

Technical Data Sheet

MeLink™ ZCA-TEAZ

Tetrakis (triethanolaminato) zirconium (IV)

Description

ZCA-TEAZ is a triethanolamine zirconium complex with 100 % active ingredient. Compared to its counterpart of titanate, TCA-TEA, Tetrakis (triethanolaminato) titanium (IV), it has a better thermal stability and lighter color.

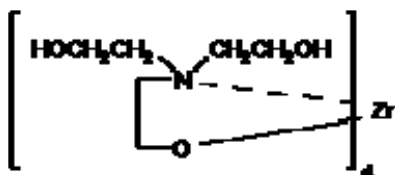
It can reacts with water by hydrolysis to form a reactive hydroxy zirconium chelate that is stable in water for extended periods. The original or hydrated chelate bonds with organic -OH or -COOH groups to form strong gels by cross-linking many polymeric materials and carbohydrates such as cellulose, starch and guar.

ZCA-TEAZ also acts as a Lewis Acid catalyst in processes such as esterification, transesterification, condensation, addition, polymerizations and similar reactions. Uses include adhesion promotion, crosslinking of various polymers, and oilfield fracturing fluids.

Synonyms

Zirconium, tetrakis[2-[bis(2-hydroxyethyl)amino-kN] ethanolato-kO]-,

CAS Registry Number	EINECS
101033-44-7	309-811-7

Molecular Formula	Molecular Structure
$C_{24}H_{56}N_4O_{12}Zr$	

Equivalents

TYZOR® TEAZ from DuPont (now Dorf Ketal Specialty Catalysts, LLC)

Typical Properties

Index	Value
Appearance	Yellow-to-brown organic liquid

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ZrO ₂ , wt. %, approx.	17.90
Active Content, wt. %, approx.	100
Specific Gravity @ at 20 °C (68 °F), approx.	1.34
Viscosity @ 20 °C (68 °F), mPa·s	50,000
Flash Point, °C (°F), approx.	> 100 (212)
Solubility	Miscible in most organic solvents and water.

Applications and Performance

ZCA-TEAZ has a similar application with its counterpart of titanate, TCA-TEA, Tetrakis (triethanolaminate) titanium (IV), but it has a better thermal stability and lighter color.

Reaction Catalyst

ZCA-TEAZ is an effective catalyst for esterification, transesterification, condensation and addition reactions that is especially well-suited to direct esterification processes due to its excellent compatibility with the water byproduct. Benefits include moderate reaction rates, high yield, easy work-up, low toxicity and low catalyst concentration.

Oilfield Fracturing Fluids

ZCA-TEAZ is an effective crosslinking agent for dispersions of guar and its derivatives used to form high-viscosity

Thixotropic Paints

ZCA-TEAZ acts as a crosslinking agent for carbohydrate-coated latex particles in highly viscous thixotropic paints.

Waterborne Paints

ZCA-TEAZ is an effective crosslinking agent for binders in waterborne paints such as acrylics.

Usage Methodology

ZCA-TEAZ is usually formulated with other ingredients in catalysis, crosslinking or paint applications. It is often added last to avoid undesired pre-reactions with water or other components. Gel formation time in oilfield fracturing depends on polymer, temperature, pH, brine strength, zirconate concentration and other factors.

Packing

This product is available in 20kg pail, 200L drums and 1000L immediate bulk container.

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Storage and Shelf Life

Should be stored in dry, cool, ventilated room; keep away from water, moisture, high temperature and fire. This product has a shelf life of at least 12 months if stored in tightly closed original container at room temperature.

If this product is kept beyond the shelf life recommend on the product label, it is not necessarily unusable, but a quality control should be performed on the properties relevant to the application.

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