

Product Names *n*-Butyllithium, *n*-BuLi, NBL

Formula CH₃CH₂CH₂CH₂-Li

Appearance Clear, colourless to yellow solution

Application *n*-Butyllithium is a very strong base, exceedingly useful in organic synthesis. NBL has found particular utility in deprotonation and metal-halogen exchange reactions. NBL is also a very effective initiator of anionic polymerization of styrene and conjugated dienes. The synthesis of solution SBR and of styrenic thermoplastic elastomers (TPEs), in particular, is facilitated by NBL. References: *The Chemistry of Organolithium Compounds*, ed. Zvi Rappoport and Ilan Marek, Wiley, **2004**, West Sussex, England.

Product Specification

Typical*

<i>n</i> -Butyllithium, wt%	19.5 – 20.5
Carbon Bound Lithium, %	97.5 min

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

Solvent Cyclohexane
(contains <10% hexanes or heptane to inhibit freezing)

Physical Properties	Molecular weight	64.06
	Density @20°C	0.75g/ml (6.3 lb/gal)
	Contained butyllithium	150g/L (1.25 lb/gal)
	Pyrophoricity	Pyrophoric

Solubility *n*-Butyllithium is miscible in all proportions with aliphatic, aromatic, and ethereal solvents; however, there is some reactivity with the latter two solvent types.

Thermal Stability At 20°C and 35°C, the average decomposition rates were 0.0015 and 0.011wt% per day, respectively. Recommended storage: 20°C or lower and preferably at 0°C.

Toxicity/Safety Data Danger. Catches fire spontaneously if exposed to air. In contact with water releases flammable gases, which may ignite spontaneously. Causes severe skin burns and eye damage. Highly flammable liquid and vapour. May be fatal if swallowed and enters airways. May cause drowsiness or dizziness. Suspected of damaging fertility. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

Handle under inert gas. Protect from moisture. Do not allow contact with air. Keep away from any possible contact with water, because of violent reaction and possible flash fire. Wear protective gloves/protective clothing/eye protection/face protection. In case of fire: Use dry chemical for extinction. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON Center or doctor/physician.

COMPLETE INFORMATION ON TOXICITY AND SAFETY IS CONTAINED IN THE SAFETY DATA SHEET (SDS) AVAILABLE FOR THIS PRODUCT.

Handling/Storage/Disposal KEEP AWAY FROM WATER, AIR AND OXIDIZING MATERIALS. Wear full face protection and gloves. Use in a closed system under argon or nitrogen. Keep away from heat, sparks and flame. Protect storage container from leaks and physical damage.

Shipping Containers	Bulk containers	2000 – 20000 L
	Cylinders	#5 – 420 L
	Glass bottles	125 mL, 500 mL, and 1 L

Shipping Limitations Shipments of NBL are described as "ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE (*N*-BUTYLLITHIUM, HYDROCARBON SOLUTION), 4.2 (4.3), UN 3394, PG I". Shipments require "Spontaneously Combustible" and "Dangerous When Wet" labels.

Post, Parcel, Air	Not acceptable
Sea	Class 4.2 (4.3) (IMDG)
Road, Rail (USA)	Class 4.2 (4.3) (DOT)
Road, Rail (EU)	Class 4.2 (4.3) (RID/ADR)