PRODUCT DATASHEET

Crystallisation and Membrane Concentration Package

NF/RO concentration and salt crystallisation





DETAIL – PIPEWORK

OVERVIEW

The Tech Inc. Crystallisation and Membrane Concentration Package turns purified metal solutions into battery-grade lithium, nickel and cobalt salts. Nanofiltration (NF) and reverse-osmosis (RO) membranes first concentrate the solution and recover clean water, cutting the evaporation load.

MODELS AND CONFIGURATIONS

- **TI-CX-5** – crystallisation and membrane concentration package.
- **Membrane-first configuration** – NF and RO concentration ahead of the crystalliser to reduce evaporation.
- **Crystalliser only** – for solutions that are already concentrated.

TYPICAL DESIGN DATA

Feed	Purified metal solutions from solvent extraction or precipitation
Products	Lithium, nickel and cobalt salts
Membranes	Nanofiltration and reverse osmosis, selected to the feed
Throughput and evaporation rate	Sized to the duty, or to client specification
Heating	Steam or another heating medium, to client specification
Materials	Stainless steel or higher alloys for the process chemistry, to client specification
Bought-in equipment	Proven membranes, centrifuges and pumps from leading makers, integrated into a package designed and built by Tech Inc.

APPLICATIONS

Battery-grade salt production in recycling plants, crystallisation of nickel and cobalt sulphate and lithium salts, concentration of metal-bearing solutions, and water recovery from process streams.

KEY ADVANTAGES

- **Lower energy use** – membranes remove much of the water before evaporation
- **Consistent crystals** – controlled crystallisation, washing and mother-liquor recycle
- **Water recovery** – membrane permeate and condensate return to the process
- **Integrated control** – membranes, crystalliser and centrifuge run from one PLC and SCADA system
- **Matched to upstream trains** – designed alongside our leach and extraction equipment

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

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