# FORAL™ 105-E Ester of Hydrogenated Rosin



FORAL™ 105-E ester of hydrogenated rosin is a pale, thermoplastic ester resin derived from pentaerythritol and a highly stabilized rosin. Like FORAL 85-E ester of hydrogenated rosin, which is produced from the same unique oxidation-resistant rosin, FORAL 105-E offers advantages as the tackifier or modifier resin in various adhesives and coating compositions. In these applications, both resins exhibit resistance to oxidation and to discoloration caused by heat and aging. FORAL 105-E has a substantially higher softening point and is therefore indicated where a harder resin is desired. It is also used in UV cured acrylics to improve adhesion to low surface energy substrates when high tack is not needed.

- Compatible with UV acrylic adhesives
- Excellent resistance to oxidation
- High softening point
- Improved adhesion to low surface energy substrates
- Light color
- Low odor
- Thermoplastic hydrogenated resin
- Wide solubility and compatibility range

For further information regarding this product please refer to:

Synthomer Adhesive Technologies

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| Property | Typical Value | Unit | Method[1] |
|---|---|---|---|
| Description, Base Resin | Hydrogenated Gum Rosin | | |
| Ring and Ball Softening Point | 98 | °C | ASTM E 28 |
| Color, Gardner | 6 | | ASTM D 6166, 50% solids in toluene |
| Acid Number | 14 | mg KOH/g | ASTM D 465 |
| Melt Viscosity at 160°C | 410 | cP | Brookfield |
| Melt Viscosity at 140°C | 2000 | cP | |
| Melt Viscosity at 120°C | 20000 | cP | |
| Density at 25°C | 1.06 | kg/dm³ | |

[1] internal method based upon the specified norm

## Applications

Caulks and Sealants, Roadmarking, Packaging specialities, Carpet, Graphic inks, Labels, Tapes, Other coatings, Roofing, Speciality tapes, Assembly, Film Modification, Hygiene Adhesives, Plastic Modification, Other adhesives , Packaging, Wire & Cable

## Compatibility and Solubility

Compatible at all ratios, or in limited but practically useful proportions, with other resins, waxes, and plasticizers; with natural and synthetic rubbers, chlorinated rubber, and ethylcellulose; with EVA (ethylene-vinyl acetate) copolymers and low molecular weight polyethylene; with SIS (styrene-isoprene-styrene) and SBS (styrene-butadiene-styrene) block copolymers; with APAO (amorphous poly-alphaolefins); with acrylic resins; with certain polyamide resins and polyurethane compounds; and with PVP (polyvinylpyrrolidone), polyvinylbutyral, nitrocellulose, drying oils and alkyd resins.
Soluble in esters; ketones; higher alcohols; glycol ethers; and aliphatic, aromatic, and chlorinated hydrocarbons. Insoluble in ethanol and water. Solubility Parameters, 50% resin concentration: 7,0-10,7 in Class I solvents - weakly hydrogen-bonded; 7,4-10,6 in Class II solvents - moderately hydrogen-bonded; 9,5-11,9 in Class III solvents - strongly hydrogen-bonded.

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## Packaging

FORAL™ 105-E ester of hydrogenated rosin is pastillated and packed in polyethylene bags of 25 kg net, and supplied on shrink-wrapped pallets of 40 bags (1000 kg) each, from Synthomer facilities in the Netherlands and from warehouses located in Europe.

## Storage

Due to the thermoplastic behavior, pastillated and flaked resins may fuse, block or lump. This can be accelerated under any of the following conditions: 1) above ambient temperature 2) prolonged storage 3) pressure, e.g., stacking pallets, or a combination of these conditions. This is particularly applicable for low softening point resin grades. In order to maintain the flake or pastille shape, we therefore recommend storing the material in a temperature-controlled area; be careful with stacking material or applying pressure and preventing prolonged storage. It should be noted that lumping does not have a negative impact on the product specifications. Due to the nature of the product, claims regarding lumping cannot be accepted.

Resins are prone to gradual oxidation, some more so than others. This could result in darkening and/or it could have an adverse effect on the solubility of the resin in organic solvents or on its compatibility with polymers. Accordingly, it is recommended that strict control of inventory be observed at all times, taking care that the oldest material is used first.

FORAL™ 105-E ester of hydrogenated rosin material will remain within product specification limits for a period of at least twelve months after shipment from Synthomer"s production facilities in the Netherlands, provided recommended storage conditions are observed. However, as we can neither anticipate the conditions under which the resin is processed nor the end use applications for which it is used, we recommend that the material be tested upon receipt.

## Comments

Properties reported here are typical of average lots. Synthomer makes no representation that the material in any particular shipment will conform exactly to the values given.

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