

Printing & Packaging

Industrial Coatings

Technical Data Sheet

Laromer[®] PE 55 F



Product Description Laromer[®] PE 55 F is a polyester- modified acrylic resins for the formulation of radiation-curable printing inks and coatings, for wood products, paper and plastics

Key Features & Benefits

- *Minimal yellowing*
- *Easy to blend with other photoinitiators*

Chemical Structure Polyester acrylate resin

Properties

Typical Properties

Viscosity at 23 °C (73 °F) (ISO 3219 A) (Shear rate D 25 s ⁻¹)	25.0 – 45.0 mPa s
Acid value (EN ISO 3682)	≤ 5 mg KOH/g
Iodine color number (DIN 6162)	≤ 10
Density (ISO 2811-3)	~ 1.20 g/cm ³
Flash point (DIN EN ISO 2719)	> 100 °C (212 °F)

Physical form low – medium viscous liquid

Solubility, diluent tolerance Soluble in many solvents common to the coatings industry except in aliphatic hydrocarbons.

For the formulation of low viscosity inks or coatings, they can be diluted with monomers such as Laromer[®] HDDA, Laromer[®] TMPTA, Laromer[®] DPGDA, and Laromer[®] TPGDA or with esters, ketones, and aromatic hydrocarbons.

Compatibility Can be homogeneously mixed with most unsaturated acrylate oligomers such as other Laromer[®] grades.

These typical values should not be interpreted as specifications.

Applications

These resins have a balanced property profile are used as sole binders or in combination with other unsaturated acrylic resins for the formulation of electron-beam or UV curable printing inks or coatings. Laromer® PE 55 F is used in the following applications: coatings for wood, wood products, plastics, paper and printing inks.

Processing

All resins listed can be further diluted with low-volatile monomers such as monofunctional, difunctional or trifunctional acrylates. These are incorporated into the film during curing and thus influence its properties.

Monofunctional acrylates increase film flexibility. Difunctional acrylates have little influence on film hardness and flexibility while trifunctional acrylates increase film hardness.

With an adequate flash-off zone available, inert solvents may also be used. These must, however, be completely removed from the film prior to radiation curing.

A photo initiator must be added to allow curing by ultraviolet radiation. Suitable initiators are, among others, Irgacure® 819, Irgacure® TPO, Irgacure® TPO-L, Irgacure® 2100, Irgacure® 1173, Irgacure® 184, Irgacure® 500, and Irgacure® 127 and Irgacure® 754. Depending on the desired reactivity, the usual application rate is 2–5 %.

To increase the reactivity in thin films, a tertiary amine such as methyl diethanol amine or an amine synergist can be added to formulations. Care must be taken to ensure that the amine does not react with the substrate, particularly pale-colored ones.

Safety

General

The usual safety precautions when handling chemicals must be observed. These include the measures described in Federal, State and Local health and safety regulations, thorough ventilation of the workplace, good skin care and wearing of protective goggles.

Material Safety Data Sheet

All safety information is provided in the Material Safety Data Sheet Laromer® PE 55 F.

Storage

Laromer® PE 55 F must be protected from light and heat (below 30 °C [86 °F]) and kept in tightly sealed containers. Under these conditions, the shelf life is twelve months.

Important

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