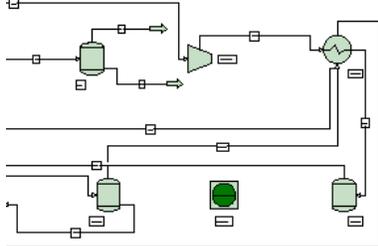# OLI Engine in PRO/II

The OLI Engine in PRO/II allows the full databank for OLI, both the AQ and MSE models, as a property package within the PRO/II flowsheet simulation environment. This product is available through the joint efforts of OLI and our Alliance Partner, SimSci by Schneider Electric.

Why is the full databank for OLI important? Clients who license this product have a choice of thermodynamic methods. This choice is important because MSE is the model receiving OLI's development time. Many of our popular chemistries have been updated and improved in the MSE framework, and many other chemistries (for example, MEG chemistry or any of the amines) are only handled properly in the OLI MSE model.

Clients may still choose a subset of the OLI data which is available directly from SimSci as PRO/II Electrolytes.

Features

✓	Electrolyte OLI MSE Property Package	Built on OLI's thermodynamic framework and available in PRO/II as an optional thermodynamic package.
✓	Electrolyte Component Database	Access to the complete OLI component databases in addition to SimSci's traditional databases
✓	Electrolyte Properties	Calculation and display of thermodynamic and transport properties specific to electrolyte systems such as pH, osmotic pressure, ionic strength and electrical conductivity.
✓	Chemistry Wizard	The OLI Chemistry Wizard provides features such as generating custom electrolyte models including MSE models, and creating and maintaining proprietary species databanks
✓	Electrolyte Column	OLI's column program for solving electrolyte towers
✓	Configuration Tool	OLI versioning tool that selects the right version of the OLI Engine that can be paired with the PRO/II version being run

Application

- ✓ Trace metal removal
- ✓ Brine handling
- ✓ Produced water management
- ✓ Amines
- ✓ Sour gas
- ✓ pH control

- ✓ Regulatory and environmental limits
- ✓ Crystallization
- ✓ Gas sweetening
- ✓ Chlor-alkali brines
- ✓ Acid stream neutralization

- ✓ Waste water treatment
- ✓ Organic acid removal in brines
- ✓ Scrubbers
- ✓ Caustic wash tower
- ✓ Foul feed stripper
- ✓ Multi-effect evaporator

The OLI MSE model might be better considered OLI's "Super Model" because it is an excellent choice for chemistries both inside and outside the range of the OLI's aqueous (AQ) model. Both the AQ and the MSE model are good for systems up to an ionic strength of 30 molal in the aqueous phase. This limit is fine for slurries and heavy brines, and chemical mixtures of many types.

When the question becomes how soluble other system components are in water – or without water – then the OLI MSE model is the only choice. This includes systems that contain H_2SO_4, glycols, alcohols, most amines and others: highly soluble in the aqueous phase.

Capabilities   OLI Engine is built on OLI's time-proven approach to electrolyte systems

✓ Complete speciation	The OLI AQ model predicts and considers all of the true species in solution in the range of -50 to 300° C, 0 to 1500 bar, and 0 to 30 molal ionic strength, while the OLI MSE model temperature limit is 90% of the critical temperature and there is no concentration limit.
✓ Standard state framework	Based on the Helgeson equation of state, parameter regression and proprietary estimation techniques for the aqueous framework and on OLI technologies for the MSE framework.
✓ Activity coefficients for complex and concentrated systems	For the aqueous framework, based on the combined work of Bromley, Zemaitis, Pitzer, and OLI technologists. For MSE, based upon OLI development, published, and peer-reviewed.
✓ Comprehensive databanks	The complete OLI databank with 80 inorganic elements, associated solution species and complexes, and numerous organics. OLI provides a paid thermophysical modeling service for customized coverage of client chemistry in the form of private databanks and / or extensions to the OLI databank.
✓ Thermophysical properties	OLI has developed unique chemical/physical models to compute thermodynamic (bulk and interfacial) and transport properties for complex electrolyte mixtures.

Related products

OLI Studio: Stream Analyzer   for in-depth chemistry studies of your electrolyte chemistry
OLI Studio: Corrosion Analyzer   for the electrochemistry of aqueous corrosion.