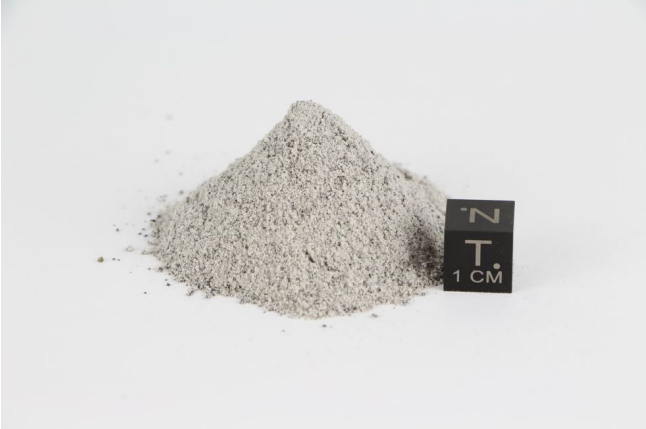
LHS-1 Lunar Highlands Simulant | **Fact Sheet**

003-01-001-1223

Simulant Name: LHS-1 Highlands Simulant
Simulant Type: General purpose
Reference Material: Average lunar highlands
Uncompressed Bulk Density: 1.27 g/cm^3
Median Particle Size: 51µm
Particle Size Range: <0.04 µm – 1000 µm



Geotechnical Properties

[1]**Angle of Repose (10g):** 47.0°
Angle of Repose (250g): 39.5°
[2]**Cohesion:** 0.311 kPa
[2]**Angle of Internal Friction:** 31.49°

Mineralogy

As mixed.

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

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

Bulk Chemistry

[3]Relative abundances. Measured by XRF.

Oxide	Wt.%
SiO_2	49.12
TiO_2	0.63
Al_2O_3	26.29
FeO	3.20
MnO	0.06
MgO	2.86
CaO	13.52
Na_2O	2.55
K_2O	0.34
P_2O_5	0.17
LOI	0.41
Total	99.15

Geotechnical Property Sources

[1] (PDF) The Effect of Sample Mass on the Angle of Repose of Lunar Regolith Simulants (researchgate.net)

[2] Geomechanical properties of lunar regolith simulants LHS-1 and LMS-1 (shopify.com)

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

Particle Size Distribution

Using a combination of laser and sieve analysis