

CI Carbonaceous Chondrite Engineering Simulant | **Fact Sheet**

003-15-001-0823

Simulant Name: CI-E

Simulant Type: Engineering Grade

Uncompressed Bulk Density: 1.26g/cm³

Grain Density: 2.45g/cm³



Mineralogy

As mixed.

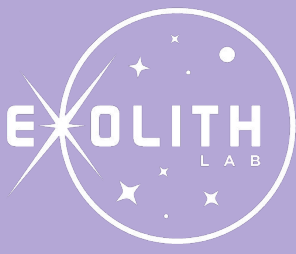
Component	Wt.%
Smectite	51.3
Magnetite	10.0
Attapulgitite	5.3
Olivine	7.0
Pyrite	7.0
Vermiculite	9.6
Coal	5.0
Ferrihydrite	4.8

Bulk Chemistry

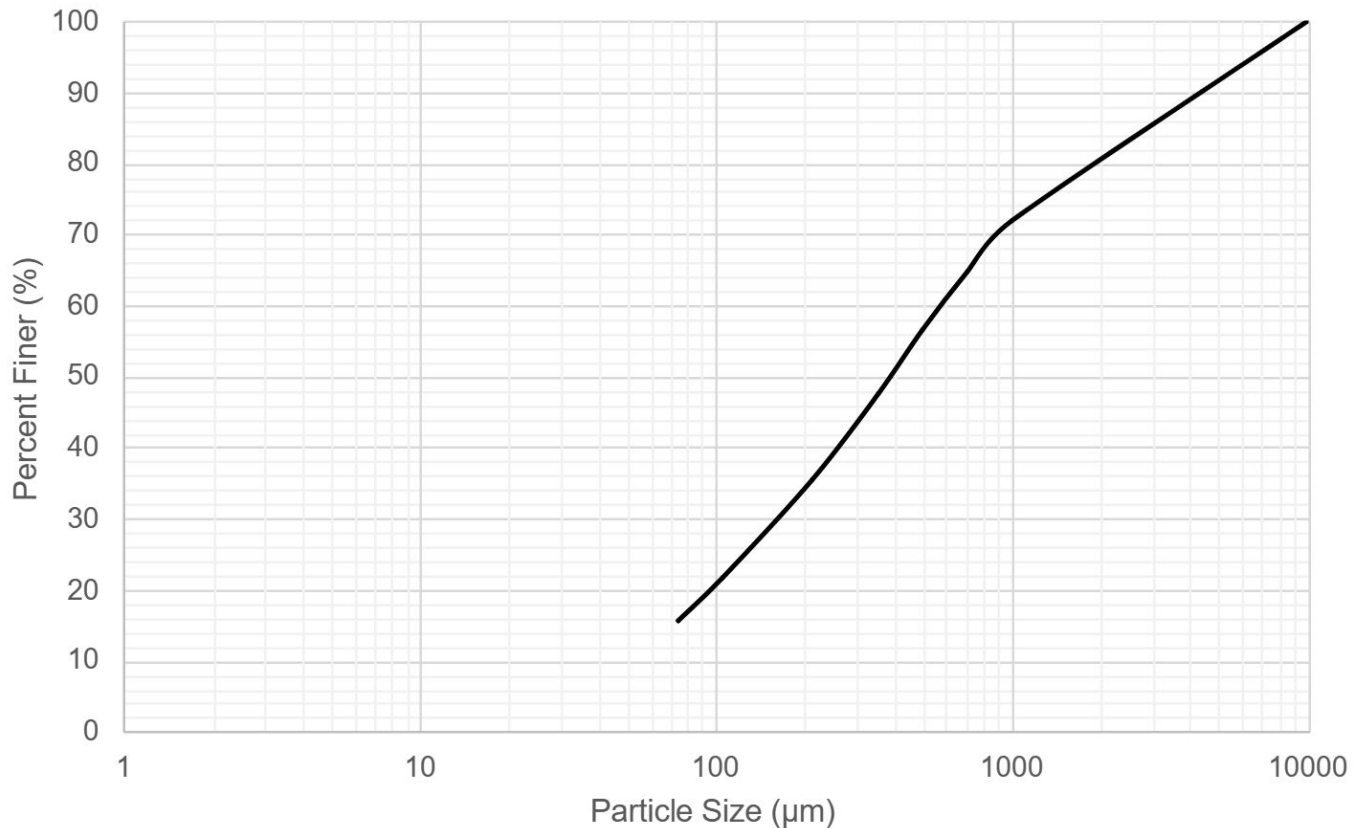
Oxide	Wt.%
SiO ₂	24.6
Al ₂ O ₃	4.6
CaO	6.0
Fe ₂ O ₃	16.9
K ₂ O	2.3
MgO	27.4
MnO	0.1
P ₂ O ₅	1.0
TiO ₂	0.5
SO ₃	11.2
Na ₂ O	5.4
Cr ₂ O ₃	0.1
Total	100.0

Safety

See SDS for details. Primary hazard is dust inhalation; wear a respirator in dusty conditions.



CI-E Particle Size Distribution



Cobble Procedure

CI-E Asteroid Simulant is formed by:

1. combining the dry mixture with DI water at 2:1 simulant to water
2. air drying ~1-2in cobbles
3. crushing cobbles into a wide distribution of particle sizes.

To increase the strength of cobbles:

1. Cure wet cobbles at 80°C for 24 hours

Particle size can be altered by:

1. Crushing the given simulant further
2. re-forming simulant into larger cobbles through re-wetting and re-drying