application of inks and or overprint varnish
Binder/ Vehicle	<p>Binders (natural or synthetic resins) are the film-forming components of a vehicle, in which the colouring material is finely dispersed or dissolved. The vehicle is important for the transfer of the ink from the duct to the substrate. After the drying of the print, the binder serves to bind the colorant to the printed surface.</p> <p>Vehicles for offset inks:</p> <ul style="list-style-type: none"> - Vehicles based on solutions or dispersions of hard resins in oxidative drying or non-drying vegetable oils and/or fatty acid esters, and alkyd resins manufactured from vegetable oil fatty acids - Vehicles based on solutions or dispersions of hard resins in hydrocarbon solvents. - Combination of these two types of vehicles <p>Vehicles for gravure and flexographic inks:</p> <p>These vehicles consist of low viscous solutions of resins in volatile solvents which are evaporated during drying</p> <ul style="list-style-type: none"> - vehicles for packaging gravure inks primarily contain alcohols and esters, but also other solvents, if necessary - vehicles for flexographic inks contain as solvent primarily alcohols/esters and/or water <p>Special vehicles for UV/EB inks and varnishes:</p> <p>These vehicles are based on reactive acrylate derivatives. They dry during an immediate polymerisation process under the influence of UV/EB radiation</p>
Colourant	Colouring materials (colorant) is a generic term including pigments , which are insoluble in the medium (the vehicle or the binder), or dyes , which are soluble in the medium. The colouring effect is due to “chromophore groups” being part of the structure of these substances. Chromophore groups absorb specific wavelength areas of the visible light spectrum.
Conventional offset ink	A sheetfed offset ink, which is drying by oxidation and/or drying by absorption, as opposed to an energy curing offset ink.

Direct Food Contact (DFC) Ink	Direct Food Contact (DFC) Inks are a subset of Food Contact Material (FCM) inks. A DFC ink is defined as an ink that is intended to be, or can foreseeably be, in direct physical contact with food. For DFC applications the diffusion path between ink/coating and food is short, and so there is a greater potential for migration.
Drier Siccative	Driers are metal salts of organic acids, which are soluble in oils. They are used as ingredients of or added to oxidative drying offset printing inks in very small amounts, acting as catalysts by transferring the oxygen from the air to the drying oil and in this way accelerating the oxidation and polymerisation of the oil to yield a dry ink film.
Dye	see Colourant
Energy curing	Energy curable inks and coatings dry by curing through ultraviolet light (UV) or electron beam (EB) induced polymerisation. UV systems need photoinitiators.
Food packaging ink or coating	See: Food Contact Material (FCM) Ink and Non-Direct Food Contact (non-DFC) Ink
Functional barrier	A functional barrier is a barrier consisting of one or more layers of any type of material, which shall ensure that the migration of authorised substances into the packed foodstuff does not exceed the overall migration limit or the substance specific migration limits, and which prevents the transfer of non-evaluated substances above detectable levels.
IAS	Intentionally added substances. (For details please refer to the EuPIA Guidance for Risk Assessment of Non-Intentionally Added Substances (NIAS) and Non-Listed Substances (NLS) in printing inks for food contact materials)
Lacquering Coating Varnishing	In printing, lacquering, coating or varnishing refer to the application of a liquid or paste, unpigmented ink like product, which after drying is mostly transparent. Thereby, certain surface properties are obtained, as for example protection against mechanical damage, gloss or matt surface effects, and/or specific slip or adhesion properties.
Food Contact Material (FCM) Ink	A food contact material (FCM) ink means any ink applied to a material that is in contact with food. A food contact material ink is required to be compliant with the EuPIA Good Manufacturing Practices. The term includes both direct food contact (DFC) and non-direct food contact (non-DFC) inks.
Migration	Migration is a partition and diffusion controlled transfer process of small molecules (below a molecular weight of 1000 g/mol) from the food contact material or article into food or food simulant. The transfer of packaging ink components can take place either by migration through the substrate, by set-off to the reverse side and subsequent migration into food, or by gas phase transfer.
Migration modelling	The assessment of compliance with specific migration limits may be made with the application of generally recognised diffusion models based on scientific evidence. Only migration testing of the foodstuff counts as complete

