

Cp₂Mg SSG

Bis(cyclopentadienyl)magnesium

Cp₂Mg SSG is a magnesium precursor (Select Semiconductor Grade) for the deposition of compound semiconductors and commonly applied as dopant in GaN-based material systems.

CAS number
1284-72-6

EINECS/ELINCS No.
not registered

TSCA status
listed on inventory

Molecular weight
154.4

Molecular formula
Cp₂-Mg

Characteristics

Appearance	Yellow crystalline solid
Boiling point, 760 torr	≥ 300 (decomposes) °C
Density, 20 °C	1.1 g/cm ³
Melting point	176 °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

Vapor Pressure

at 10 °C / 283.15 K	0.010 torr
at 20 °C / 293.15 K	0.027 torr
A	4198
B	25.14
Gas constants	$\log P(\text{torr}) = B-A/T(K) - 2.18\ln T(K)$

Applications

Cp2Mg SSG is used as a high purity magnesium dopant for compound semiconductors. Applications include power devices (GaN on Si), light emitting diodes (LED) and concentrated photovoltaic cells (CPV). 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

Cp2Mg SSG is stable when stored under a dry, inert atmosphere and away from heat. CAUTION: Cp2Mg SSG may undergo exothermic decomposition with gas evolution at elevated temperatures (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. Both packaging and transport meet the international regulations. Cp2Mg SSG is classified as Organometallic substance, solid, pyrophoric, water-reactive; Class 4. 2; UN 3393; PG I.

Safety and handling

Cp2Mg SSG ignites upon exposure to air and reacts violently with water. 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. If heated above elevated temperature, Cp2Mg SSG will undergo exothermic decomposition with evolution of flammable gas. Products of complete combustion of Cp2Mg SSG are magnesium oxide, carbon dioxide and water. Cp2Mg SSG causes severe burns to the skin and eyes. It is imperative that proper personal protective equipment be worn when handling Cp2Mg SSG. Please refer to the Material Safety Data Sheet (MSDS) for further information on the safe storage, use and handling of Cp2Mg 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 Cp2Mg 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.

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