

OLI Engine: Developer Edition



OLI Engine: Developer Edition enables direct access the power of the OLI Engine by directly performing calculations from your code. This allows for the creation of a customized interface that meets your specific needs. The Developer Edition allows clients to embed calls to OLI's AQ and MSE electrolyte thermodynamic frameworks in their own programs.

The OLI Engine performs calculations that accurately predict the behavior of complex and concentrated electrolyte systems, using real solution theory to predict departures from ideal solution behavior, which can be significant and often non-intuitive.

This software can be used by:

- ✓ Prospective Alliance Partners to embed OLI as a property method in a commercial flowsheet simulator
- ✓ Clients within their proprietary flowsheet simulator or other simulation programs
- ✓ IT developers in client companies to automate calls to OLI within their own software platforms
- ✓ MS Excel users familiar with VBA to customize Excel spreadsheets with OLI calculations.



Core interface

- ✓ Core Interface The core interface is written in FORTRAN, and is collection of calls can be used to load a prebuilt chemistry model, setup an equilibrium calculation and access the resulting phase separations and properties. The is also direct calls for properties without the need to perform an equilibrium call, providing maximum flexibility and speed for the calling program. Because this interface was written in FORTRAN all array access and strings need to be handled appropriately if being used from C/C++.
Software development skills a basic knowledge of OLI internals is needed.
- ✓ C wrappers The example program that comes with this interface shows how to wrap the core Interface calls in C.

C++ helper classes have been developed to help with the FORTRAN string handling, arrays access and calling semantics.
- ✓ C++ helpers

OLI API

- ✓ API The OLI API is written in C++ and is layered on top of the Core Interface. The API works with the concept of streams. Using a chemistry model defined in either the OLI Studio or the Chemistry Wizard, this collection of calls sets up input stream data, calls an equilibrium calculation, and retrieves data from a result stream. Ionic input is also supported. The API only supports native units, any unit conversion needs to be done by the calling program.
VBA development skills are needed to work with this product in MS Excel.

Capabilities

- Chemistry model flexibility, private databanks, and electrolyte framework selection
Both the Core Interface and the API can access either the OLI AQ or MSE thermodynamic framework. Multiple chemistry models can be created outside the Developer Edition (in OLI Studio or OLI Chemistry Wizard) including chemistry models with private databanks, and the resulting chemistry models can be used by either Interface. This is the recommended chemistry model generation for the Developer Edition.
- Equilibrium calculation types
OLI's standard equilibrium calculation types, including isothermal, set pH, precipitation points, etc are supported in both interfaces, with the exception of the Custom calculation, which is only available in the Core Interface.
- Native units only
Both interfaces work in native units only, with units conversion left to the calling program
- Properties and phase separations
Both interfaces return properties and phase separations. The API requires an equilibrium calculation for properties; the Core Interface will do properties calculations without an equilibrium call.
- Corrosion rates calculation
The Corrosion Rates calculation is currently only supported in the Core Interface. Neither interface supports Stability Diagrams, Polarization curves, or EVS

OLI Support



There is only paid support available for the OLI Engine: Developer Edition, which comes directly from OLI Product Development. While this support is optional, OLI recommends at least a 2-day support retainer when clients intend to work with the lower level, Core Interface.

OLI can recommend a third-party vendor who can supply programming skills, when clients would like to use the OLI API for their own applications.

Now shipping V9

Both the Core Interface and the OLI API come together in the Developer Edition. Manuals and samples are available.

