

TEGa SSG

Triethylgallium

TEGa SSG is a gallium precursor (Select Semiconductor Grade) for the deposition of compound semiconductors mainly used in processes with lower deposition temperatures.

CAS number
1115-99-7

EINECS/ELINCS No.
214-232-7

TSCA status
listed on inventory

Molecular weight
156.9

Characteristics

Appearance	Clear, colorless liquid
Boiling point	143 °C
Density, 30 °C	1.059 g/cm ³
Melting point	-82 °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	2.80 torr
at 20 °C / 293.15 K	5.10 torr
A	2162
B	8.083
Gas constants	$\log P(\text{torr}) = B - A/T(K)$

Applications

TEGa SSG is used as a gallium precursor for the deposition of compound semiconductors which are used in applications such as laser diodes, sensors (VCSEL), light emitting diodes (LED) and concentrated photovoltaic cells (CPV). TEGa is mainly used in processes with lower deposition temperatures. The triethylgallium is supplied in cylinders made from stainless steel with an electropolished internal finish. The cylinders are equipped with dip tube and diaphragm valves. The diaphragm valves are equipped with metal gasket VCR-connections.

Storage

TEGa SSG is stable when stored under a dry, inert atmosphere and away from heat. CAUTION: TEGa 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 brochure, available at hpmo.nouryon.com, or contact your Nouryon sales representative. Both packaging and transport meet the international regulations. TEGa SSG is classified as Organometallic substance, liquid, pyrophoric, water-reactive; Class 4. 2; UN 3394; PG I.

Safety and handling

TEGa 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. At elevated temperatures, TEGa SSG will undergo exothermic decomposition with evolution of extremely flammable gasses. Products of complete combustion of TEGa SSG are gallium oxide, carbon dioxide and water. TEGa SSG causes severe burns to the skin and eyes. It is imperative that proper personal protective equipment be worn when handling TEGa SSG. Please refer to the Material Safety Data Sheet (MSDS) for further information on the safe storage, use and handling of TEGa 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 TEGa 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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