For enhanced Performance of Sealants and Adhesives

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 Sealants and Adhesives

Dorf Ketal Tyzor® organic titanates and zirconates are important multifunctional reagents used in the formulation of sealants and adhesives. They can be used as cross-linking agents, adhesion promoters, water scavengers, and catalysts.

The unique properties and reactivity of Tyzor® products help to enhance the performance of sealants and adhesives, including:

- Silicone sealants
- Silanol end-capped polymers
- Various adhesives

Broad Product Selection

A broad range of Tyzor® organic titanates and zirconates are 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 application. 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 multitude of functions when used in sealant and adhesive applications, including: cross-linking agent, adhesion promoter, water scavenger, and catalyst.

Cross-Linking Agent

Dorf Ketal Tyzor® organic titanates and zirconates can be used to cross-link polymers through reaction with the functional groups (e.g., -OH, -COOH) to form a cross-linked elastomer. They can also be used to enhance the condensation reaction between silicone resin and silane or the direct condensation of end-capped polymers.

Benefits:

- Customized reactivity
- Improved bond strength
- Accelerated curing

Adhesion Promoter

Tyzor® organic titanates and zirconates act as adhesion promoters between the sealant or adhesive and various, unreactive substrates (e.g., plastic, metal, glass, wood, etc.). They can be applied as a primer in a pre-treatment step, or as an additive to the sealant/adhesive formulation.

Benefits:

- Improved adhesion of coating to substrate
- Increased water- and chemical-resistance

Water Scavenger

Because certain Tyzor® titanates and zirconates are water-reactive, they can be used as water scavengers. Reaction with water present in other components of the sealant mixture prevents premature cross-linking of moisture-cure sealants during storage.

Benefits:

- Increased storage stability
- Longer shelf-life

Catalyst

Tyzor® organic titanates and zirconates can act as catalysts or activators for the cross-linking of sealants and adhesives. These can be used as replacements for toxic materials such as tin.

Diverse Applications

Tyzor® organic titanates and zirconates can be used in a variety of sealant and adhesive applications to improve the performance and properties to a level above that of formulations without Tyzor®. Some typical applications are described here.

Silicone Sealants

Tyzor® organic titanates and zirconates are important additives in moisture-cure Room Temperature Vulcanizing 1-component systems (RTV-1 silicone sealants), where they are used to cross-link siloxanes and the functional alkyl or vinyl silanes. Benefits include customized reactivity, improved cure rate, and increased cross-link strength.

Silanol End-Capped Polymers

Titanate and zirconate compounds act as very efficient additives in silanol end-capped polymer RTV-1 moisture-cure systems. The addition of Tyzor® results in improved cross-linking, improved adhesion, and increased reaction rate. Typical systems include polypropylene oxides, acrylates, alkylene oxides, polyurethanes, etc.

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.