

Simulant Name: CM-E
Simulant Type: Engineering Grade
Uncompressed Bulk Density: 1.29g/cm³
Grain Density: 2.22g/cm³



Mineralogy

As mixed.

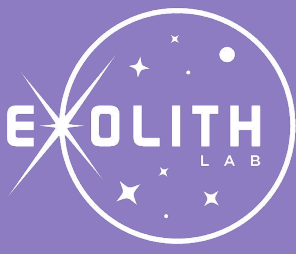
Component	Wt.%
Smectite	73.8
Magnetite	5.0
Olivine	11.2
Pyrite	3.3
Coal	3.6
Pyroxene	2.1
Siderite	1.0

Bulk Chemistry

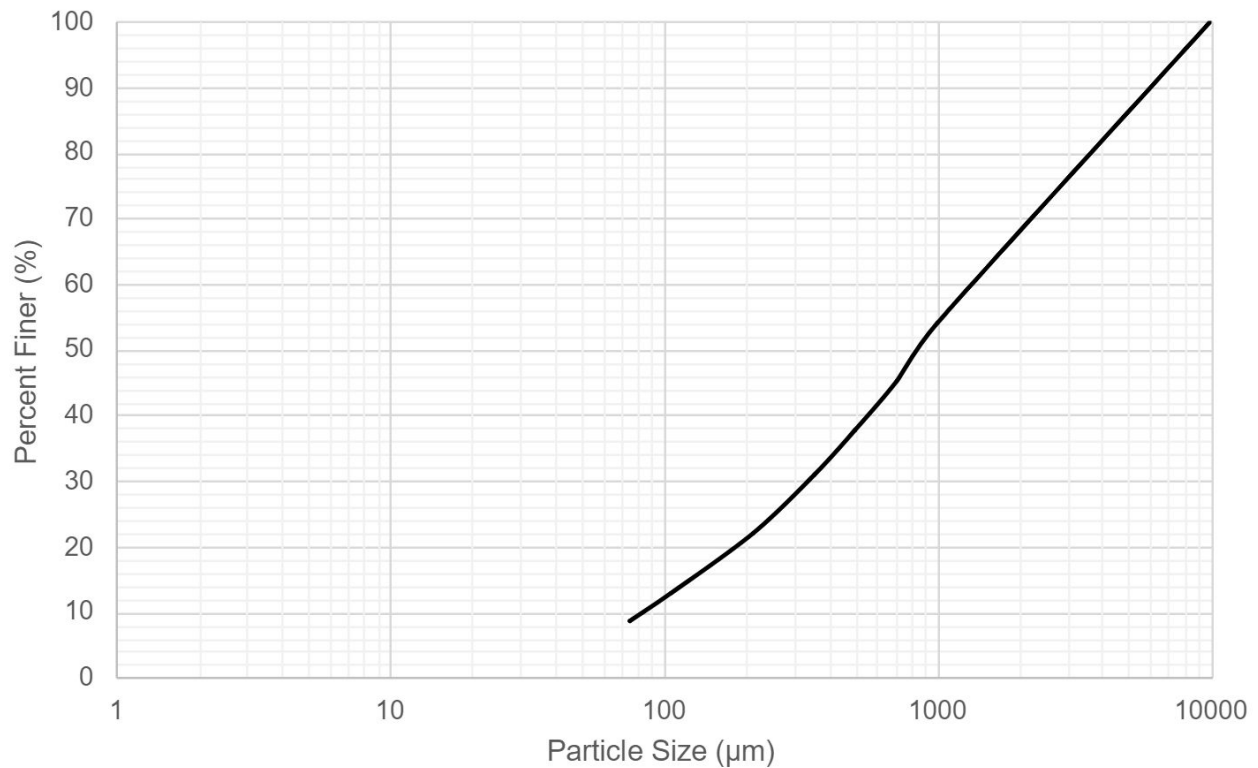
Oxide	Wt.%
SiO ₂	39.7
Al ₂ O ₃	5.7
CaO	14.3
Fe ₂ O ₃	4.4
K ₂ O	4.0
MgO	25.2
MnO	0.1
P ₂ O ₅	0.9
TiO ₂	0.34
SO ₃	1.0
Na ₂ O	4.4
Cr ₂ O ₃	0.05
Total	100.0

Safety

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



CM-E Particle Size Distribution



Cobble Procedure

CM-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