EASTMAN

Technical Data Sheet

Kristalex™ 3100LV Hydrocarbon Resin

Applications

- Adhesives/sealants-b&c
- Automotive
- 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 pure aromatic monomer
- Water-white initial color

Product Description

Kristalex™ 3100LV 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™ 3100LV is compatible with EVA grades with up to 18% vinyl acetate and is useful in formulating low-color adhesives with good low temperature properties. In styrenic block copolymer based adhesives Kristalex™ 3100LV preferentially associates with the styrenic endblocks, producing higher room-temperature cohesion without affecting tack and adhesion properties. Kristalex™ 3100LV complies with many FDA regulations for applications involving direct contact with food. Compliance with a given regulation in a specific situation should be verified prior to use in a food contacting application.

Typical Properties

Property	Test Method	Typical Value, Units
General		
Ring and Ball Softening Point	ASTM E 28	100 °C
Total Organic Volatile Content[a]		<500 ppm
Color, Gardner[e]	ASTM D 6166	<1
Color[b]		
YID		7
Cloud Point[g]		
DACP		<-40 °C
MMAP		6 °C
OMS (full)		65 °C
Molecular Weight[f]		
M_n		700
M_w		1450
M_w/M_n		2.1
M_z		2400
Melt Viscosity[c]		
1 poise		190 °C
10 poise		150 °C
100 poise		130 °C
1000 poise		115 °C
Glass Transition Temperature (T_g)[d]		51 °C

[a] *Total volatile content measure by High Performance Liquid chromatography (HPLC)*

[b] *50% resins solids in toluene*

[c] *Data from Kristalex™ 3100, measured by Brookfield RVT viscometer with Thermosel*

[d]*Glass transition temperature by differential scanning calorimetry.*
[e]*50% in toluene.*
[f]*Molecular weight, z-average from gel permeation chromatography, elution with THF.*
[g]*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™ 3100LV 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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