



Lion Copolymer Geismar, LLC
36191 Highway 30 Geismar, LA 70734 U.S.A.
1-225-673-8871 • www.lionelastomers.com

Trilene® Elastomers

Product Data

Trilene 65D

Description

Trilene 65D is an Ethylene-Propylene-Dicyclopentadiene (EPDM) elastomer dispersed and stabilized in water. It is randomly polymerized to produce a polyolefinic polymer with a stable, saturated hydrocarbon backbone and side group unsaturation to enable crosslinking. It has excellent thermal and oxidation stability under normal conditions. Trilene 65D can be used in a variety of water-based applications such as coatings, adhesives, inks, caulks, and sealants.

Unique Features

- Excellent UV, heat, oxidation and chemical stability
- Good mechanical strength
- Manageable viscosity at room temperature
- Low odor and water clean-up
- Crosslinked with metal driers, peroxides, or UV light
- Compatible with a variety of other latex resins
- No Volatile Organic Content (VOC)

Applications

- *Industrial Coatings*: Primary binder or modifier for applications such as roofing, industrial maintenance and institutional paints
- *Adhesives & sealants*: Primary binder or modifier for applications such as pressure sensitive adhesives and industrial caulks
- *Inks & overnight varnishes*: Modifier for applications in laminating inks and overprint varnishes

Typical Properties

<u>Property</u>	<u>Standard</u>	<u>Typical Value</u>
Appearance		Milky white
Weight solids (%) in water		50 - 55
Brookfield Viscosity (cP @ 25°C)	ASTM D2196	5,600
pH Value (@ 25°C)	ASTM D7946	8 - 9
Specific Gravity (g/cc @ 25°C)	ASTM D4052	0.95
M _n	GPC	11,300
M _w	GPC	47,000
Propylene Content (wt. %)		45
Degree of unsaturation (wt. % Dicyclopentadiene)		10

Product Uses

Trilene 65D can be used in a variety of water-based applications such as coating, adhesives, inks, caulks, and sealants. A developmental starting point coating formulation follows



Starting Point Formulation	Weight (grams)	Supplier
Trilene® 65D EPDM latex	350.23	Lion Elastomers
Ti-Pure R-706 titanium dioxide	44.77	Chemours
Deionized (DI) H ₂ O	68.53	
DISPERBYK 2055	0.91	Byk
SR350 TMPTMA	11.42	Sartomer (Arkema)
Mineral spirits*	19.03	
Ricon 156 liquid polybutadiene	3.81	Cray Valley (Total)
10% Cobalt Hydro-Cure IV catalyst (drier)	0.53	Borchers (Milliken)
12% Zirconium Hydro-Cem catalyst (drier)	0.76	Borchers (Milliken)
Total	500.0	

*VOC exempt solvent can be used in place of the Mineral Spirits.

Mix water, dispersant, and TiO₂ until dispersed. Mix Mineral Spirits, Ricon, and SR350 until homogeneous, then add and mix Trilene 65D. Combine TiO₂ and resin mixtures. Add metal driers last. The starting point formulation is considered low VOC (volatile organic compounds). Apply 20 mils wet by roll, or T-bar. Maintain a pH in the 7 – 8 range using a weak acid to ensure cure response.

Peroxide (e.g. Peroxan PIN, Pergan) can be added to further accelerate cure, making it a 2K system.

Developmental formulation characteristics

Property	Method	Result*
VOC, lb/gal (g/l)	ASTM D3960	0.32 (38)
Solids, wt. %	ASTM D3960	48
Specific gravity	ASTM D1475	1.02
Viscosity @ 25°C, Brookfield, cP	ASTM D2196	4,800
Dry-to-touch, hr	ASTM D1640	8-16
Dry-to-handle, hr	ASTM D1640	16-24
Impact Strength, in-lb	ASTM D2794	>90
Crosshatch Adhesion, CRS	ASTM D3359	5B
Hardness, Pencil (7 day)	ASTM D3363	3B

*No peroxide added

Storage and Handling Temperatures

Trilene 65D is a moderately viscous EPDM elastomer dispersed in water that can be readily handled at room temperature. For storage purposes, a temperature range of 5°C (40°F) to 90°C (195°F) is suggested, during which a minimum shelf life of six months is expected. Product should be protected from freezing.

Health and Safety

Trilene elastomers exhibit an extremely low level of dermal, oral and inhalation toxicity, as well as low eye irritation. For more detailed information, request a SDS for this product.

Trilene 65D complies with FDA 21 CFR §175.105 for adhesive applications intended for use in repeated indirect contact with food.

Package Information

Product is shipped in non-returnable 55-gallon open-head steel drums.

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