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## Trilene<sup>®</sup> 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 <sub>n</sub>	GPC	11,300
M <sub>w</sub>	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



<b>Starting Point Formulation</b>	<b>Weight (grams)</b>	<b>Supplier</b>
Trilene® 65D EPDM latex	350.23	Lion Elastomers
Ti-Pure R-706 titanium dioxide	44.77	Chemours
Deionized (DI) H <sub>2</sub> 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)
<b>Total</b>	<b>500.0</b>	

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

Mix water, dispersant, and TiO<sub>2</sub> until dispersed. Mix Mineral Spirits, Ricon, and SR350 until homogeneous, then add and mix Trilene 65D. Combine TiO<sub>2</sub> 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

<b>Property</b>	<b>Method</b>	<b>Result*</b>
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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