# CI Carbonaceous Asteroid Simulant | Fact Sheet

**August, 2018**

**Simulant Name:** UCF/DSI CI Simulant
**Simulant Type:** General Purpose
**Reference Material:** Orgueil meteorite
**Publication:** Britt et al. in prep
**Bulk Density:** 1.10 g/cm$^3$
**Default Particle Size:** 0-6.3 mm


## Mineralogy

Weight percent, as mixed.

| | | | |
|---|---|---|---|
| Mg-serpentine | 48.0 | Pyrite | 6.5 |
| Magnetite | 13.5 | Epsomite | 6.0 |
| Vermiculite | 9.0 | Coal (sub-bit.) | 5.0 |
| Olivine | 7.5 | Attapulgite | 5.0 |

## Bulk Chemistry

Weight percent, as measured by XRF.

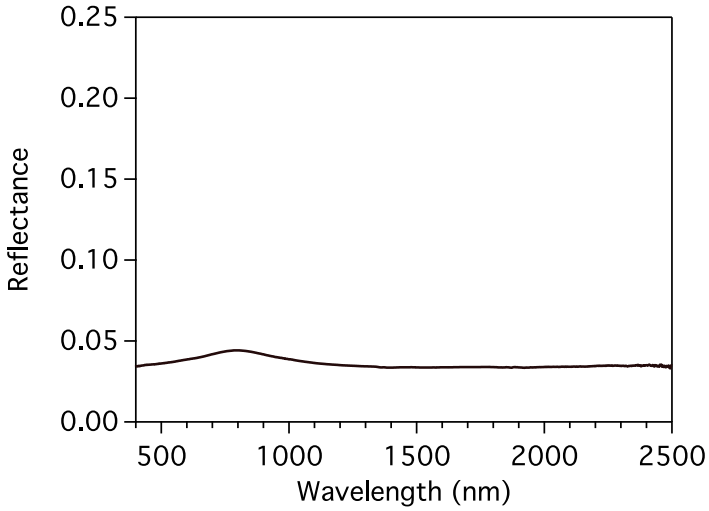
| | | | |
|---|---|---|---|
| $SiO_2$ | 25.0 | CaO | 3.0 |
| $TiO_2$ | 0.5 | $Na_2O$ | 6.4 |
| $Al_2O_3$ | 3.1 | $K_2O$ | 0.4 |
| $Cr_2O_3$ | 0.2 | $P_2O_5$ | 0.4 |
| $FeO_T$ | 25.8 | $SO_3$ | 4.9 |
| MgO | 30.2 | **Total** | 100.2 |

## Safety Information

The CI simulant uses verified asbestos-free serpentine, and sub-bituminous coal that is known to contain less PAHs than other coal or coal combustion products. Primary hazards are dust inhalation and skin contact: always wear a mask and gloves when handling simulants.

## Reflectance Spectrum

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




## Volatile Release Pattern

As measured at 30 mbar (He) on a TG/EGA instrument at JSC. Total volatile loss <1000° C is 14.3 wt.%.