

Technical Data Sheet

Kristalex™ 5140SD 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
- High softening point
- Low odor
- Low organic volatile content
- Made from purified aromatic monomers
- Suitable for use in food contact applications
- Water-white initial color

Product Description

Kristalex™ 5140SD hydrocarbon resin is a high softening point, low molecular weight resin with low organic volatile content and low odor, 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 the advantages. In EVA-based hot melt adhesives, Kristalex™ 5140SD 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™ 5140SD preferentially associates with the styrenic endblocks, producing higher cohesion at temperatures up to 70°C without affecting tack and adhesion properties.

Kristalex™ 5140SD 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	Test Method	Typical Value, Units
General		
Ring and Ball Softening Point	ASTM E 28	140 °C
Total Organic Volatile Content ^b		<500 ppm
Color, Gardner ^e	ASTM D 6166	<1
Color ^a		
YID		7
Cloud Point ^g		
DACP		-40 °C
MMA ^h		10 °C
OMS		>180 °C
Molecular Weight ^f		
M _n		1,650
M _w		4,650
M _w /M _n		2.8
M _z		8,950
Melt Viscosity ^c		
10 poise		220 °C
100 poise		180 °C
1000 poise		160 °C
Glass Transition Temperature (T _g) ^d		90 °C

^a50% resins solids in toluene

^bTotal volatile content measured by High Performance Liquid Chromatography (HPLC)

^cData from Kristalex™ 5140, measured by Brookfield RVT Viscometer with Thermosel

^dGlass transition temperature by differential scanning calorimetry.

^e50% in toluene.

^fMolecular weight, z-average from gel permeation chromatography, elution with THF.

^gCloud 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™ 5140SD 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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