Product Data Sheet

DEZn SSG

Product description

Diethylzinc, Select Semiconductor Grade

Molecular formula	: $(C_2H_5)_2Zn$
Molecular weight	: 123.5
CAS No.	: 557-20-0
EINECS/ELINCS No.	: 209-161-3
TSCA status	: listed on inventory

DEZn SSG is a Zn precursor for the deposition of III/V compound semiconductors. Compound semiconductors are used in applications such as light emitting diode, laser diode, high performance transistor and photovoltaic cells.

Specifications

AkzoNobel uses leading edge processes, purification and transfilling techniques that ensure the repeatable and consistent delivery of our DEZn SSG 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	: colorless liquid
Density, 30°C	: 1.198 g/ml
Melting point	: -30°C
Viscosity, 21°C	: 0.7 mPa.s
Boiling point	: 117.6°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

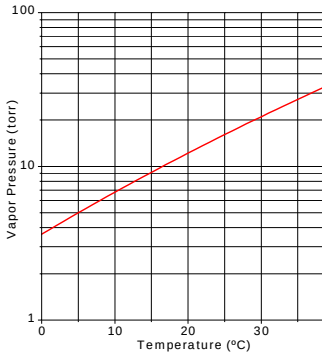
Specific heat, 57°C	: 1.502 J/g.°C (0.359 cal/g.°C)
Heat of vaporization ΔH_v, at 118°C	: 326 J/g (78 cal/g)
Heat of hydrolysis, 25°C	: 2117 J/g (506 cal/g)
Heat of formation ΔH_f^o, 25°C, 1 bar	: 17 kJ/mole (4 kcal/mole)
Heat of combustion ΔH_c^o, 25°C	: -3364 kJ/mole (-804 kcal/mole)

Vapor pressure

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

Gas constants: log P(torr)=B-A/T(K)

A	: 2109
B	: 8.28



Storage

DEZn SSG is stable when stored under a dry, inert atmosphere and away from heat. CAUTION: DEZn SSG 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 stainless steel with an electropolished internal finish and are equipped with dip tube for top discharge and diaphragm valves. The diaphragm valves are equipped with metal gasket face seal connections such as Swagelok® VCR®.

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

Safety and handling

DEZ ignites upon exposure to air and reacts violently with water. Hydrocarbon solutions of DEZ may also ignite upon exposure to air. DEZ and its solutions must be handled under a dry, inert atmosphere, e.g. nitrogen or argon.

Neat DEZ may undergo exothermic decomposition with evolution of flammable gas if stored above 70°C. The decomposition may become self-accelerating and UNCONTROLLABLE and may result in a violent runaway reaction if heated above 120°C.

Water must be scrupulously removed from process equipment prior to putting it into metal alkyls service. Failure to do so may result in an explosion. Products of complete combustion of DEZn SSG are zinc oxide, carbon oxide and water. DEZn SSG causes severe burns to the skin and eyes. It is imperative that proper personal protective equipment be worn when handling DEZn SSG.

Please refer to the Material Safety Data Sheet (MSDS) for further information on the safe storage, use and handling of DEZn SSG. This information should be thoroughly reviewed prior to acceptance of this product.
The MSDS is available at www.akzonobel.com/hpmo.

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