EASTMAN

Technical Data Sheet

Kristalex™ 3100 Hydrocarbon Resin

Applications

- Adhesives/sealants-b&c
- Bookbinding
- Carpet construction
- Case & carton sealing closings
- Casting wax
- Commerical printing inks
- Concrete
- Film modification
- Hygiene adhesives
- Labels non food contact
- Marine
- Packaging components non food contact
- Packaging tape
- Polymer modification
- Protective coatings
- Roofing
- Solvent borne packaging adhesives
- Specialty tape
- Tape non food contact
- Tires

Key Attributes

- Excellent thermal stability
- Intermediate softening point
- Made from purified aromatic monomers
- Water-white initial color

Product Description

Kristalex™ 3100 hydrocarbon resin is a water clear, highly color stable, nonpolar, low molecular weight thermoplastic polymer. 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™ 3100 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™ 3100 preferentially associates with the styrenic endblocks, producing higher room-temperature cohesion without affecting tack and adhesion properties. Kristalex™ 3100 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[a]	Test Method[b]	Typical Value, Units[c]
General		
Ring and Ball Softening Point	ASTM E 28	100 °C
Color, Gardner[f]	ASTM D 6166	<1
Color[d]		
YID		5
Cloud Point[h]		
DACP		<-40 °C
MMAP		6 °C
OMS		65 °C
Molecular Weight[g]		
M_n		900
M_w		1500
M_w/M_n		1.7

M_z	2500
Melt Viscosity	
1 poise	190 °C
10 poise	150 °C
100 poise	130 °C
1000 poise	115 °C
Glass Transition Temperature (T_g)[e]	51 °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% resins solids in toluene*
[e]*Glass transition temperature by differential scanning calorimetry.*
[f]*50% in toluene.*
[g]*Molecular weight, z-average from gel permeation chromatography, elution with THF.*
[h]*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™ 3100 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.