

Technical Data Sheet of INT Aldehyde Resin

Aldehyde resin is the condensation of urea and aliphatic aldehydes, colorlessly crystal or slightly yellowish, soluble in almost paint solvents except in water and widely compatible with coating raw materials. This range of products include INT A-81, INT A-81 Non-Benzene, INT A-101 and INT A-101 Non-Benzene, of which the two benzene free aldehyde resins are specially developed for coatings or printing ink formulations with high environmental requirement for their zero containing of benzene, toluene, xylene and ketones resulted from exclusive clean manufacturing technology.

1、Main Technical Data

| Property | Range | INT A-81 | INT A-81 Non-Benzene | INT A-101 | INT A-101 Non-Benzene | Test Method |
|---|---|--------------|----------------------|-----------|-----------------------|---------------------------|
| Appearance | Colorlessly crystal or slightly yellowish, hard small piece, no obvious mechanical impurities after dissolution | | | | | Naked eye |
| Color Gardner ¹ | < 1 | | | | | ISO 4630-1 : 2004 |
| Softening point(°C) | 90-100 | 95-100 | 100-110 | 100-110 | | ISO 4625-1 : 2004 |
| Acid value(mgKOH/g) | <3 | <3 | <3 | <3 | | ISO 2114 : 2000 |
| Hydroxyl value(mgKOH/g) | 40-70 | 40-70 | 40-70 | 40-70 | | DN 53240-2 : 1998 |
| Density(g/cm ³) | 1.10±0.05 | | | | | ISO 1183-1 : 2004 (E B |
| Kinematic viscosity ² (mm ² /s) | 10-25 | 10-25 | 15-30 | 15-30 | | GBT 1660-2008 |
| Content of benzene, toluene, dimethylbenzene(%) | | Not detected | | | Not detected | SGS |

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

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

2、Solubility

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.

3、Compatibility

Their compatibility with coatings raw materials include but are not limited as:

| | | | |
|-----------------------|-----------------------------|----------------------------|---------------------------|
| Alkyd resin | Cellulose nitrate | Cellulose acetate-butylate | Petroleum resin |
| Phenolic resin | Urea-formaldehyde resin | Epoxy resin | Rosin |
| Acrylic resin | Polyurethane resin | Chlorinated rubber | Vinyl chloride copolymers |
| Phthalate plasticizer | Melamine-formaldehyde resin | Polysamide resin | |

4、Application

- INT aldehyde resin has excellent compatibility and solubility, applicable for various sorts of coatings/oil ink formulas;
- Effectively to improve coating film's yellowing-resistance, gloss, adhesiveness, hardness and gloss.
- Good pigment and filler wetting function, applicable for all-purpose colorant's grinding resin thanks to its low viscosity while being dissolved or melted;
- INT A81 Non-Benzene and INT A101 Non-Benzene especially applicable for environment-friendly coatings/oil ink formulas thanks to their being free of benzene, toluene and xylene.
- Dissolved into solvents to prepare 50% resin liquid, then added it into coatings/oil ink formulas. Generally adding percentage is 5-30% of the formula's total mass.

5、Package & Storage

- Package: 25kg/bag
- Stored in dry and cool environment.
- Shelf life not less than 12 months and able to be used after validity period if key data still conform to requirements after being tested.