

## Product Data Sheet

# TMAI IC

**Product description** Trimethylaluminum, IC grade

Molecular formula	: (CH <sub>3</sub> ) <sub>3</sub> Al
Molecular weight	: 72.1
CAS No.	: 75-24-1
EINECS/ELINCS No.	: 200-853-0
TSCA status	: listed on inventory

TMAI IC 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. TMAI IC is also used in deposition processes in the Silicon-semiconductor industry.

**Specifications** AkzoNobel uses leading edge processes, purification and transfilling techniques that ensure the repeatable and consistent delivery of our TMAI IC in each cylinder that we supply. We apply state of the art techniques such as ICP-MS and OES for trace metal analysis to meet your demands. Please contact us for detailed sales specifications.

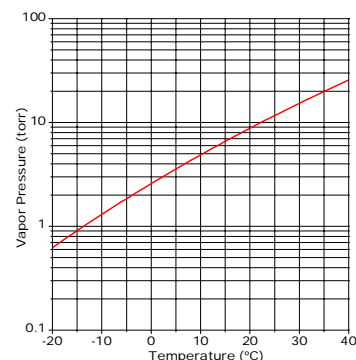
<b>Characteristics</b>	Appearance	: clear, colorless liquid
	Density, 30°C	: 0.743 g/ml
	Melting point	: 15°C
	Viscosity, 30°C	: 0.9 mPa.s
	Boiling point, 760 torr	: 127°C
	Stability to air	: ignites upon exposure
	Stability to water	: reacts violently, may ignite upon contact
	Solubility	: soluble in aromatic and saturated aliphatic and cycloaliphatic hydrocarbons

<b>Thermochemical properties</b>	Specific heat, 57°C	: 2.213 J/g.°C (0.529 cal/g.°C)
	Heat of vaporization DH <sub>v</sub> , at 127°C, 1 bar	: 247 J/g (59 cal/g)
	Heat of formation DH <sub>f</sub> <sup>o</sup> , 25°C, 1 bar	: -151 kJ/mole (-36 kcal/mole)
	Heat of combustion DH <sub>c</sub> <sup>o</sup> , 25°C	: -3180 kJ/mole (-760 kcal/mole)

<b>Vapor pressure</b>	at 10°C (283.15 K)	: 4.87 torr
	at 15°C (288.15 K)	: 6.57 torr

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

A	: 2134
B	: 8.224



## Storage

TMAI IC is stable when stored under a dry, inert atmosphere and away from heat. CAUTION: TMAI IC 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 diaphragm valves. The diaphragm valves are equipped with metal gasket face seal connections such as Swagelok<sup>®</sup> VCR<sup>®</sup>.

For more information please refer to our Cylinder Offerings leaflet, available at [www.akzonobel.com/hpmo](http://www.akzonobel.com/hpmo). Both packaging and transport meet the international regulations.

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

## Safety and handling

TMAI IC 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), TMAI IC will undergo exothermic decomposition with evolution of flammable gas. Products of complete combustion of TMAI are aluminum oxide, carbon dioxide and water. TMAI causes severe burns to the skin and eyes. It is imperative that proper personal protective equipment be worn when handling TMAI.

Please refer to the Material Safety Data Sheet (MSDS) for further information on the safe storage, use and handling of TMAI IC. This information should be thoroughly reviewed prior to acceptance of this product.

The MSDS is available at [www.akzonobel.com/hpmo](http://www.akzonobel.com/hpmo).

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