TYZOR® TOT
Organic Titanate

DESCRIPTION

Tyzor® TOT is a reactive liquid organic alkoxy titanate with approximately 100 percent active content. It is an effective Lewis acid catalyst in processes such as esterification, transesterification, condensation and addition. Benefits include elimination of by-products, increased yield, easy work-up, low catalyst concentration and low toxicity.

Although it is a highly reactive orthoester, Tyzor® TOT is less sensitive to moisture than other very reactive Tyzor® products such as Tyzor® TPT and Tyzor® TnBT.

APPLICATIONS

Reaction Catalyst

Tyzor® TOT is used as a Lewis acid catalyst for esterification, transesterification, condensation and addition reactions. Typical reaction products include (meth)acrylic esters, polyester, plasticizers, various esters and polyurethanes.

Coatings

Glass, metals, fillers and pigments can be treated with Tyzor® TOT to increase surface hardness, promote adhesion, improve resistance to heat, chemicals, corrosion and scratches, add iridescence or coloring effects or enhance light reflection.

Paints

Tyzor® TOT is useful as a binder and also can be used as an adhesion promoter or crosslinker for –OH functional polymers and other binders in paints.

TiO_2 Pigment and Films

Micro- or nano-scale TiO_2 pigments can be formed from Tyzor® TOT, which also can also be used to create polymeric TiO_2 films on surfaces via pyrolytic or hydrolytic (e.g. sol-gel) processes. Total or partial hydrolysis of Tyzor® TOT in sol-gel applications, typically in combination with other metal alkoxides, produces metal oxide systems for use as binders or coatings.

HOW TO USE

Tyzor® TOT is usually formulated with the other ingredients in catalysis, crosslinking or paint applications, and it is often added last to prevent undesired pre-reactions with water or other components. It also may be applied as a primer from dilute solution.

TYPICAL PROPERTIES

PROPERTY	TYPICAL VALUE
TiO_2, wt. %, approx.	14.4
Active content, %, approx.	100
Form	Liquid
Color	Colorless to pale yellow
Molecular weight, g/mol	564
Density @ at 20 °C (68 °F), g/ml (lbs/gal), approx.	0.92 (8.26)
Viscosity @ 20°C (°F), mPa, approx.	140
Pour point, °C (°F), approx.	-49 (-56.2)
Boiling point @ 10mm Hg, °C (°F), approx.	249 (480)
Flash point, °C (°F), approx.	60 (140)
Solubility	Miscible in most organic solvents. Decomposes quickly in water.

SAFETY AND HANDLING	Please refer to the current Material Safety Data Sheet for safety, handling and toxicity information.
TYPICAL SHELF LIFE	2 years

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