

EADC

Ethylaluminum dichloride

Raw material soluble in aromatic and saturated aliphatic and cycloaliphatic hydrocarbons. Solid material when below 32°C.

CAS number
563-43-9

EINECS/ELINCS No.
209-248-6

TSCA status
listed on inventory

Molecular weight
126.95

Composition

Aluminum	^b ≥ 20.5 wt%
Cl/Al (molar)	1.99-2.03 wt%
Ethane	^a ≥ 99.0 molar%
Hydrogen	^a ≤ 0.1 molar%
Isobutane	^a ≤ 0.5 molar%
n-Butane	^a ≤ 0.5 molar%

Characteristics

Appearance	Colorless to pale yellow, liquid above 32°C
Boiling point, 50 mm Hg	115 °C
Density, 50 °C	1.200 g/cm ³
Melting point	32 °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
Viscosity, 50 °C	1.7 mPa.s

Thermochemical properties

Latent heat of fusion	100.4 J/g monomer (24 cal/g)
Heat of vaporization ΔH _v , NBP / 1 bar	^c 163 J/g (39 cal/g)
Heat of hydrolysis, 25 °C	2795 J/g (668 cal/g)
Specific heat, 57 °C	1.230 J/g.°C (0.294 cal/g.°C)
Heat of formation ΔH _f ^o , 25 °C / 1 bar	-540 kJ/mole (-129 kcal/mole)
Heat of combustion ΔH _c ^o , 25 °C	-2071 kJ/mole (-495 kcal/mole)

Notes:

^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.

Applications

EADC is used as a raw material for production of Ziegler-Natta catalysts and in dimerization of olefins.

Storage

EADC and its solutions are stable when stored under a dry, inert atmosphere and away from heat. EADC slowly decomposes at temperatures above ~ 165°C.

Packaging and transport

EADC and its solutions are available worldwide in cylinders and portable tanks. In North America only, EADC 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. EADC may need to be melted before attempting to remove product from containers. Both packaging and transport meet the international regulations.

Safety and handling

EADC ignites upon exposure to air and reacts violently with water. Hydrocarbon solutions of EADC may also ignite upon exposure to air. EADC 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 EADC and its solutions are aluminum oxide, carbon dioxide, hydrogen chloride and water. EADC causes severe burns to the skin and eyes. It is imperative that proper personal protective equipment be worn when handling EADC. Please refer to the Safety Data Sheet (SDS) for further information on the safe storage, use and handling of EADC. This information should be thoroughly reviewed prior to acceptance of this product. The SDS is available at <https://polymerchemistry.nouryon.com>.

Additional information

Availability: EADC is available as the neat pyrophoric liquid (freezes at 32°C) and as pyrophoric and nonpyrophoric solutions in a variety of hydrocarbon solvents. Consult your Nouryon representative for further information.

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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The Nouryon logo consists of a stylized orange 'N' followed by the word 'ouryon' in a lowercase, sans-serif font. The 'N' is significantly larger and more prominent than the rest of the text.