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Identification of Li-clays in continental salars in the Mesa Central, San Luis Potosi and Zacatecas, Mexico: an academic approach to their location.

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Lithium worldwide demand has been increasing since the mid-1900s. In this scenario lithium is becoming a metal of crucial importance to our modern world, its consumption has grown consistently and strongly as manufacturing firms utilise it in a growing number of important applications as ceramics, glass, lubricants, light alloys, medicine, and batteries.

Lithium deposits in Mexico occurred as clay deposits mainly located in Sonora (Northern Mexico), and as continental salars in the Mesa Central along the boundary between San Luis Potosi and Zacatecas states. The Mesa Central is an arid to semiarid climatic region where meteoric solution leach and concentrates Li-K-B in the brines.

The geological framework of the Mesa Central consists of Mesozoic metamorphic rocks, volcanic sedimentary, marine sedimentary and plutonic rocks, as well as Cenozoic acid and intermediate volcanic and volcaniclastic rocks, with intrusive bodies and covered by continental conglomerates and lacustrine deposits. The goal of this study is the identification of Li-clays which may be contained in the continental salars from this region. Seven continental salars were selected with possible lithium concentrations where four of them report Hectorite clay, Silinaite and Lepidolite lithium micas which were identified using powder X-ray Diffraction.

This study aims to enhance the collaboration between universities and industries through geological studies that can serve the industry as an exploration guide on the presence of lithium in the state of San Luis Potosí. As well as the human resources formation in lithium genesis which has not been completely understood in the area.