



Tyzor[®] NPT

Organic Titanate

DESCRIPTION

Tyzor[®] NPT, tetra-n-propyl titanate, is a highly reactive organic alkoxy titanate with 100 % active content. Tyzor[®] NPT is a clear colorless to yellowish liquid which is very sensitive to moisture.

FUNCTIONALITY

Tyzor[®] NPT acts as a Lewis Acid catalyst in processes such as esterification, transesterification, condensation, addition, etc.

Tyzor[®] NPT can effect adhesion promotion and crosslinking of polymers, or form polymeric titanium dioxide layers used as a binders or coatings.

APPLICATIONS

Reaction Catalyst

Tyzor[®] NPT is used in Ziegler-Natta catalysts for olefin polymerization. It may also be used as a catalyst for esterification, transesterification, condensation, and addition reactions. Typical reaction products include polyolefins, (meth)acrylic esters, polyester, plasticizer, various esters, polyurethanes, etc. The benefits of using Tyzor[®] NPT include elimination of by-products, increased yield, easy work-up, low catalyst concentration, and low toxicity.

Coatings

Glass, metals, fillers, pigments, and plastics can be treated with Tyzor[®] NPT to give increased surface hardness, adhesion promotion, coloring effects, heat and light reflection, iridescence, and corrosion resistance, and scratch resistance.

Paint Additive

Tyzor[®] NPT can be used as an additive in paints to crosslink –OH and –COOH functional polymers or binders, promote adhesion, or act as a binder itself.

TiO₂ Pigment and Films

Micro- or nano-scale TiO₂ pigments can be formed from Tyzor[®] NPT. It can also be used to create a polymeric TiO₂ film on surfaces via pyrolytic or hydrolytic (e.g. sol-gel) processes.

HOW TO USE

Tyzor[®] NPT is usually formulated with the other ingredients in catalysis, crosslinking, or paint applications. The titanate is often added as the last ingredient to prevent undesired pre-reactions with water or other components. For adhesion promotion or surface modification applications, Tyzor[®] NPT may also be applied as a primer from dilute solution.

In coating applications, thin, polymeric TiO₂ layers may be formed by thermal or hydrolytic processes.

In sol-gel applications, total or partial hydrolysis of Tyzor[®] NPT, typically in combination with other metal alkoxides, affords metal oxide systems for use as a binder or coating.

TYPICAL PROPERTIES**PROPERTY****TYPICAL VALUE**

TiO ₂ Content	ca. 28.1 %
Active Content	ca. 100 %
Color	Colorless to Yellow
Molecular Weight	284 g/mol
Density (20°C)	ca. 1.05 g/ml
Viscosity (20°C)	ca. 190 mPa*s
Pour Point	ca. -50 °C
Boiling Point (3mm Hg)	ca. 170 °C
Refractive Index	ca. 1.5
Flash Point**	ca. 40 °C
Solubility in Solvents	Miscible in most organic solvents
Solubility in Water	Decomposes quickly

GLOBAL REGISTRATION INFORMATION

Please refer to "Tyzor Global Registration Information" Bulletin

SAFETY and HANDLING

For specific safety, handling and toxicity information, please refer to the current Material Safety Data Sheet.

TYPICAL SHELF LIFE

2 years

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