

Filter Text

Setup

- General
- Models
 - Multiphase (Off)
 - Energy (On)
 - Viscous (SST k-omega)
 - Radiation (Off)
 - Heat Exchanger (Off)
 - Species (Off)
- Discrete Phase (On)
 - injection-0
- Solidification & Melting (Off)
- Acoustics (Off)
- Structure (Off)
- Eulerian Wall Film (Off)
- Potential/Li-ion Battery (Off)
- Materials
- Cell Zone Conditions
- Boundary Conditions
 - Inlet
 - inlet (velocity-inlet id=...

General

Mesh

Scale... Check Report Quality

Display... Units...

Solver

Type

Pressure-Based
 Density-Based

Velocity Formulation

Absolute
 Relative

Time

Steady
 Transient

Gravity

Gravitational Acceleration

X (m/s²) 0

Y (m/s²) -9.81

Z (m/s²) 0

Set Injection Properties

Injection Name: injection-0 Injection Type: surface

Highlight Surfaces

Release From Surfaces: Filter Text

- inlet
- inner_1
- inner_2
- plane-11
- wall_inner_pipe_1
- wall_inner_pipe_2
- wall_pipe...

Particle Type

Massless Inert Droplet Combusting Multicomponent Custom

Material: wood Diameter Distribution: uniform Oxidizing Species: Discrete Phase Domain: none

Evaporating Species: Devolatilizing Species: Product Species:

Point Properties Physical Models Turbulent Dispersion Parcel Wet Combustion Components UDF Multiple Reactions

Variable	Value	
Diameter (mm)	0.01	
Temperature (k)	300	
Start Time (s)	0	
Stop Time (s)	0.08	
Velocity Magnitude (m/s)	0.0005	constant
Total Flow Rate (kg/s)	0.1	constant

Scale Flow Rate by Face Area

Inject Using Face Normal Direction

Stagger Options

Stagger Positions

Stagger Radius (mm): 0

Vaporating Species Devolatilizing Species Product Species

Point Properties Physical Models Turbulent Dispersion Parcel Wet Combustion Components

Stochastic Tracking

Discrete Random Walk Model
 Random Eddy Lifetime
Number of Tries: 1
Time Scale Constant: 0.15

Cloud Tracking

Cloud Model
Min. Cloud Diameter (mm): 0
Max. Cloud Diameter (mm): 1e+08

Point Properties Physical Models Turbulent Dispersion Parcel Wet Combustion Components UDF

Parcel Definitions

Parcel Release Method: constant-mass
Parcel Mass (kg): 1e-08

Discrete Phase Model

Interaction

Interaction with Continuous Phase
 Update DPM Sources Every Flow Iteration
DPM Iteration Interval: 250

Contour Plots for DPM Variables

Mean Values

Particle Treatment

Unsteady Particle Tracking
 Track with Fluid Flow Time Step

Inject Particles at

Particle Time Step
 Fluid Flow Time Step
Particle Time Step Size (s): 0.0005
Clear Particles

Tracking Physical Models UDF Numerics Parallel

Tracking Parameters

Max. Number of Steps: 100000
 Specify Length Scale
Length Scale (mm): 10

Tracking Option

High-Res Tracking

Solution Methods



Pressure-Velocity Coupling

Scheme

SIMPLE

Spatial Discretization

Green-Gauss Cell Based

Pressure

Standard

Density

First Order Upwind

Momentum

First Order Upwind

Turbulent Kinetic Energy

First Order Upwind

Specific Dissipation Rate

First Order Upwind

Transient Formulation

First Order Implicit

- Non-Iterative Time Advancement
- Frozen Flux Formulation
- Warped-Face Gradient Correction
- High Order Term Relaxation

Options...

Default

Solution Controls



Under-Relaxation Factors

Density

Body Forces

Momentum

Turbulent Kinetic Energy

Specific Dissipation Rate

Turbulent Viscosity

Energy

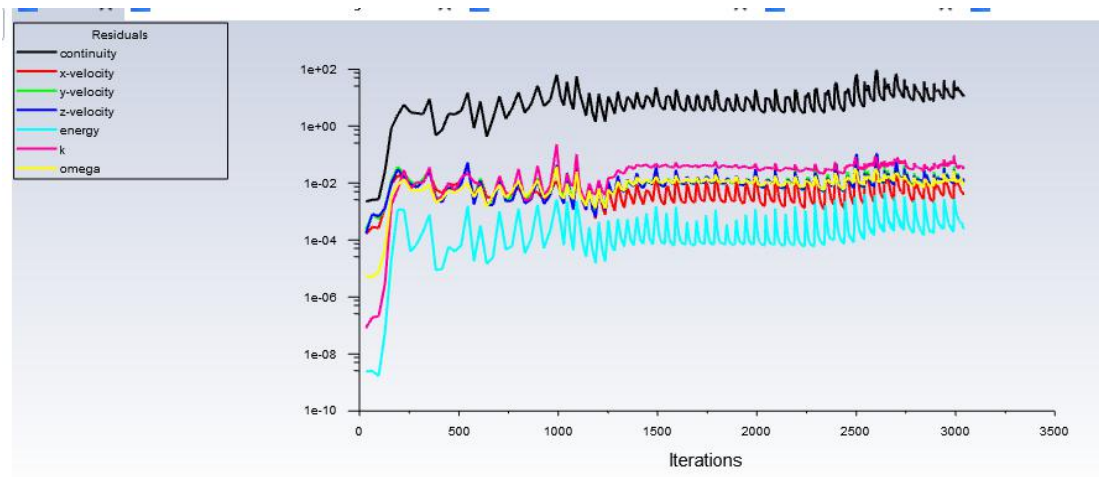
Discrete Phase Sources

Default

Equations...

Limits...

Advanced...



Advancing DPM injections ...

Injecting 5004 particle parcels with mass 5.004e-05 at t = 0.064

number tracked = 40915, escaped = 4778, incomplete = 2

Injecting 5004 particle parcels with mass 5.004e-05 at t = 0.0645

number tracked = 41141, escaped = 5093, incomplete = 3

WARNING: 0.0111% of the total discrete phase mass was not tracked for the expected $t = 0.000356$ s less on a mass-weighted average (which is 1.5220% of their total age or 35). You may be able to reduce this discrepancy by increasing the maximum number of time steps used to compute a single particle trajectory.

Advancing DPM injections

Injecting 5004 particle parcels with mass 5.004e-05 at t = 0.063
number tracked = 40086, escaped = 4681, incomplete = 2
Injecting 5004 particle parcels with mass 5.004e-05 at t = 0.0635
number tracked = 40409, escaped = 4498, incomplete = 5

WARNING: 0.0195% of the total discrete phase mass was not tracked for the expected re.
0.00012 s less on a mass-weighted average (which is 0.6139% of their total age or 11.97%
You may be able to reduce this discrepancy by increasing the maximum number of time steps
used to compute a single particle trajectory.

