DuPont™ TYZOR® Organic Titanates
Product Information - TYZOR® TE

Description

DuPont™ TYZOR® TE, Triethanolamine Titanate, is diisopropyl di-triethanolamino titanate, CAS: 36673-16-2, a reactive organic titanium chelate with triethanolamine as chelating agent, containing 20 % of free isopropanol. TYZOR® TE is a yellowish organic flammable liquid. Main use of TYZOR® TE is as an esterification catalyst or for cross-linking in aqueous and non-aqueous systems. TYZOR® TE is soluble in or miscible with many organic solvents or products. It is miscible with water.

Typical Properties of TYZOR® TE *

Property	Value	Unit
Molecular weight	462 (Active)	g/mol
TiO_2 content	ca. 14.0	%
Density (20 °C)	ca. 1.07	g/cm^3
Viscosity (20 °C)	ca. 350	mPa*s
Refractive index (20 °C)	ca. 1.487	
Pourpoint	ca. - 47	°C
Flash point	ca. 20	°C

*This table gives typical properties. DuPont does not make any express or implied warranty that these products will continue to have these typical properties.

Reactions

TYZOR® TE reacts with water under hydrolysis splitting off isopropanol and forming a reactive hydroxy titanium chelate. The chelate can be stable in water for some months. This chelate can form bonds with organic OH or COOH groups of for example polymers, carbohydrates (e.g. cellulose, starch, guar gum). Hereby in aqueous systems strong gels are formed by crosslinking. TYZOR® TE is decomposed by thermal treatment at > 350°C to TiO_2 forming TiO_2 coatings.

Applications

TYZOR® TE is used an additive in formulations and as a catalyst for direct esterification of carboxylic acids with aliphatic alcohols and has the distinct advantage that the catalyst will not form solid polymeric TiO_2 in the final product. Other Examples of uses are:

Direct Esterification
Moderate rates, environmentally friendly, recyclable products

Oil fracturing
crosslinking of guar-gum dispersions for high viscous aqueous gels in oil drilling application

Thixotropic Paints
crosslinking of carbohydrate coated latex particles for high viscous thixotropic paints

Water borne Paints
crosslinking of water borne paints e.g. acrylic paints

Advantages

YZOR® TE is mainly used as additive. and as a low toxicity, recyclable catalysts for making esters and polyesters and other polymerics. TYZOR® TE is added to the polymer or binder as the last ingredient in concentrations of ca. 0.5 - 5 %. The time for gel formation depends on the type of carbohydrate polymers: it occurs within < 1 min. through 1 hour. When used as a catalyst, it is used at 0.5% or less.

Contact Information:

Web Site http://www.dupont.com/tyzor
Email: tyzor@usa.dupont.com
Phone: 800-255-4596 or 302-992-2894

The miracles of science™