MMAO-7 7 wt% AL in Isopar E

Modified Methylaluminoxane, type 7 [a]

Isopar-E solutions of MMAO-7 are used as co-catalysts in the polymerization of olefins and other monomers via single-site catalysts.

CAS number
206451-54-9

EINECS/ELINCS No.
931-025-3

TSCA status
listed on inventory

Composition

Active Al	[b] [e] 10-20 wt%
Aluminum	[b] [d] 6.0-8.0 wt%
Methane	[b] [c] ≥ 98.0 molar%

Characteristics

Appearance	Clear to slightly hazy, colorless liquid
Density, 30 °C	0.766 g/ml g/cm^3
Melting point	<-82 °C
Solubility	Soluble in aromatic and saturated aliphatic hydrocarbons
Stability to air	May ignite upon exposure
Stability to water	Reacts violently
Viscosity, 30 °C	1.9 mPa.s

Notes:
[a] MMAO-7 composition is covered under US Patent 5,777,143. For more information on aluminoxanes, see the Mouryon technical bulletin entitled Properties of Aluminoxanes from Nouryon . Isopar E is a mixture of mainly C8 aliphatic hydrocarbons from ExxonMobil Corporation. [b] Data for Isopar E solution containing ~7% aluminum; this corresponds to an MMAO-7 concentration of about 18% [c] Calculated from gas chromatographic analysis of C1-C4 hydrocarbons and hydrogen obtained by hydrolysis. [d] Determined by titration of aqueous hydrolyzate. [e] Determined by 31P NMR Spectroscopy method.

Applications

Isopar E solutions of MMAO-7 are used as cocatalysts in polymerization of olefins and other monomers via single-site catalysts.

Storage

MMAO-7 in Isopar E is stable when stored under a dry, inert atmosphere and away from heat. MMAO-7 in Isopar E is significantly more stable to long-term storage than solutions of conventional polymethylaluminoxane, but prolonged storage at 25°C or higher may cause solutions to become viscous.

Packaging and transport

Isopar E solutions of MMAO-7 are available worldwide in cylinders and portable tanks. In North America only, MMAO-7 in Isopar E 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

Isopar E solutions of MMAO-7 may ignite upon exposure to air and react violently with water. Isopar E solutions of MMAO-7 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 Isopar E solutions of MMAO-7 are aluminum oxide, carbon dioxide and water. Isopar E solutions of MMAO-7 cause severe burns to the skin and eyes. It is imperative that proper personal protective equipment be worn when handling Isopar E solutions of MMAO-7. Please refer to the Safety Data Sheet (SDS) for further information on the safe storage, use and handling of Isopar E solution on MMAO-7. This information should be thoroughly reviewed prior to acceptance of this product.The SDS is available at https://polymerchemistry.nouryon.com

Additional information

Availability: MMAO-7 in Isopar E is a commercial product (typically containing ~7% aluminum). The product is not available neat. Consult your Nouryon representative for further information.

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