

Product Data Sheet

DEZn TCO

Product description Diethylzinc, transparent conductive oxide grade

Molecular formula	: (C ₂ H ₅) ₂ Zn
Molecular weight	: 123.5
CAS No.	: 557-20-0
EINECS/ELINCS No.	: 209-161-3
TSCA status	: listed on inventory

DEZn TCO is a Zn precursor for the deposition of a ZnO TCO (transparent conductive oxide) layer for the application in thin film solar cells and other thin film processes.

Specifications

AkzoNobel uses leading edge processes, purification and transfilling techniques that ensure the repeatable and consistent delivery of our DEZn TCO in each cylinder that we supply. We apply state of the art techniques such as ICP-OES for trace metal analysis to meet your demands. Please contact us for detailed sales specifications.

Characteristics

Appearance	: liquid
Density, 30°C	: 1.198 g/ml
Melting point	: -30°C
Viscosity, 20°C	: 0.7 mPa.s
Boiling point, 760 torr	: 118°C
Stability to air	: ignites upon exposure
Stability to water	: reacts violently, may ignite upon contact
Solubility	: soluble in aromatic and saturated aliphatic and cycloaliphatic hydrocarbons

Thermochemical properties

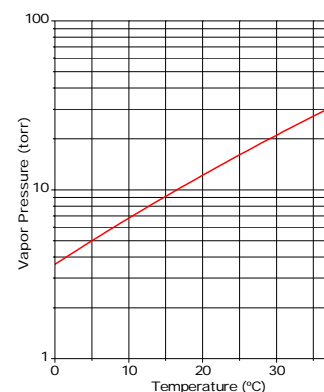
Specific heat, 57°C	: 1.502 J/g.°C (0.359 cal/g.°C)
Heat of vaporization ΔH_v , at 118°C	: 326 J/g (78 cal/g)
Heat of hydrolysis, 25°C	: 2117 J/g (506 cal/g)
Heat of formation ΔH_f° , 25°C, 1 bar	: 17 kJ/mole (4 kcal/mole)
Heat of combustion ΔH_c° , 25°C	: -3364 kJ/mole (-804 kcal/mole)

Vapor pressure

at 10°C (283.15 K)	: 6.79 torr
at 20°C (293.15 K)	: 12.2 torr

Gas constants: $\log P(\text{torr}) = B - A/T(K)$

A	: 2109
B	: 8.28



Storage

DEZn TCO is stable when stored under a dry, inert atmosphere and away from heat. CAUTION: DEZn TCO may undergo violent exothermic decomposition with flammable gas evolution if stored at temperatures above 70°C (158°F) (see section on Safety and handling).

Packaging and transport

Containers are fabricated from carbon steel and are equipped with dip tubes for top discharge. Valves are equipped with standard VCR connections.

For more information please refer to our Cylinder Offerings leaflet, available at www.akzonobel.com/hpmo. Both packaging and transport meet the international regulations.

DEZn TCO is classified as Organometallic substance, liquid, pyrophoric, water-reactive; Class 4.2; UN 3394; PG I

Safety and handling

Diethylzinc is thermally unstable; exothermic decomposition above 70°C may become self-accelerating and UNCONTROLLABLE and may result in a violent runaway reaction if heated above 120°C.

This instability, inherent to the chemical nature of diethylzinc even at ambient temperatures, may lead to the presence of traces of (metallic zinc) solids in the product at the moment of consumption. This fact may need to be taken into consideration when designing downstream installations. Please consult your AkzoNobel sales representative.

Please refer to the Material Safety Data Sheet (MSDS) for further information on the safe storage, use and handling of DEZn TCO. This information should be thoroughly reviewed prior to acceptance of this product.

The MSDS is available at www.akzonobel.com/hpmo.

All information concerning this product and/or suggestions for handling and use contained herein are offered in good faith and are believed to be reliable. AkzoNobel Functional Chemicals, however, makes no warranty as to accuracy and/or sufficiency of such information and/or suggestions, as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. Nothing contained herein shall be construed as granting or extending any license under any patent. Buyer must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes. The information contained herein supersedes all previously issued bulletins on the subject matter covered. The user may forward, distribute, and/or photocopy this document only if unaltered and complete, including all of its headers and footers, and should refrain from any unauthorized use. You may not copy this document to a website.

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