ISOPRENYL

Isoprenylaluminum

Isoprenyl is a co-catalyst product soluble in aromatic and saturated aliphatic and cycloaliphatic hydrocarbons.

CAS number
70024-64-5

EINECS/ELINCS No.
274-261-6

TSCA status
listed on inventory

Molecular weight
~ 400 atomic mass units

Characteristics

Appearance	Clear, colorless liquid
Density, 30 °C	0.886 g/cm^3
Melting point	-46 °C
Solubility	Soluble in aromatic and saturated aliphatic and cycloaliphatic hydrocarbons
Stability to air	May ignite upon exposure
Stability to water	Reacts violently, may ignite upon contact
Viscosity, 30 °C	31.4 mPa.s

Composition

Aluminum	≥ 14.0 wt%
C_5/C_4 (molar)	≥ 3.6 molar%
Isopentane	≥ 70.0 molar%

Thermochemical properties

Heat of hydrolysis, 25 °C	2816 J/g (673 cal/g)
Specific heat, 57 °C	2.071 J/g.°C (0.495 cal/g.°C)

Notes:
[a] Sometimes called 'IPRA.', a complex composition resulting from the reaction of TIBAL or DIBAL-H with isoprene. Because the neat product is extremely viscous, ISOPRENYL is available only in hydrocarbon solutions. [b] Cryoscopically in cyclohexane. [c] Data for 80% solution in hexane, unless otherwise noted. [d] Melting point for 80% solution in cyclohexane. [e] Aluminum content of concentrated product. Determined by titration of aqueous hydrolyzate.

Applications

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

Storage

ISOPRENYL solutions are stable when stored under a dry, inert atmosphere and away from heat. ISOPRENYL decomposes slowly above ~ 120°C.

Packaging and transport

ISOPRENYL solutions are available worldwide in cylinders and portable tanks. In North America only, ISOPRENYL solutions are 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

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

Additional information

Availability: ISOPRENYL is a commercial product available as pyrophoric and nonpyrophoric solutions in a variety of hydrocarbon solvents. Consult your Nouryon representative for further information.

Contact Us

Polymer Catalysts Americas
polymer.amer@nouryon.com

Polymer Catalysts Europe, Middle East, India and Africa
polymer.emeia@nouryon.com

Polymer Catalysts Asia Pacific
polymer.apac@nouryon.com