



**OLI Tips #27**  
**The ASAP Variable List.**  
 (Revised June 4, 2007)

The following list of variables are used internally in the OLI software. Programs such as the model generator and regression require the use to know these values and the default units.

| <u>Variable Name</u> | <u>Description</u>  | <u>Units (Default-Internal)</u> |
|----------------------|---|---------------------------------|
| T                    | temperature   | Kelvin                          |
| PT                   | pressure  | atmospheres                     |
| I                    | ionic strength  | mole fraction                   |
| PH                   | pH  | ---                             |
| -IN                  | inflows   | gmoles                          |
| -AQ, -ION            | aqueous solution concentration  | mole fraction                   |
| -PPT, - .vH2O        | precipitates and hydrates   | g moles                         |
| H2O                  | water in soln   | gmoles                          |
| -SOL                 | solid solution concentration  | mole fraction                   |
| Y-                   | vapor mole fractions  | ----                            |
| X-O                  | 2nd liquid phase mole Fractions   | ----                            |
| SOLMAS               | solid medium mass (for cation exchange medium, based upon H-solid molecular weight) | kg                              |
| LIQMOL               | total liquid moles  | gmoles                          |
| V                    | total vapor moles   | gmoles                          |
| SOLSUM               | total solid moles   | gmoles                          |
| TOTO                 | total 2nd liquid moles  | gmoles                          |
| ENTHALPY             | total enthalpy  | cal                             |
| ENTHAL               | liquid phase enthalpy   | cal                             |
| ENTHAV               | vapor phase enthalpy  | cal                             |
| ENTHAS               | solid phases enthalpy   | cal                             |
| ENTHAI               | inert phases enthalpy   | cal                             |
| DENLIQ               | liquid density  | gmoles/liter                    |
| ZCOMP                | vapor compressibility   | ----                            |
| VOL                  | total volume  | liters                          |
| VOLLIQ               | liquid volume   | liters                          |
| VOLVAP               | vapor volume  | liters                          |
| VOLSOL               | solid volume  | liters                          |
| EXT                  | kinetics extent of reaction   | gmoles /hr                      |
| TSTEP                | kinetics time step  | hr                              |
| A-AQ, A-ION          | loge (aq phase activity coef)   | ----                            |
| AH2O                 | loge (aq phase H2O activity)  | ----                            |
| AY <sup>-</sup>      | loge (vapor phase fugacity coef)  | ----                            |

| <u>Variable Name</u> | <u>Description</u>             | <u>Units (Default-Internal)</u> |
|----------------------|--------------------------------|---------------------------------|
| K                    | loge (equilibrium K-values)    | ----                            |
| L-AQ, L-ION          | loge (aq phase mole fractions) | -----                           |

loge = natural logarithm (log base e)