



LMS-1 Lunar Mare Simulant | Fact Sheet

January, 2021

Simulant Name: LMS-1 Mare Simulant
Simulant Type: General purpose
Reference Material: Average lunar maria
Uncompressed Bulk Density: 1.56 g/cm³
Mean Particle Size: 50 μm
Median Particle Size: 45 μm
Particle Size Range: <0.04 μm – 300 μm



Mineralogy

As mixed.

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

Safety

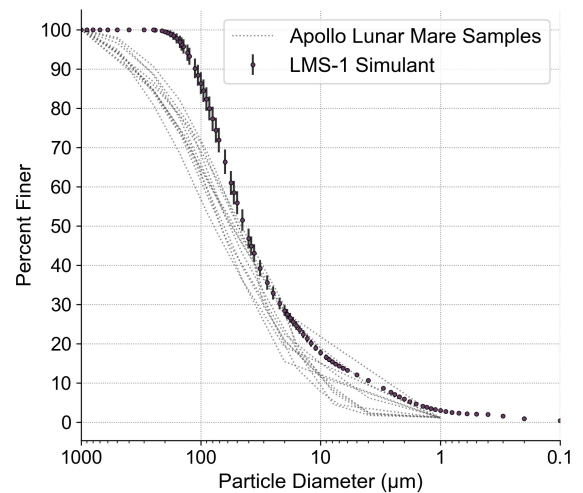
See SDS for details. Primary hazard is dust inhalation; wear a respirator in dusty conditions.

Bulk Chemistry

Measured by XRF.

Oxide	Wt.%
SiO ₂	40.2
Al ₂ O ₃	14.0
CaO	9.8
Fe ₂ O ₃	13.9
K ₂ O	0.6
MgO	12.0
MnO	0.3
P ₂ O ₅	1.0
TiO ₂	7.3
Cl	0.4
Cr ₂ O ₃	0.3
NiO	0.2
SrO	0.1
Total	100.0

Particle Size Distribution



FTIR Spectrum

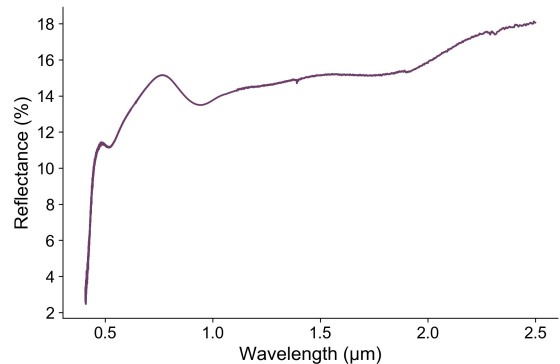


Photo credit Matthew Villegas. FTIR spectrum courtesy of Katerina Slavicinska, Bennett Lab, UCF. Apollo particle size data adapted from the Lunar Soils Grain Size Catalog, Graf, 1993.