

Simulant Name: LHS-1D Dust Simulant
Simulant Type: Extra-fine lunar highlands simulant for dust studies
Reference Material: Average lunar highlands
Uncompressed Bulk Density: 0.79 g/cm³
Mean Particle Size: 7 μm
Median Particle Size: 10 μm
Particle Size Range: <0.04 – 35 μm



Geotechnical Properties

Angle of Repose (10g): 48.6°
Angle of Repose (250g): 45.2°
¹**Cohesion:** 0.205 kPa
¹**Angle of Internal Friction:** 28.62°

Geotechnical Property Sources

¹[2038.PDF \(usra.edu\)](#)

Mineralogy

As mixed.

Component	Wt.%
Anorthosite	74.4
Glass-rich basalt	24.7
Ilmenite	0.4
Olivine	0.2
Bronzite	0.3

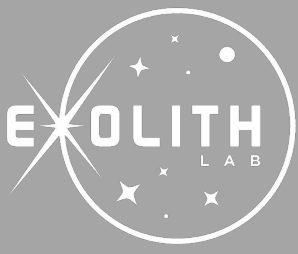
*Glass-rich basalt sourced from Merriam Crater. This is the same source as JSC-1 lunar simulant.

Bulk Chemistry

²Relative abundances. Measured by XRF.

Oxide	Wt.%
SiO₂	49.12
TiO₂	0.63
Al₂O₃	26.29
FeO	3.20
MnO	0.06
MgO	2.86
CaO	13.52
Na₂O	2.55
K₂O	0.34
P₂O₅	0.17
LOI	0.41
Total	99.15

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

