Battery-grade cobalt sulfate production process

What is the life cycle of cobalt sulfate production?
A life cycle assessment was performed based on ISO 14040 to evaluate the potential environmental impact and recognize the key processes. The system boundary of this study contains four stages of cobalt sulfate production: mining,beneficiation,primary extraction,and refining.

What is the system boundary of cobalt sulfate production?
The system boundary of this study is described as all activities within the cobalt sulfate production process(Fig. 1). "Cradle-to-gate" LCA research includes all relevant life cycle stages from ore mining to beneficiation,primary extraction,and refining processes.

Do downstream users of cobalt sulfate need a 'cradle-to-gate' life cycle assessment?
This paper builds a comprehensive inventory to support the data needs of downstream users of cobalt sulfate. A "cradle-to-gate" life cycle assessment was conducted to provide theoretical support to stakeholders. A life cycle assessment was performed based on ISO 14040 to evaluate the potential environmental impact and recognize the key processes.

What are the four stages of cobalt sulfate production?
The system boundary of this study contains four stages of cobalt sulfate production: mining,beneficiation,primary extraction,and refining. Except for the experimental data used in the primary extraction stage,all relevant data are actual operating data.

Does cobalt sulfate production affect the environmental burden of refining?
An LCA analysis was conducted on cobalt sulfate production to evaluate the environmental burden of cobalt refining, including mining, beneficiation, primary extraction, and refining phases.

How does cobalt affect lithium-ion battery production?
Research found that cobalt-dependent technologies face a limitation on cobalt supply concentration due to the increased lithium-ion battery demand(Fu et al. 2020). This situation forces global battery manufacturers to seek new cobalt alternative materials or reduce the use of cobalt.

battery-grade cobalt sulfate production from Co-Au ores in Finland Marja Rinne1 · Heini Elomaa2 · Mari Lundström1 Received: 27 April 2021 / Accepted: 19 August 2021 ... footprint of a production process alongside LCA. In this study, predictive simulation and life cycle mod-

Toronto, Ontario - (May 13, 2024) - Electra Battery Materials Corporation (NASDAQ: ELBM; TSX-V: ELBM) ("Electra" or the "Company") today provided an update on its Refinery project and announced the filing of their full year 2023 financial reports. Electra continues to move ahead with its plans to become the

first refiner of battery grade cobalt sulfate in North America by ...

Schematic diagram of the selected process steps (mining, base metal refining, Co refining, and Au refining) to produce copper sulfide, battery grade cobalt sulfate, and gold from a Co-Au...

Prepared from nickel-containing solution in cobalt production. 5. Prepared from nickel-containing waste. ... the impurities are few, the quality of the prepared nickel sulfate crystals is high, the production process is clean, and the environmental pollution is minimal. ... my country"s current representative battery-grade nickel sulfate ...

containing cathode materials such as Li-NMC. Battery-grade nickel used in the NMC cathode material is usually in the form of nickel sulfate hexahydrate (NiSO 4$6H 2O).5 To obtain high-purity nickel sulfate, hydrometallurgical processing of primary sources such as lateritic nickel ores and nickel sul de

Located near Temiskaming Shores, an Ontario city about 300 miles north of Toronto, Electra"s Ontario Cobalt Refinery is poised to be amongst the world"s lowest carbon sources of battery-grade cobalt due to the hydrometallurgical process used and the clean hydroelectricity powering the facility.

The invention relates to battery-grade cobalt sulfate, a production process method thereof and a battery. The production process method of the battery-grade cobalt sulfate comprises the following steps: mixing a cobalt-containing raw material, a reducing agent and a solvent, and carrying out a reduction leaching reaction to obtain a reduction leaching solution; mixing a ...

The leaching tests were conducted using 2 M H 2 SO 4, 6 vol.% H 2 O 2, reaction temperature 60 °C, agitation speed 300 rpm, solid/liquid ratio 100 g/L, reaction time 2 h. The metal ion concentration in the solution was analyzed by AAS (Perkin Elmer, AAnalyst 400). Removal of Fe, Cu, and Al from the liquor, as well as fast filtration of the residue was ...

Potential to produce up to 2,000 tonnes of cobalt in product per annum as the process excluded use of autoclave circuit, allowing for increase in plant throughput ... "Producing a battery grade cobalt sulfate is one of our most significant accomplishments as the majority of refined cobalt for the electric vehicle market is produced in Asia ...

Tests simulated existing circuits to determine the ability to produce a cobalt sulfate heptahydrate, a critical component of lithium-ion batteries. In 2019, First Cobalt produced a battery grade cobalt sulfate that ...

Not only do our nickel and cobalt processing solutions help you achieve primary end products such as briquettes, cathodes, or battery-grade sulfates, but we can also find ways to recover ...

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