EASTMAN

Technical Data Sheet

Kristalex™ 3105SD Hydrocarbon Resin

Applications

- Adhesives/sealants-b&c
- Automotive
- General assembly hotmelts
- Labels non food contact
- Packaging tape
- Rubber modification
- Tape non food contact

Key Attributes

- Excellent thermal stability
- Intermediate softening point
- Low organic volatile content
- Made from purified aromatic monomers
- Suitable for use in food contact applications
- Water-white initial color

Product Description

Kristalex™ 3105SD Hydrocarbon Resin is a water clear, highly color stable, nonpolar, low molecular weight thermoplastic polymer with low organic volatile content. This resin is compatible with a wide variety of oils, waxes, alkyds, plastics, and elastomers, and is soluble in many common organic solvents. It is indicated for use in plastics modification, adhesives, coatings, sealants, and caulks. In EVA-based hot melt adhesives Kristalex™ 3105SD is compatible with EVA grades with up to 18% vinyl acetate and is useful in formulating low-color, low odor adhesives with good low temperature properties. In styrenic block copolymer based adhesives Kristalex™ 3105SD preferentially associates with the styrenic endblocks, producing higher room-temperature cohesion without affecting tack and adhesion properties.

Kristalex™ 3105SD complies with many FDA regulations for applications involving food contact. Users of this product should determine its compliance for their specific application prior to use.

Typical Properties

Property[a]	Test Method[b]	Typical Value, Units[c]
General		
Ring and Ball Softening Point	ASTM E 28	105 °C
Total Organic Volatile Content[d]		<300 ppm
Color, Gardner[h]	ASTM D 6166	<1
Color[e]		
YID		8
Cloud Point[j]		
DACP		<-40 °C
MMAP		4 °C
OMS (full)		53 °C
Molecular Weight[i]		
M_n		850
M_w		1,500
M_w/M_n		1.8
M_z		2,400
Melt Viscosity[f]		
1 poise		205 °C
10 poise		165 °C
100 poise		135 °C
1000 poise		105 °C
Glass Transition Temperature (T_g)[g]		55 °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]*Total volatile content measured by High Performance Liquid Chromatography (HPLC)*
[e]*50% resins solids in toluene*
[f]*Data measured by Brookfield RVT Viscometer with Thermosel*
[g]*Glass transition temperature by differential scanning calorimetry.*
[h]*50% in toluene.*
[i]*Molecular weight, z-average from gel permeation chromatography, elution with THF.*
[j]*Cloud point temperature from 2:1 Vol:Vol aniline-methylcyclohexane, Eastman method.*

Compatibility and Solubility

Compatible in useful proportions with a wide variety of materials, including styrene-butadiene rubber (SBR) and SBR block copolymers; neoprene, nitrile, polybutadiene, and acrylic polymers; chlorinated rubber; ethylene-vinyl acetate (EVA) resins; styrenated, vinylated, and drying oil alkyds; rosin ester resins; and ethyl-hydroxy-ethylcellulose (EHEC). Soluble in aliphatic, aromatic, and chlorinated hydrocarbons; esters; and ketones. Insoluble in alcohols and glycols; limited solubility in nitroparaffins. For low or zero VOC systems Kristalex™ 3105 is soluble in the VOC exempt solvents t-butyl acetate and perchlorobenzenetetrafluoride (PCBTF) and will tolerate some acetone and/or methyl acetate as a diluent in solvent systems based on TBA and/or PCBTF. VOC exemptions and environmental regulations vary regionally and compliance with local standards should be verified before any claims about VOC content are made.

Packaging

Pastilles in multi-wall paper bags (50 lbs, 22. 7 kg net wt).

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.

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