Soot Emissions Model Reference

There are three soot emission models available to solve combustion problems, the Soot Moments model, Soot Two-Equation model, and Soot Sections model.

The soot emissions models influence the Participating Media Radiation (DOM) and Gray Thermal Radiation models by contributing to the absorption coefficient of the continuous phase (the absorption coefficient describing both absorption and emission). Simcenter STAR-CCM+ models the soot as a gray medium, treating the soot as one component of the continuous phase. The total absorption coefficient of the gas includes the soot absorption coefficient as part of an algebraic sum. You can specify the value of the absorption coefficient as a constant, as a field function, or by the Planck Mean Absorption Coefficient method.

oot Emission Model Reference

Theory	See Soot.
Provided By	**[physics continuum]** > (and then)**Models** > (and then)*Optional Models*
Example Node Path	**Continua** > (and then)**Physics 1** > (and then)**Models** > (and then)**Soot Emissions**
Requires	**STAR-CCM+ In-cylinder** *Combustion Model*: **Complex Chemistry**, **ECFM-3Z**, or **ECFM-CLEH** **Simcenter STAR-CCM+** *Material*: **Multi-Component Gas** *Reaction Regime*: **Reacting** *Reacting Flow Models*: **Flamelet** or **Reacting Species Transport** Then either: • *Flamelet Models*: **Chemical Equilibrium**, or **Flamelet Generated Manifold**, or **Steady Laminar Flamelet** • *Reacting Species Models*: **Complex Chemistry** or **Eddy Break-Up** *Flow*: **Segregated Flow**
Properties	None