

## TETRAKIS(ETHYLMETHYLAMIDO)ZIRCONIUM (TEMAZ)

CAS No. 175923-04-3

QS-PDS-067 Revision: 00

FMC Product Code No. 643-365

**Product Names** Tetrakis(ethylmethylamido)zirconium, TEMAZ

**Formula** C<sub>12</sub>H<sub>32</sub>N<sub>4</sub>Zr

**Appearance** Clear to yellow liquid

**Application** Tetrakis(ethylmethylamido)zirconium, TEMAZ, is a **DEVELOPMENTAL** product used as a precursor to make zirconium oxide films on silicon wafers for semiconductors. The high dielectric constant and relatively high thermal stability of zirconium oxide makes it attractive as a replacement for silicon dioxide.

### Product Specification

	<u>Guaranteed*</u>
Tetrakis(ethylmethylamido)zirconium, wt %	98 min

*\*This product can be made to agreed upon customer specifications*

### Physical Properties

Molecular weight	323.6
Density	1.049 g/cc
Boiling Point	107°C @ 2mmHg
Flash Point	6°C (21°F)
Volatiles, % by wt.	100%
Pyrophoricity	Non-pyrophoric
Air and water reactive liquid	

**Solubility** Infinitely soluble in hydrocarbon and ether solvents. Reacts with water and alcohols.

**Thermal Stability** Stable under recommended storage conditions. Decomposes at ~1.4% per hour at 150°C.

### Air Treatment Construction Energy Fine Chemicals Glass & Ceramics Greases & Lubricants Polymers Pool Water Treatment

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MARKETS SERVED

## TETRAKIS(ETHYLMETHYLAMIDO)ZIRCONIUM (TEMAZ)

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**Toxicity/Safety Data** Water-Reactive flammable liquid. Reacts violently with water. Store and use under inert atmosphere (nitrogen). Releases Ethylmethylamine on reaction with air or moisture. Corrosive to eyes (may cause blindness), skin, nose, throat and stomach. May be harmful by ingestion, inhalation or skin contact.

*ADDITIONAL INFORMATION ON SAFETY IS CONTAINED IN THE FMC NEW PRODUCT DATA SHEET (NPDS) FOR THIS PRODUCT.*

**Handling/Storage/Disposal** Wear suitable protective clothing, gloves and eye/face protection. In case of fire, do not use water or carbon dioxide. Wash hands and face thoroughly after handling. Handle and store under nitrogen or argon. Store in cool place. Keep away from sources of ignition, water, air, and oxidizing agents. Do not get in eyes, on skin, or on clothing. Protect storage container against leaks and physical damage.

**Shipping Containers** Approved glass bottle in a standard lab pack with 2.5 L steel drum single package or approved cylinders.

**Shipping Limitations** Shipments of TDMAZ are described as "Organometallic substance, liquid, water-reactive, flammable, (TETRAKIS(ETHYLMETHYLAMIDO)ZIRCONIUM), 4.3 (3), UN3399, PG II." Shipments require "Dangerous when wet" and "Flammable" labels.

Post, Parcel	Not acceptable
Sea	Class 4.3 (3) (IMDG)
Road, Rail (USA)	Class 4.3 (3) (DOT)
Road, Rail (EU)	Class 4.3 (3) (RID/ADR)
Air	Class 4.3 (3) (IATA)

2.5 L maximum per inner steel cylinder or glass container.  
5.0 L maximum per outer container.  
Cargo aircraft only.

For shipments within Europe, labeling for supply requirements are:

F	Highly Flammable
N	Dangerous for the Environment
R&S Phrases	See Material Safety Data Sheet

Responsible Care® initiative dictates that all shipments of lithium chemicals must be transported in a DOT-approved vehicle in a responsible manner (i.e., no flat bed trucks).

**Additional Resources** Refer to the Organometallics and Reactive Specialty Organics Safe Handling Guide available on-line at [www.fmclithium.com](http://www.fmclithium.com).