

Industrial Coatings

Technical Data Sheet

Laromer® UA 9072



Product Description	Laromer® UA 9072 is a urethane-modified acrylic resin for the formulation of energy curable coatings for wood, wood products, plastic and mineral substrates.
Key Features & Benefits	<ul style="list-style-type: none">- Very high elasticity- Heat stable- Very flexible- Good weatherability
Chemical Composition	Aliphatic urethane acrylate, 70% solution in Laromer® TBCH

Properties

Typical Properties	Appearance	high viscous liquid
	Viscosity at 23°C (73°F)	~ 100,000 – 130,000 cps
	Shear rate D	~ 100 s ⁻¹
	Iodine color number	< 2
	Density at 20°C (68°F)	~1.08 g/cm ³
	Flash point	> 103°C
	Elongation	> 200%
	Tensile strength	> 12 N/mm ²

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

For the formulation of low viscous coatings, it can be thinned with monomers such as Laromer® HDDA, Laromer® DPGDA, or Laromer® TPGDA as well as with esters, ketones, or aromatic hydrocarbons.

Compatibility Laromer® UA 9072 is compatible with most unsaturated acrylic resins, i.e., other Laromer® brands.

These typical values should not be interpreted as specifications.

Applications

Laromer® UA 9072 is an aliphatic urethane acrylate for the formulation of UV- or EB-curable coatings. Laromer® UA 9072 was developed for coatings with high elongation and flexibility and get high toughness/strength.

Coatings based on Laromer® UA 9072 show an extra ordinary toughness/elasticity ratio (elongation of ± 300% at a tensile strength of approximately 15 – 20 N/mm²). It is recommended on plastic and mineral substrates to enhance the mechanical properties. Due to low shrinkage, it also shows good adhesion.

Laromer® UA 9072 exhibits high resistance against yellowing making it the preferred resin for exterior applications. In combination with a suitable light stabilizer such as Tinuvin® 292 or Tinuvin® 400, outdoor durability is enhanced.

Processing

The processing viscosity desired can be adjusted by adding solvents common to the coatings industry, low volatile monomers such as mono-, di-, or tri-functional acrylates. Reactive thinners are incorporated into the film during curing and influence its properties. Mono-functional acrylates increase film flexibility, di-functional acrylates have little influence on film hardness and flexibility; tri-functional acrylates increase film hardness.

Solvents contained in the formulation (or carried into it by the Laromer[®] resin) must be flashed off completely prior to exposure to energy since they would adversely influence film properties.

A suitable photoinitiator must be used to cure Laromer[®] UA 9072 with UV energy such as Darocur[®] 1173, Darocur[®] BP, Irgacure[®] 184, Irgacure[®] 819, Irgacure[®] 2100, Lucirin[®] TPO, and Lucirin[®] TPO-L for typical coating applications. The amount of photoinitiator varies between 2 – 5% based on Laromer[®] UA 9072 as delivered. UV cured films (with 4% Irgacure[®] 500) are very soft and show reflow properties after mechanical load.

Higher reactivity, particularly in thin films, can be achieved by adding tertiary amines, such as methyl diethanolamine or reactive tertiary amines in combination with the photoinitiator. Care must be taken to ensure the amine does not react with the substrate, particularly a pale colored one.

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 for Laromer[®] UA 9072.

Storage

Properly stored and protected from light and heat, the unopened original container of Laromer[®] UA 9072 should have a shelf life of at least 12 months. Store in tightly sealed containers at temperatures below 30°C (86°F).

Important

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