

Simulant Name: MGS-1C Clay ISRU
Simulant Type: Water extraction applications
Reference Material: M-WIP Reference Case C
Publication: Cannon et al. 2019
 Icarus 317, 470-478
Bulk Density: Data coming soon
Particle Size Range: 0-1 mm
Mean Particle Size: Data coming soon



Mineralogy

Weight percent, as mixed.

Smectite	40.0
Plagioclase	16.4
Basaltic glass	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

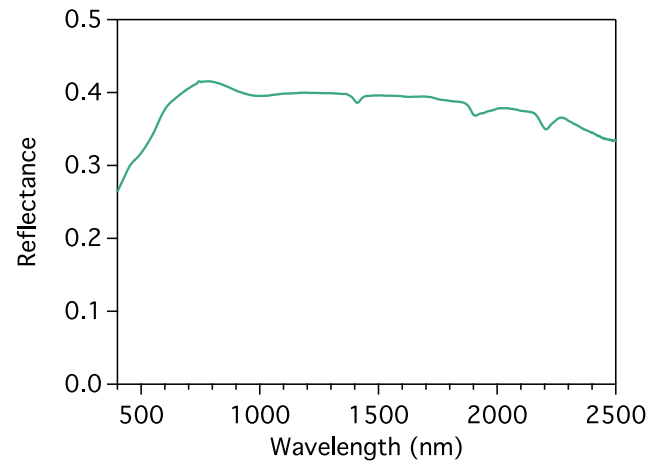
Bulk Chemistry

Weight percent, as measured by XRF.

SiO ₂	56.1
TiO ₂	0.2
Al ₂ O ₃	16.9
Cr ₂ O ₃	0.0
FeO _T	8.2
MnO	0.0
MgO	12.6
CaO	2.0
Na ₂ O	1.9
K ₂ O	0.5
P ₂ O ₅	0.4
SO ₃	1.2
Total	100.0

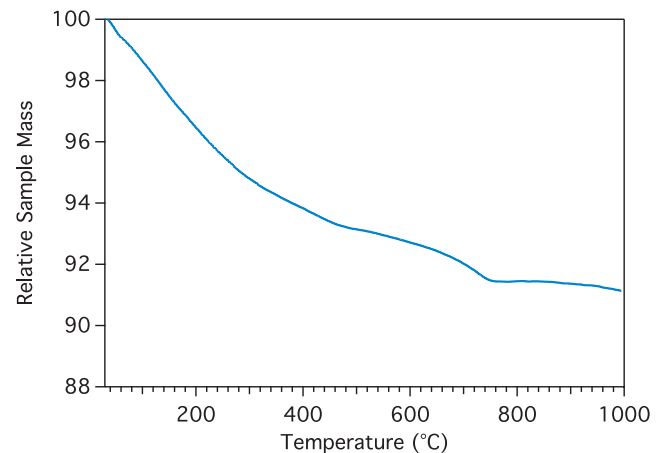
Reflectance Spectrum

As measured on an ASD Fieldspec at 30° incidence and 0° emergence angles.



Volatile Release Pattern

As measured on a SAM-analog TG/EGA instrument at JSC. Total evolved water at 200° C is 3.5 wt.%.



Safety Information

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