

Lithium Extraction and Specialty Steel Alloys

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Lithium Hydroxide

As the demand soars for electric vehicles and clean energy, there is a rush for producing Lithium Hydroxide which will be used in electric batteries as the cathode material. Lithium Hydroxide as a compound has better power density (more battery capacity), longer life cycle and enhanced safety features.

Lithium Hydroxide can be produced starting from Spodumene Ore via traditional mining or the Brine solutions found mostly in South America.



Rough Spodumene aka Triphane

Australia is one of the leading suppliers of Spodumene Ore. It is now focussing more into converting the ore into lithium hydroxide by building new refineries or increasing the capacity of existing ones. The ore to Lithium Hydroxide production route is as follows:

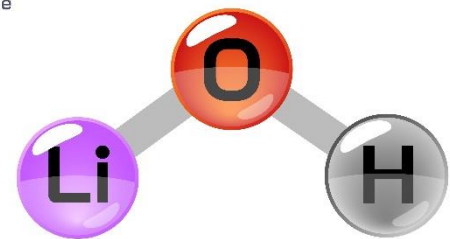
Lithium Hydroxide

Molecular structure

Molecular formula
LiOH

Molecular Weight
23.95 g/mol

 Hydrogen
 Lithium
 Oxygen



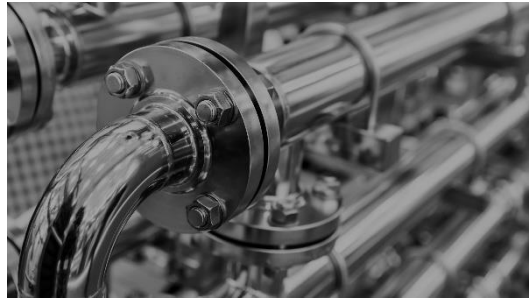
After the ore is mined, it is crushed and roasted to form a concentrate comprising of alpha phase Spodumene \Rightarrow Dried lithium concentrate is then processed in a calciner to convert spodumene from alpha to beta phase which is more reactive \Rightarrow The beta phase concentrate is acid roasted or digested with concentrated sulfuric acid at 250degC \Rightarrow Lithium Sulphate is leached out by mixing with the water \Rightarrow Lithium Sulphate is reacted with Sodium Hydroxide to form Lithium Hydroxide and Sodium Sulphate.



Lithium Processing Plant in Western Australia

Nickel Alloy Grade Steels

High Nickel Alloy grades Alloy 20 or Alloy 31 are the likely material in the sulfuric acid leaching process of the concentrate whereas as ss grade 304L is the most likely material for Lithium Hydroxide production in the refining process.



Specialised Pipe and Fittings Australia stocks 304L, 316L and S31803/S32205 Duplex grade piping products in Perth, Australia.

Additionally, we can supply material in specialty stainless steel pipes, tubes, fittings, flanges, bars, and plates in grades like 321/321H, 317L, 310S/H, 309S/H, 347S/H, S31803/S32205 Duplex, S32750 Super Duplex and N08904 (904L).

In high nickel alloys, we can supply grades such as Alloy 800/H/HT, Alloy 600/625, Monel 400, Ni200, Ni201, Alloy 20, Alloy 31, Alloy C-276, Alloy C-22 and Invar 36.

If you have any technical queries please contact:

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MATERIAL GRADES

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- Low Temperature Carbon
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- High Yield
- Carbon Steel
- Nickel Alloy
- Titanium
- Copper Nickel

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- Freight & Logistics
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- Warehousing
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- Line Pipe
- Seamless Tube
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- Forged Fittings
- Flanges
- Specialised Bolting