Soil gas concentrations cannot be directly entered. However, by using the equilibrium partitioning equation, an equivalent total soil concentration can be calculated as function of soil gas concentration, which can in turn be entered into the software as the soil concentration.

Assuming equilibrium partitioning among the soil, air and water phases, the bulk soil concentration can be derived from the soil gas concentration by the following:

CT (mg/kg) = Cair(mg/L) / H(dimensionless) / Ksw(kg/L)

Where:
CT (mg/kg) = bulk soil concentration
Cair (mg/L) = air phase (soil gas) concentration, (mg/L = ug/L * 10-6)
H = dimensionless Henry's Law constant
Ksw (kg/L) = bulk soil-water partition factor, defined as follows.

Ksw = rhob / (thetaW + kd*rhob + H*thetaA)

Where:

rhob (kg/L) = soil bulk density
kd (L/kg) = soil-water partition coefficient (=foc*Koc for organics)
thetaW = volumetric water content (dimensionless)
thetaA = volumetric air content (dimensionless)