Darwin Chemical Company
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Luprenate MS

Diphenyl Methane Diisocyanate (Pure)

Catalog Nr. Q056

Definition

Synonyms & Trade Names: 4,4'-Diphenylmethane diisocyanate; MDI; Methylene bis (4-phenyl isocyanate); Methylene di-p-phenylene ester of isocyanic acid

Methylene diphenyl diisocyanate, most often abbreviated as MDI, is an aromatic diisocyanate. It exists in three isomers, 2,2'-MDI, 2,4'-MDI, and 4,4'-MDI. The 4,4' isomer is most practically useful, and is also known as Pure MDI. MDI is reacted with a polyol in the manufacture of polyurethane. It is the most produced diisocyanate

Diphenylmethane diisocyanate (MDI) is the generic name of a product used in industrial settings. Polymeric MDI (PMDI), the primary technical/commercial form of MDI, is actually a mixture that contains 25–80% monomeric 4,4'-MDI as well as oligomers containing 3–6 rings and other minor isomers, such as the 2,2'-isomer. The exact composition of PMDI varies with the manufacturer.

CAS Number 101-68-8

Application

Methyl di-p-phenylene isocyanate (MDI) is mainly used in polyurethane foams.

Rigid foams are mostly used in construction, refrigeration, packaging and insulation. Flexible foams are used in furniture, bedding and transportation.

is used for polyurethane elastomers (rollers, packing, rubber vibration insulators, synthetic leather, etc.), spandex fibres, and rubber shoe soles

The major application of 4,4'-MDI is the production of rigid polyurethane. Typically, one tonne of polyurethane foam needs 0.616 tonne of MDI and 0.386 tonne of polyol, with 0.054 tonne pentane as a blowing agent. These rigid polyurethane foams are good thermal insulators and used in nearly all freezers and refrigerators worldwide, as well as buildings. Typical polyols used are polyethylene adipate (a polyester) and poly(tetramethylene ether) glycol (a polyether).
4,4'-MDI is also used as an industrial strength adhesive, which is available to end consumers as various high-strength bottled glue preparations.

Technical Data

PROPERTIES

Molar mass	250.25 g/mol
Appearance	white or pale yellow solid
Density	1.230 g/cm3, solid
Melting point	40 °C (313 K)
Boiling point	314 °C (587 K)
Solubility in water	Reacts

Packaging & Handling

250 kg x drum

UN Number	Class	Packaging Group