PRODUCT DATASHEET

Battery Recycling Hydrometallurgy Pilot Line

50 kg/day black mass pilot line for R&D labs





DETAIL – REACTOR VESSEL

OVERVIEW

The Tech Inc. Battery Recycling Hydrometallurgy Pilot Line runs the complete metal-recovery flowsheet for spent lithium-ion batteries at pilot scale. Black mass is leached in acid, filtered, purified and separated by solvent extraction, and the metals are recovered as lithium, nickel and cobalt salts.

MODELS AND CONFIGURATIONS

- **TI-HMP-50** – 50 kg/day hydrometallurgy pilot line for R&D laboratories.
- **Modular layout** – each process step on its own frame, run alone or linked into one line.
- **Flowsheet options** – solvent extraction, precipitation and crystallisation steps arranged to the client's chemistry.

TYPICAL DESIGN DATA

Capacity	Typically 50 kg/day of black mass, or to client specification
Feed	Black mass from shredded lithium-ion batteries
Products	Lithium, nickel and cobalt salts
Leach chemistry	To the client's flowsheet
Wetted materials	Acid-resistant plastics, lined steel or alloy, to client specification
Temperature and pH control	On each reactor, to the flowsheet
Bought-in equipment	Proven pumps and instruments from leading makers, integrated into a line designed and built by Tech Inc.
Automation	PLC and SCADA with data logging for scale-up records

APPLICATIONS

Battery recycling R&D, flowsheet development and validation, testing of black mass from different cell chemistries, sample salt production, and university and institute research.

KEY ADVANTAGES

- **Complete flowsheet** – leach, filtration, purification, extraction and crystallisation in one line
- **Scale-up data** – logged process data support the design of a commercial plant
- **Flexible** – modules can be rearranged as the chemistry develops
- **Built for acid service** – wetted parts chosen for the acids and solvents used
- **Plant-scale principles** – the pilot uses the same process steps as our plant trains

Designed and built by Tech Inc. · **Part of the Davey Group since 1990**

Offices: Chennai · Toronto · Tallinn · Al Khobar

mail@techincresearch.com · +1 (289) 622-1032 · www.techincresearch.com

Disclaimer: All products, designs and content are the property of Tech Inc. Tech Inc. reserves the right to change specifications and details without notice. Images are for representation only; the supplied equipment may differ in appearance. Data are typical; final design to client specification.