



SysCAD

Design | Operate | Optimise

Thermodynamic Calculation Engines

- SysCAD has significantly expanded its capabilities for pyrometallurgy, hydrometallurgy, crystallisation and water treatment applications by allowing incorporation of third-party thermochemical equilibrium solvers directly into the process flowsheet.
- Solves alongside standard SysCAD reaction blocks, Gibbs free energy minimisation reactors and inbuilt thermodynamic calculations.
- Prediction and understanding of solution chemistry including solubility equilibrium, phase deportment and surface complexation.
- Simulation of unit operations such as reactors, crystallisers, smelters, evaporators, RO, SX and more...
- Inline calculation of solution properties including pH, osmotic pressure and melting points.
- Side calculations provide insight to process chemistry for optimisation and investigation of edge cases.

Applications in a Broad Range of Industries and Processes



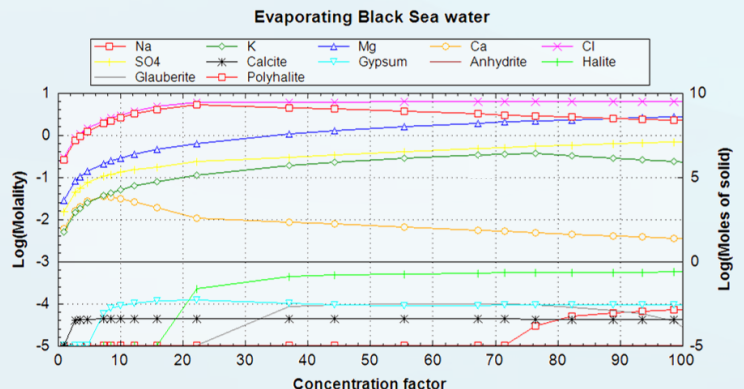
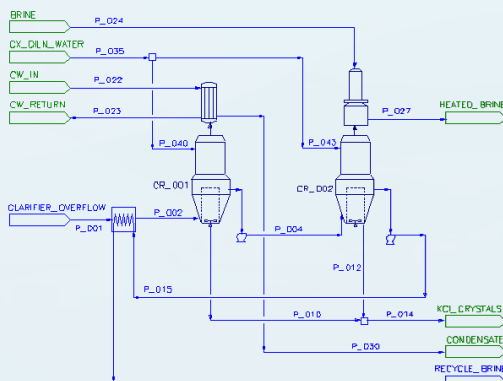
Hydrometallurgy
Ponds & Evaporators
Crystallisation



Pyrometallurgy
Smelter Design
Slag & Molten Phases



Water Treatment
Solvent Extraction
Reverse Osmosis



Enhance Your Process Simulation Accuracy



SysCAD TCE add-on provides seamless integration of high-fidelity thermodynamic calculation engines directly in your model.

- Multiple thermodynamic engines and configurations may be used in a single flowsheet.
- Specify temperature, enthalpy or phase formation targets for inline or side calculations.
- Call thermodynamic engines as required, using standard SysCAD operations elsewhere.
- Our growing list of supported TCEs includes:



AQSol

- Thermodynamic phase equilibrium
- Multi-component systems
- Electrolyte solutions

- Complex water chemistry
- Mixed solvent electrolytes
- Industry leading data

OLI



- Complex multiphase equilibrium
- Thermodynamic calculations
- Energy balance



GTT-Technologies
CRCT - ThermFact
Centre for Research in Computational Thermochemistry

ChemApp
with FactSage

- Aqueous geochemical calculations
- Activity coefficient models
- Surface complexation

PHREEQC

