



Simulant Name: LMS-1D Lunar Mare Dust Simulant

Simulant Type: Extra-fine Lunar mare simulant for dust studies

Reference Material: Average lunar maria

Uncompressed Bulk Density: 0.79g/cm³

Mean Particle Size: 6 μm

Median Particle Size: 6 μm

Particle Size Range: <0.04 - 35 μm



Geotechnical Properties

Angle of Repose: 46.5°

¹**Cohesion:** 0.172 kPa

¹**Angle of Internal Friction:** 21.8°

Geotechnical Property Sources

¹[2038.PDF \(usra.edu\)](#)

Mineralogy

As mixed.

Component	Wt.%
Bronzite	32.8
Glass-rich basalt	32.0
Anorthosite	19.8
Olivine	11.1
Ilmenite	4.3

Safety

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

Bulk Chemistry

²Relative abundances. Measured by XRF.

Oxide	Wt.%
SiO ₂	47.42
Al ₂ O ₃	14.02
CaO	8.26
Na ₂ O	1.72
Fe ₂ O ₃	8.74
K ₂ O	0.39
MgO	14.91
MnO	0.18
P ₂ O ₅	0.20
TiO ₂	2.68
LOI	0.48
Total	99.0

²[\(PDF\) Characterization of planetary regolith simulants for the research and development of space resource technologies \(researchgate.net\)](#)



Particle Size Distribution

From CILAS 1190 laser diffraction particle size analyzer

