Product Data Sheet

TMAl LO

Product description

Trimethylaluminum, low oxygen

Molecular formula	: $(CH_3)_3Al$
Molecular weight	: 72.1
CAS No.	: 75-24-1
EINECS/ELINCS No.	: 200-853-0
TSCA status	: listed on inventory

TMAl LO is used as a high quality Al precursor for the deposition of compound semiconductors which are used in applications such as light emitting diodes, laser diodes, high performance transistors and highly efficient solar cells. TMAl LO is especially synthesized to meet ultra low oxygen requirements.

Specifications

AkzoNobel uses leading edge processes, purification and transfilling techniques that ensure the repeatable and consistent delivery of our TMAl LO 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	: clear, colorless liquid
Density, 30°C	: 0.743 g/ml
Melting point	: 15°C
Viscosity, 30°C	: 0.9 mPa.s
Boiling point, 760 torr	: 127°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

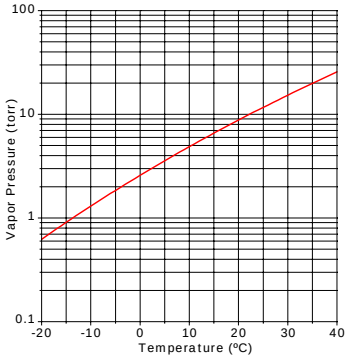
Specific heat, 57°C	: 2.213 J/g.°C (0.529 cal/g.°C)
Heat of vaporization ΔH_v at 127°C, 1 bar	: 247 J/g (59 cal/g)
Heat of formation ΔH_f^o, 25°C, 1 bar	: -151 kJ/mole (-36 kcal/mole)
Heat of combustion ΔH_c^o, 25°C	: -3180 kJ/mole (-760 kcal/mole)

Vapor pressure

at 10°C (283.15 K)	: 4.87 torr
at 15°C (288.15 K)	: 6.57 torr

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

A	: 2134
B	: 8.224



Storage

TMAl LO is stable when stored under a dry, inert atmosphere and away from heat. CAUTION: TMAl LO 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 www.akzonobel.com/hpmo.
Both packaging and transport meet the international regulations.

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

Safety and handling

TMAl LO 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 120°C (248°F), TMAl LO will undergo exothermic decomposition with evolution of flammable gas. Products of complete combustion of TMAL are aluminum oxide, carbon dioxide and water. TMAl LO causes severe burns to the skin and eyes. It is imperative that proper personal protective equipment be worn when handling TMAl LO.

Please refer to the Material Safety Data Sheet (MSDS) for further information on the safe storage, use and handling of TMAl LO. 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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