

Product Data Sheet

TEAL

Product description	Triethylaluminum	
	Molecular formula	: (C ₂ H ₅) ₃ Al
	Molecular weight	: 114.2
	CAS No.	: 97-93-8
	EINECS/ELINCS No.	: 202-619-3
	TSCA status	: listed on inventory
Composition	<i>Component</i>	<i>Specification (wt%)</i>
	Triethylaluminum ^a	: 94.0 min.
	Tri-n-butylaluminum ^a	: 6.0 max.
	Triisobutylaluminum ^a	: 0.1 max.
	Hydride, as AlH ₃ ^a	: 0.10 max.
		<i>(wt%)</i>
	Aluminum ^b	: 22.5 min.
Characteristics	Appearance	: clear, colorless liquid
	Density, 25°C	: 0.832 g/ml
	Melting point	: -52°C
	Boiling point, 760 mm Hg	: 186°C
	Viscosity, 25°C	: 2.5 mPa.s
	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	: 2.226 J/g.°C (0.532 cal/g.°C)
	Heat of vaporization ΔH _v at NBP ^c , 1 bar	: 536 J/g (128 cal/g)
	Heat of hydrolysis, 25°C	: 4619 J/g (1104 cal/g)
	Heat of formation ΔH _f ^o , 25°C, 1 bar	: -218 kJ/mole (-52 kcal/mole)
	Heat of combustion ΔH _c ^o , 25°C	: -5104 kJ/mole (-1220 kcal/mole)
Availability	TEAL is available as the neat pyrophoric liquid and as pyrophoric and nonpyrophoric solutions in a variety of hydrocarbon solvents. Consult your AkzoNobel representative for further information.	

^a Calculated from gas chromatographic analysis of hydrocarbons and hydrogen obtained by hydrolysis.

^b Determined by titration of aqueous hydrolyzate.

^c NBP = normal boiling point

Storage

TEAL and its solutions are stable when stored under a dry, inert atmosphere and away from heat. TEAL decomposes slowly above 120°C. Thermal decomposition products include hydrogen, ethylene and elemental aluminum.

Packaging and transport

TEAL and its solutions are packed in cylinders and portable tanks.

In North America, TEAL is also available in tank trailers and rail cars. Containers are fabricated from carbon steel and are equipped with dip tubes for top discharge and all connections are located in the vapor space.

Both packaging and transport meet the international regulations.

Safety and handling

TEAL ignites upon exposure to air and reacts violently with water. Hydrocarbon solutions of TEAL may also ignite upon exposure to air. TEAL and its solutions must be handled under a dry, inert atmosphere, e.g. nitrogen or argon. 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 TEAL and its solutions are aluminum oxide, carbon dioxide and water.

TEAL causes severe burns to the skin and eyes. It is imperative that proper personal protective equipment be worn when handling TEAL.

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

The MSDS is available at www.akzonobel.com/polymer.

Applications

TEAL is used as a cocatalyst in the Ziegler-Natta polymerization of olefins.

TEAL is also used in the Ziegler growth reaction for the production of α -olefins and α -alcohols and as an alkylating agent in the production of other organometallic compounds and organic intermediates.

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. AkzoNobel, 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. Nothing contained herein shall be construed as granting or extending any license under any patent. Buyer 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 bulletins on the subject matter covered. The user 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. You may not copy this document to a website.

AkzoNobel Polymer Chemistry
Amersfoort, The Netherlands
T +31 33 467 6767
F +31 33 467 6151
E polymerchemistry.nl@akzonobel.com

AkzoNobel Polymer Chemistry
Chicago, U.S.A.
T +1 312 544 7000
T +1 800 828 7929 (Toll free US only)
F +1 312 544 7188
E polymerchemistry.na@akzonobel.com

Akzo Nobel (Asia) Co., Ltd.
Shanghai, PR China
T +86 21 2220 5000
F +86 21 2220 5558
E polymerchemistry.ap@akzonobel.com

www.akzonobel.com/polymer