EASTMAN

Technical Data Sheet

Plastolyn™ R1140 Hydrocarbon Resin

Applications

- Adhesives/sealants-b&c
- Automotive
- Rubber modification

Key Attributes

- Color stability
- Made from purified aromatic monomers
- Very low color, fully hydrogenated

Product Description

Plastolyn™ R1140 Hydrocarbon Resin is an amorphous, low-molecular-weight hydrocarbon resin derived from aromatic petrochemical feedstocks. The resin is fully hydrogenated to a saturated cyclo-aliphatic structure that is highly compatible with polyolefin polymers. This resin is suggested for use as a modifier of polyolefin polymers.

Typical Properties

Property[a]	Test Method[b]	Typical Value, Units[c]
General		
Ring and Ball Softening Point	ASTM E 28	140 °C
Color, Gardner[d]	ASTM D 6166	<1
Cloud Point[f]		
MMAP		94 °C
Molecular Weight[e]		
M_n		900
M_w		1500
M_w/M_n		1.7
M_z		2400
Density		
@ 25°C		0.98 kg/dm^3
Glass Transition Temperature (T_g)[g]		84 °C

[a] *Unless noted otherwise, all tests are run at 23°C (73°F) and 50% relative humidity.*
[b] *Unless noted otherwise, the test method is ASTM.*
[c] *Units are in SI or US customary units.*
[d] *50% in toluene.*
[e] *Molecular weight, z-average from gel permeation chromatography, elution with THF.*
[f] *Cloud point temperature from 2:1 Vol:Vol aniline-methylcyclohexane, Eastman method.*
[g] *Glass transition temperature by differential scanning calorimetry.*

Compatibility and Solubility

Extremely light colour, very good resistance to thermal and oxidative degradation, and excellent compatibility with polyolefin polymers. Compatible at all ratios, or in limited but practically useful proportions, with polyethylene and polypropylene polymers, EVA resins (ethylene-vinyl acetate copolymers), APAO (amorphous poly-alphaolefins), SIS (styrene-isoprene-styrene) block copolymers, mPE (metallocene catalysed polyethylene) polymers, PIB (polyisobutene) and TPE (thermo plastic elastomers).

Plastolyn™ R1140 Hydrocarbon Resin is indicated for use as a modifier in polyolefin polymers.

On account of its high glass transition temperature and excellent polyolefin compatibility, Plastolyn™ R1140 Hydrocarbon Resin high-softening-point hydrogenated hydrocarbon resin, when added to polypropylene film,

imparts modulus and stiffness at room temperature. It also reduces the polymer's elastic memory effect to such an extent that dead folds and twist wrap properties may be obtained.

Because of its low molecular weight and amorphous nature, Plastolyn™ R1140 Hydrocarbon Resin improves the barrier properties, in particular moisture vapour transmission rate, of polypropylene film. It also substantially improves gloss and haze properties of film and sheet. In polyethylene polymers, Plastolyn™ R1140 Hydrocarbon Resin reduces melt viscosity and improves adhesion to fibrous substrates at lower extrusion temperatures.

Packaging

Plastolyn™ R1140 Hydrocarbon Resin is pastillated and packed in polyethylene bags of 20 kg net, and supplied on shrink-wrapped pallets of 50 bags (1000 kg) each, from Eastman 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.

Plastolyn™ R1140 Hydrocarbon Resin material will remain within product specification limits, as mentioned under the heading "Product Specifications", for a period of at least twelve months after shipment from Eastman production facilities in The Netherlands, provided storage conditions outlined in this data sheet 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.

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