



Simulant Name: MGS-1C Mars Global Hydrated Clay Simulant
Simulant Type: ISRU applications
Uncompressed Bulk Density: 1.12 g/cm³
Median Particle Size: 14 μm
Particle Size Range: <0.4 - 1000 μm
Reference Material: M-WIP Reference Case C



Geotechnical Properties

Coming soon!

Safety

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

Mineralogy

As mixed.

Component	Wt.%
Smectite	40.0
Anorthosite	16.4
Glass-rich basalt	13.7
Pyroxene	12.2
Olivine	8.2
Mg-sulfate	2.4
Ferrihydrite	2.1
Hydrated silica	1.8
Magnetite	1.1
Anhydrite	1.0
Fe-carbonate	0.8
Hematite	0.3

Bulk Chemistry

¹Measured by XRF.

Oxide	Wt.%
SiO ₂	43.83
Al ₂ O ₃	10.42
CaO	9.13
Na ₂ O	1.48
Fe ₂ O ₃	7.34
K ₂ O	1.44
MgO	13.47
MnO	0.09
P ₂ O ₅	0.14
TiO ₂	0.39
LOI	10.38
Total	98.11

¹[\(PDF\) 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

