

## **SUPPORTING INFORMATION**

**Title:** The Effect of Additives on the Burning Rate of the Silicon-Calcium Sulfate Pyrotechnic Delay Compositions

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**Table A1.** Major gaseous and solid reaction products of the Si-Al-CaSO<sub>4</sub> (5wt.% Al) composition predicted using EKV1 thermodynamics code under adiabatic conditions together with the predicted maximum adiabatic temperatures and energy outputs.

Fuel Content	S <sub>2</sub> (g)	SiS(g)	Si(s)	Al(s)	Al(l)	Al <sub>2</sub> O <sub>3</sub> (s)	CaS(s)	CaAl <sub>4</sub> O <sub>7</sub> (s)	Ca <sub>2</sub> SiO <sub>4</sub> (s)	CaAl <sub>2</sub> Si <sub>2</sub> O <sub>8</sub> (l)	Adiabatic Temperature, °C	Energy Output, kJ/g
10	15.1	0.0	0.0	0.0	0.0	0.0	2.4	57.3	24.8	0.3	1734.7	5.1
20	0.0	9.8	0.8	0.0	0.0	37.4	23.3	0.0	7.4	21.4	2039.3	6.0
30	0.0	4.0	13.9	0.0	0.0	37.9	25.5	0.2	0.0	18.4	1957.5	5.7
40	0.0	1.4	26.2	0.0	0.0	42.1	24.1	0.0	0.0	6.3	1766.4	5.1
50	0.0	0.0	36.3	0.0	2.0	40.3	21.3	0.0	0.0	0.0	1468.5	4.2
60	0.0	0.0	44.4	0.0	6.3	32.2	17.1	0.0	0.0	0.0	1411.6	3.9
70	0.0	0.0	52.4	0.0	10.6	24.2	12.8	0.0	0.0	0.0	1070.9	2.9
80	0.0	0.0	60.5	0.0	14.9	16.1	8.5	0.0	0.0	0.0	721.3	1.9
90	0.0	0.0	68.5	19.1	0.0	8.1	4.3	0.0	0.0	0.0	396.6	1.0