EASTMAN

Technical Data Sheet

Kristalex™ 5140 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
- High softening point
- Made from purified aromatic monomers
- Water-white initial color

Product Description

Kristalex™ 5140 hydrocarbon resin is a high softening point, low molecular weight resin produced by copolymerization of pure aromatic monomers. It is designed primarily for use as a modifier resin in high performance adhesives and coating compositions. In these applications, its water clear color, heat stability, and resistance to oxidation and discoloration are used to advantage. In EVA-based hot melt adhesives, Kristalex™ 5140 is compatible with EVA grades with up to 18% vinyl acetate and is useful in formulating low-color adhesives with improved high temperature resistance. In styrenic block copolymer based adhesives, Kristalex™ 5140 preferentially associates with the styrenic endblocks, producing higher cohesion at temperatures up to 70°C without affecting tack and adhesion properties. Kristalex™ 5140 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	140 °C
Color, Gardner[f]	ASTM D 6166	<1
Color[d]		
YID		5
Cloud Point[h]		
DACP		<-40 °C
MMAP		10 °C
OMS		>180 °C
Molecular Weight[g]		
M_n		1750
M_w		4900
M_w/M_n		2.8

M_z	9800
Melt Viscosity	
10 poise	220 °C
100 poise	180 °C
1000 poise	160 °C
Glass Transition Temperature (T_g)[e]	90 °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

Very light color, high softening point, excellent resistance to thermal and oxidative degradation. Compatible in useful proportions with chlorinated paraffins, polystyrene, rosin and modified rosins, rosin ester, SBR, and styrene-based block copolymers. Soluble in aromatic and chlorinated hydrocarbons, esters, and ketones. Insoluble in alcohols and glycols. Limited solubility in nitroparaffins. For low or zero VOC systems Kristalex™ 5140 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.