Product Names  3-(t-Butyldimethylsilyloxy)-1-propyllithium, PFI 103

Formula  C₉H₂₁OSiLi

Appearance  Clear to yellow solution

Application  InitiaLi™ functional initiators include protected hydroxyl initiators and tertiary amine initiators for synthesis of hydroxyl or amine functional polymers.

Product Specification

Guaranteed*  3-(t-Butyldimethylsilyloxy)-1-propyllithium, wt%  10 – 30%

* This product can be made to agreed upon customer specifications.

Solvent  Cyclohexane

Physical Properties

Molecular weight  180.12
Boiling point or pure solvent  81°C
Density @20°C  0.79 g/cm³ for 12.5 wt.% in cyclohexane
Volatiles, % by wt.  70-90, varies with concentration
Pyrophoricity  Non-pyrophoric

Solubility  20wt% solution crystallizes at ~5 ºC

Thermal Stability  3-(t-Butyldimethylsilyloxy)-1-propyllithium is stable at ambient temperature and below. It will lose ~0.5wt% per day at 40 ºC. It should be kept free from heat, air, water, and carbon dioxide.
Toxicity/Safety Data

Corrosive to the eyes (may cause blindness), skin, mucous membranes and upper respiratory tract. Inhalation of vapors may cause dizziness, nausea, anesthesia, numbness, motor weakness in fingers and toes, incoordination, and headache. If ingested, may produce a lung aspiration hazard. May be harmful if swallowed, inhaled, or absorbed through skin.

ADDITIONAL INFORMATION ON SAFETY IS CONTAINED IN THE FMC NEW PRODUCT DATA SHEET (NPDS) AVAILABLE FOR THIS PRODUCT.

Handling/Storage/Disposal

Flammable liquid. Water reactive. Corrosive. Use in a closed system under argon or nitrogen. Do not get in eyes, on skin or clothing. Do not breathe vapors or mist. Store in a cool, dry place. Keep container closed. Keep away from sources of ignition, water, air, and oxidizing agents. Wear full face protective equipment and gloves. In case of fire, do not use water or carbon dioxide.

Shipping Containers

Glass bottles 125 mL, 500 mL and 1L bottles

Shipping Limitations

Shipments of 3-(t-Butyldimethylsilyloxy)-1-propyllithium are described as “Flammable liquids, corrosive, N.O.S. (3-(t-BUTYLDIMETHYLSILYLOXY)-1-PROPyllITHIUM IN CYCLOHEXANE, SOLUTION), 3 (8), UN 2924, PG II.” Shipments require "Flammable Liquid" and "Corrosive" labels.

- Post, Parcel: Not acceptable
- Sea: Class 3 (8) (IMDG)
- Road, Rail (USA): Class 3 (8) (DOT)
- Road, Rail (EU): Class 3 (8) (RID/ADR)
- Air: Class 3 (8) (IATA)

2.5 L maximum per inner glass container.
5 L maximum per single/outer container.
Cargo aircraft only

For shipments within Europe, labeling for supply requirements are:

- F: Highly Flammable
- C: Corrosive
- N: Dangerous for the Environment
- R&S Phrases: See Material Safety Data Sheet

Responsible Care® initiative dictates that all shipments must be transported in a DOT-approved vehicle in a responsible manner (i.e., no flat bed trucks).