

# DEZn SSG

## Diethylzinc

DEZn SSG is a zinc precursor (Select Semiconductor Grade) for the deposition of compound semiconductors.

CAS number  
557-20-0

EINECS/ELINCS No.  
209-161-3

TSCA status  
listed on inventory

Molecular weight  
123.5

### Characteristics

Appearance	Colorless liquid
Boiling point	117.6 °C
Density, 30 °C	1.198 g/cm <sup>3</sup>
Melting point	-30 °C
Solubility	Soluble in aromatic and saturated aliphatic and cycloaliphatic hydrocarbons
Stability to air	Ignites upon exposure
Stability to water	Reacts violently, may ignite upon contact
Viscosity, 21 °C	0.7 mPa.s

### Vapor Pressure

at 10 °C / 283.15 K	6.79 torr
at 20 °C / 293.15 K	12.2 torr
A	2109
B	8.28
Gas constants	$\log P(\text{torr}) = B - A/T(K)$

### Thermochemical properties

Heat of vaporization $\Delta H_v$ , 118 °C	326 J/g (78 cal/g)
Heat of hydrolysis, 25 °C	2117 J/g (506 cal/g)
Specific heat, 57 °C	1.502 J/g.°C (0.359 cal/g.°C)
Heat of formation $\Delta H_f^\circ$ , 25 °C / 1 bar	17 kJ/mole (4 kcal/mole)
Heat of combustion $\Delta H_c^\circ$ , 25 °C	-3364 kJ/mole (-804 kcal/mole)

## Applications

We offer the highest purity diethylzinc precursor under the product name of DEZn SSG (Select Semiconductor Grade). DEZn SSG is a zinc precursor for the deposition of compound semiconductors. Compound semiconductors are used in applications such as light emitting diodes and high efficiency solar cells. 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.

## 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 [hpmo.nouryon.com](https://hpmo.nouryon.com). 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 <https://hpmo.nouryon.com>.

## Additional information

Nouryon 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.

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. Nouryon, 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. Nouryon does not accept any liability whatsoever arising out of the use of or reliance on this information, or out of the use or the performance of the product. Nothing contained herein shall be construed as granting or extending any license under any patent. Customer 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 information on the subject matter covered. The customer 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. Don't copy this document to a website.

Swagelok and VCR are registered trademarks of Swagelok Company.

## Contact Us

HPMO Americas  
metalorganicsNA@nouryon.com

HPMO Europe, Middle East, India and Africa  
metalorganicsEU@nouryon.com

HPMO Asia Pacific  
metalorganicsAP@nouryon.com

The logo for Nouryon, featuring a stylized blue 'N' followed by the word 'ouryon' in a blue sans-serif font.