

ABSTRACT

A process and system are disclosed for producing lithium metal from a lithium-containing silicate mineral. In the process and system, the silicate mineral is subjected to an acid leach in a leaching reactor in which lithium is extracted from the silicate mineral. The extracted lithium is thermally
5 treated in a thermal treatment unit so as to convert it into lithium oxide. The lithium oxide is subjected to a carbothermal reduction stage in a carbothermal reduction furnace in which the lithium oxide is mixed with a source of carbon. The carbothermal reduction stage is operated at a temperature sufficient to cause the lithium oxide to be reduced to lithium metal and the carbon source to be oxidised into gaseous form.

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Figure 1