

For Protection and Improved Properties of Metal

Dorf Ketal is the industry pioneer and a global leader in producing and supplying organic titanates and zirconates. For more than 50 years, Dorf Ketal has been delivering innovative, high-quality Tyzor® compounds to meet the evolving needs of a wide range of industrial markets. Dorf Ketal offers more than 40 grades of Tyzor®, including several specialty compounds.

Ideal for Metal Treatments

Dorf Ketal Tyzor® organic titanates and zirconates are excellent for the treatment and protection of various metal surfaces. Metals that benefit from treatment with Tyzor® include iron, steel, copper, aluminum, zinc, nickel, magnesium, and alloys.

The unique properties of the Tyzor® products help to enhance the performance of metals in a broad range of metal treatment applications, including:

- Corrosion coatings
- Wire coatings
- Protective coating for improved surface hardness and chemical resistance
- Increased adhesion of printing inks on metal foils

Tyzor® titanates and zirconates can be used in metal treatment systems to help improve:

- Corrosion protection
- Adhesion promotion
- Chemical, thermal, and water resistance
- Surface hardness
- Mechanical properties
- Cure rate

Broad Product Selection

A broad range of Dorf Ketal Tyzor® organic titanates and zirconates is available for solvent, solvent-free and water-based applications. The Tyzor® product line includes reactive alkoxides and stable chelates of titanium or zirconium.

Selection of the correct Tyzor® product depends on the system type, process and end-use requirements. Selection of the proper grade of Tyzor® allows variation in the reactivity, depending on the coating system, to optimize performance.

Unique Functionality

Tyzor® organic titanates and zirconates perform a number of functions when used in the treatment of metals, including: binder, adhesion promoter, catalyst, and surface modifier.

Binder

Tyzor® titanates and zirconates act as binders in protective coatings by forming a continuous metal oxide layer. Titanates or zirconates can be used in combination with other organo-metal compounds, such as silicon, aluminum, etc. in a sol-gel process to form a thin, flexible, conductive, homogeneous film. They can also be used to bind metal pigments such as zinc or aluminum that act as sacrificial agents for corrosion protection.

Benefits:

- Corrosion protection
- Improved resistance to water, chemicals, heat, and scratches
- Increased surface hardness
- Formation of stable metal oxide layers

Surface Modifier

Tyzor® organic titanates and zirconates can be used as surface modifiers. Through controlled hydrolysis (sol-gel process) or pyrolysis, they form a stable metal oxide layer for use as a binder or coating on various substrates for property changes or for the preparation of nano-sized microstructures.

Benefits:

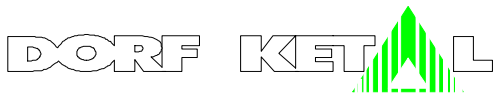
- Formation of stable TiO₂ or ZrO₂ layers
- Corrosion protection
- Scratch resistance
- Thermal stability

Adhesion Promoter

Tyzor® organic titanates and zirconates act as adhesion promoters between a metal substrate and a coating by improving the bond strength. They can be applied as a primer in a pre-treatment step, or as an additive to the coating formulation.

Benefits:

- Improved adhesion of coating to the metal
- Increased resistance to water and chemicals
- Enhanced mechanical properties



Dorf Ketal Tyzor®

ORGANIC TITANATES AND ZIRCONATES

Catalyst

Tyzor® titanates are used as catalysts for the cross-linking of metal coatings.

Benefits:

- Accelerated cure rate
- Enhanced coating properties

Diverse Applications

Dorf Ketal Tyzor® organic titanates and zirconates can be used in a wide variety of metal treatment applications to improve protection and augment properties to a level exceeding that of untreated metals. Some typical applications are described here.

Corrosion Protection

Tyzor® titanates, zirconates, or combinations with other organo-metal binders can be used to coat small metal parts, such as screws, springs, clamps, etc., or on coil coatings or sheet metal. They can also be used to bind metal pigments such as zinc or aluminum that act as sacrificial agents. This provides improved corrosion protection of the metals.

Wire Coatings

Organic titanates are added to wire coating formulations to give improved film properties. The titanates are also used in wire coatings to improve insulation properties.

Protective and Decorative Coatings

Thin, continuous layers of titanium or zirconium dioxide layers can be applied to various metal substrates by thermal/pyrolytic or hydrolytic processes to give improved surface hardness and chemical resistance.

Printing Inks Tyzor® organic titanates and zirconates can be used as additives in printing inks to improve adhesion to metal foils such as those used in food packaging.

Put Tyzor® to Work for You

The broad range of Tyzor® organic titanates and zirconates allows you to select the optimum grade to meet your specific needs, enabling you to produce superior quality products for a wide variety of applications and market segments.

And, with warehouses in every region and an integrated global network of highly trained sales and technical service professionals available to assist you, it is easy and convenient to put Tyzor® to work in your application anywhere in the world.

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