Industrial Coatings

Technical Data Sheet

Laromer® PO 9026

We create chemistry

Product Description	**Laromer® PO 9026 is a polyether acrylate resin with 50 % nano-scale silica for the formulation of radiation-curable coatings for plastics, wood and wood products**
Key Features & Benefits	***- Good adhesion*** ***- Low viscosity*** ***- Good resistance to chemicals***
Chemical Structure	**Amine- Modified polyether acrylate**

Properties

Typical Properties

Physical form	medium – viscous liquid
Viscosity at 23 °C (73 °F) (DIN EN ISO 3219)(Shear rate D 50 s^{-1})	~ 1.5 mPa s
Acid value (DIN EN ISO 3682)	≤ 5 mg KOH/g
Iodine color number (DIN 6162)	≤ 10
Density at 20 °C (68 °F) (ISO 2811, DIN 53217)	~ 1.35 g/cm^3
Flash point (DIN EN ISO 2719)	> 61 °C (141 °F)

Solubility, diluent tolerance

Laromer® PO 9026 is soluble in all common paint solvents except for aliphatic hydrocarbons and alcohols.

For the production of low-viscous coatings it can be thinned with monomers such as Laromer® HDDA (hexanediol acrylate), Laromer® TMPTA (trimethylolpropane triacrylate) and Laromer® TPGDA (tripropyleneglycol diacrylate) or with esters, ketones and aromatic hydrocarbons.

Compatibility

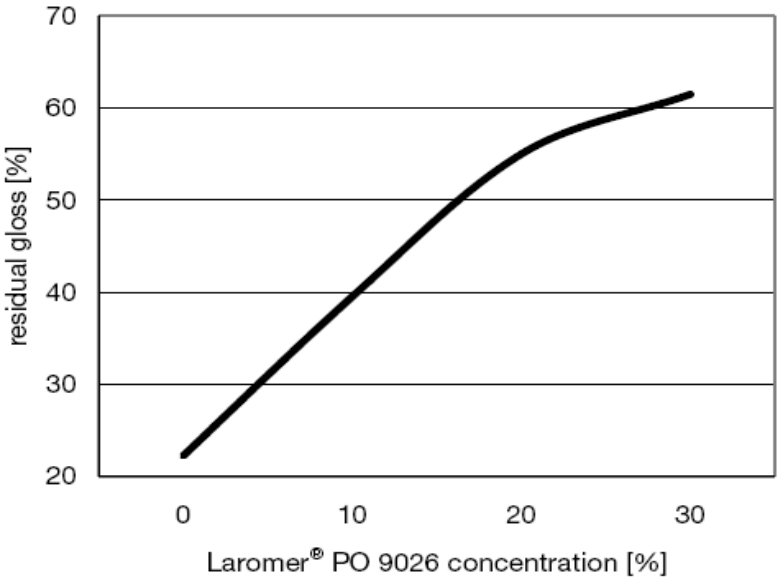
Laromer® PO 9026 can be homogenously mixed with most unsaturated acrylic resins such as other Laromer® grades. In combination with strongly alkaline components (e. g., tertiary amines to increase reactivity or amine-modified products), incompatibilities may occur sporadically.

These typical values should not be interpreted as specifications.

Applications

Laromer® PO 9026 shows an extraordinarily good resistance to scratching and is used in combination with other radiation-curable resins to formulate UV- or electron-beam-curable coatings for wood, wood products and plastics.

Scratch resistance can be improved dramatically by adding approx. 30 % (by weight of the recipe) of Laromer® PO 9026.



Calculation formula for residual gloss:

$$\text{residual gloss} = \frac{\text{gloss before scratching}}{\text{gloss after scratching}} \times 100$$

recipe	80 parts Laromer® LR 9004 20 parts Laromer® TPGDA 4 parts Irgacure® 1173 X parts Laromer® PO 9026
test method	50 double rubs Scotch-Brite®[2] film thickness 100 µm curing 5 m/min, 1 lamp, 120 W/cm

Processing

Laromer® PO 9026 can be further diluted with low-volatile monomers such as monofunctional, difunctional or trifunctional acrylates. These are incorporated into the film during curing and 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 can also be used. However, they must be removed completely from the film prior to exposure to radiation since they would detrimentally influence film properties.

A photoinitiator must be added to allow curing by light. Good results can be achieved with Irgacure® 819, Irgacure® TPO , Irgacure® TPO-L, Irgacure® 2100, Irgacure® 1173, Irgacure® 184, Irgacure® 500, Irgacure® 127 or Irgacure® LEX 201. The usual addition rate is 2–8 %, depending on the desired degree of reactivity.

Higher reactivity, especially in thin films, can be achieved by adding amine-modified products. Compatibility and stability of the viscosity must be observed.

[2] registered trademark of 3M Company

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.

Safety Data Sheet All safety information is provided in the Safety Data Sheet Laromer® PO 9026.

Storage

Protected from light and heat (storage temperatures below 30 °C [86 °F]) and in tightly sealed containers, Laromer® PO 9026 can be stored for 6 months.

Important

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