

Technical Information of INT Cyclohexanone-formaldehyde Resin

Cyclohexanone-formaldehyde resin is the condensation polymer of cyclohexanone and formaldehyde, which includes carbonyl and hydroxyl group, it can also be called ketone aldehyde resin. It shows excellent compatibility with almost coating/printing raw materials. It is soluble in almost organic solvents and exhibits good wetting and dispersion to the filling and pigment. It can also improve yellowing-resistant, adhesion, gloss and hardness of coating. It is a kind of excellent multifunctional additive of coating. It is usually as grinding resin in universal pigment and coating/printing. There are INT 105, INT 120, INT 120L and INT 130 according to different property and application.

Specification

Item	Series	INT 105	INT 120	INT 120L	INT 130	Test Method
Appearance		Yellowish, transparent solid, no obvious mechanical impurity after dissolution				Naked eye
Softening point (°C)		95-105	105-125	105-125	125-140	ISO 4625-1:2004
Color Gardner ^[1]		<1	<1	<1	<1	ISO 4630-1:2004
Dissolve with ethanol		excellent	excellent	excellent	common	Resin dissolve with ethanol by 50%
Acid value (mgKOH/g)		<3	<3	<3	<3	ISO 2114:2000
Hydroxyl value (mgKOH/g)		70-110	70-110	≥ 160	≥ 80	DIN 53240-2:1998
Density(g/cm ³)		1.15±0.05	1.15±0.05	1.15±0.05	1.15±0.05	ISO 1183-1:2004(E)B
Kinematic viscosity ^[2] (mm ² /s)		10-30	30-50	30-50	40-60	GB/T 1660-2008
Ford cup 4 viscosity ^[3] (s)		15-25	20-30	20-30	25-35	ASTM D1200

[1] The resin is 50% (mass fraction) solution in butyl acetate and ethanol, they account for 85% and 15% respectively.

[2][3] 50% resin solution of ethanol, solution temperature remains 25°C when viscosity is detected.

Solubility

Cyclohexanone-formaldehyde resin is soluble in almost common paint solvents such as aromatic hydrocarbons, alcohols, ketones, esters and so on, but insoluble in water. Its solubility in nonpolar solvents such as mineral oil, aliphatic hydrocarbon, alicyclic hydrocarbon is limited, which should be paid attention.

Application

Cyclohexanone-formaldehyde resin is characteristic of excellent compatibility, solubility and transparency, which enable it to improve gloss, adhesion, hardness, fullness and dryness when applied in formulation of coating/printing. It is a kind of excellent grinding resin in universal pigment and can improve solid content when applied in coating.

- INT 105 resin is used for formulation of coating/printing which requires high adhesion.
- INT 120 resin is used for formulation of common coating/printing.
- INT 120L resin is almost odorless, so it is used for formulation of coating/printing which requires inodorous.
- INT 130 resin is higher softening point resin, so it is used for formulation of coating/printing which requires hardness and dryness.

Storage

Cyclohexanone-formaldehyde resin must be stored in dry and cool place, the period of validity is one year, it also can be used after one year if examined again and conformance to requirements.