	verification.
Mineral oil	<p>Mineral oils are petroleum derived substances, produced by refining crude oils. They are manufactured by atmospheric and vacuum distillation (at temperatures between ~300°C and ~700°C) of crude oil and are then further refined. They consist of complex mixtures of hydrocarbon molecules of different size (20 to 30 carbon atoms) in which the carbon chains are linear, branched and/or cyclic. Types of mineral oils may be characterised by their content of paraffinic, naphthenic and/or aromatic structures. Mineral oils classified as carcinogenic according to CLP regulation are not used by EuPIA members in accordance with the EuPIA Exclusion Policy. Mineral oils have to be distinguished from waxes and hydrocarbon solvents. Hydrocarbon solvents have a different manufacturing process which distinguishes them from mineral oil, with their chain lengths up to C20. The terms MOSH, MOAH, POSH, etc are terms used to describe various components seen in chromatography, and do not necessarily align with the hydrocarbon derivatives used as raw materials. Migration concerns are mainly related to the MOAH component. Note that some highly refined MOH fractions are permitted Food Contact Materials.</p>
Mixture	The term “mixture”, as used in the CLP Regulation (EC) No 1272/2008, means any preparation or solution composed of two or more chemical substances.
Nanomaterial	<p>A natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50 % or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm - 100 nm.</p> <p>Based on the definition in Commission Recommendation 2011/696/EU on Nanomaterial</p>
NIAS	<p>Non intentionally added substances.</p> <p>(For details please refer to the EuPIA Guidance for Risk Assessment of Non-Intentionally Added Substances (NIAS) and Non-Listed Substances (NLS) in printing inks for food contact materials)</p>
Non-Direct Food Contact (non-DFC) Ink	Non Direct Food contact (non-DFC) inks are a subset of food contact material (FCM) inks where the ink is used on the non-food contact surfaces of food packaging and articles intended to come into contact with food. There is a potential for migration of components from the ink/coating/varnish.
Overall migration	“Overall migration” (OM) means the sum of the amount of non volatile substances released from a material or article into food or food simulant. The Overall Migration Limit (OML) means the maximum permitted amount and is defined in the Plastics Regulation (EU) No 10/2011.
Overprint varnish (OPV)	Transparent, film-forming preparation applied by various processes on to the print, and intended to add certain surface properties to the ink film such as increased gloss or protection (see also: Lacquering, Varnishing).

Printing Ink or Coating	<p>Printing inks are:</p> <ul style="list-style-type: none"> a) Mixtures of colourants with other substances which are applied on materials to form a graphic or decorative design together with or without b) Other coloured or uncoloured overprint varnishes/ coatings or primers which are normally applied in combination with a) in order to enable the printed design to achieve specific functions such as ink adhesion, rub resistance, gloss, slip/friction, durability, etc. <p>Printing inks do not include coatings which are applied with the prime objective of enabling the material or article to achieve a technical function such as heat sealing, barrier, corrosion resistance etc., as opposed to a graphic effect, even though they may be coloured.”</p>
Packaging ink layer	Packaging ink layers, in their finished state, are thin dried or cured films of packaging ink on the non-food contact surface of substrates. In practice, the coverage is less than 100% and the printed image is not a continuous layer.
Pigment	see Colourant
Photoinitiator	An additive, having a technical function exclusively in UV curing inks or coatings. It induces the polymerization (drying) of the ink or coating via absorption of UV light.
Plasticiser	A non-volatile liquid or resinous substance used in solvent based liquid inks to confer to the printed ink film flexibility and improved adhesion to the substrate. ...
Preparation	“Preparation” means any mixture or solution composed of two or more substances (components). See "mixture".
Primer or size coat	A continuous coating applied to the base substrate to provide good adhesion and printability of inks and coatings
QM value	“QM” as defined in the Plastics Regulation (EU) No 10/2011 means the maximum permitted concentration of a specific substance present in the material or article
Raw material	Raw materials used in the manufacture of packaging inks are substances and mixtures as defined in the CLP Regulation (EC) No 1272/2008.
Set-off	Set-off is the transfer of substances from one side of a material or article to the other side, through direct contact between these different sides caused by the stacking or reeling of the materials. Set-off may be visible or invisible (see: migration). Visible set-off is regarded a quality issue.
Solvent	Solvents are liquids, which have the capability to dissolve other substances without changing chemically the dissolved substance or itself. The components in a solution cannot be separated mechanically from each other (for example by filtration or centrifugation). The original components of a solution can be isolated from each other in their original form by physical methods (for example evaporation, distillation, and adsorption). Solvents may be volatile (such as those used in "solvent based" liquid inks for flexible packaging), or non-volatile (such as

	vegetable oil in sheetfed inks).
Specific migration	“Specific migration” (SM) means the amount of a specific substance released from a material or article into food or food simulant. The Specific Migration Limit (SML) means the maximum permitted migrated amount of a substance and is defined in the Plastics Regulation (EU) No 10/2011.
Standard offset ink or coating	Any offset printing ink or coating which is not designed to be used as a food packaging ink, as opposed to a "low migration" or "food packaging" sheetfed offset ink or coating. Example: inks/coatings designed for non-food packaging or for publication printing.
Statement of Composition (SoC)	The key instrument for communication within the food contact material supply chain. It lists all substances used or known to be present inside the print layer with the potential to migrate including their relevant migration limits. It is provided to customers and/or Analytical Contractors that they are able to comply with all applicable health and safety laws, regulations, and orders (especially Regulation (EC) No. 1935/2004).
Substance	“Substances” means chemical elements and their compounds in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the products and any impurity derived from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition.
Substrate	The base material on the surface of which a mixture or substance may be deposited for varying purposes such as printing, lacquering, coating, etc. Examples of substrates for printing are: paper, carton, board, corrugated board, plastic films, metal foils, tin plates. Also tubes, glass and some cast materials can be printed by means of special printing processes. Based on a definition according to “Terminology of Printing Ink Technology”, CEPE 1990
Worst Case Calculation	A form of assessment, which does not refer to measured migration levels of substances from a food packaging structure, but gives the calculated maximum theoretical migration of each potential migrant substance known to be present in the structure.