

# Chemical Composition of New Lunar Soil Simulants

(wt%)

Element	A-11	A-12	A-14	A-15	A-16	A-17	FJS-1	Oshima Base	Kohyama Base
SiO <sub>2</sub>	42.20	46.30	48.10	46.80	45.00	43.20	49.14	49.13	47.49
TiO <sub>2</sub>	7.80	3.00	1.70	1.40	0.54	4.20	1.91	5.47	0.14
Al <sub>2</sub> O <sub>3</sub>	13.60	12.90	17.40	14.60	27.30	17.10	16.23	12.33	22.59
Cr <sub>2</sub> O <sub>3</sub>	0.30	0.34	0.23	0.36	0.33	0.33	0.00	0.04	0.02
FeO	15.30	15.10	10.40	14.30	5.10	12.20	8.30	6.02	7.80
Fe <sub>2</sub> O <sub>3</sub>	0.00	0.00	0.00	0.00	0.00	0.00	4.77	9.90	0.73
MnO	0.20	0.22	0.14	0.19	0.30	0.17	0.19	0.36	0.17
MgO	7.80	9.30	9.40	11.50	5.70	10.40	3.84	6.15	10.24
CaO	11.90	10.70	10.70	10.80	15.70	11.80	9.13	6.67	8.02
Na <sub>2</sub> O	0.47	0.54	0.70	0.39	0.46	0.40	2.75	2.16	1.65
K <sub>2</sub> O	0.16	0.31	0.55	0.21	0.17	0.13	1.01	0.32	0.07
P <sub>2</sub> O <sub>5</sub>	0.05	0.40	0.51	0.18	0.11	0.12	0.44	0.12	0.06
S	0.12	-	-	0.06	0.07	0.09	0.00	0.01	0.01
H <sub>2</sub> O	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.38	0.03
<b>Total</b>	<b>99.90</b>	<b>99.11</b>	<b>99.83</b>	<b>100.79</b>	<b>100.78</b>	<b>100.14</b>	<b>98.14</b>	<b>99.06</b>	<b>99.02</b>