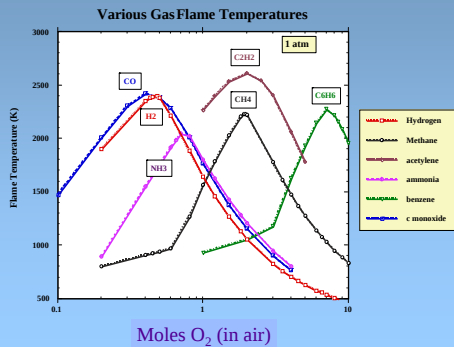


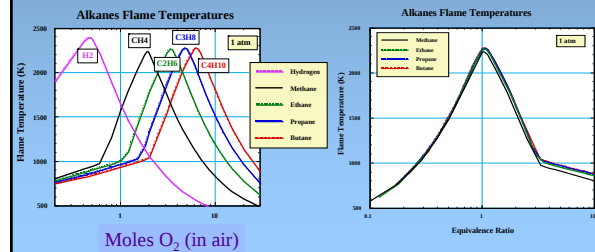
Calculated Adiabatic Flame Temperatures



Calculated Adiabatic Flame Temperatures

Alkanes have very similar heats of formation, therefore their flame temperatures are ~constant.

In terms of equivalence ratio, the combustion characteristics of alkanes are ~identical



JANAF Thermochemical Tables (Great Data Source!)

Ammonium Perchlorate (NH ₄ ClO ₄)				Cl ₂ H ₄ N ₂ O ₄ (cr)			
Enthalpy Reference Temperature = T ₀ = 298.15 K				Standard State Pressure = p° = 0.1 MPa			
T/K	C _p	S°	-[G° - H°(T ₀)]/T	H° - H°(T ₀)	Δ _f H°	Δ _f G°	Log K _f
0	0.	0.	INFINITE	-25.238	-277.778	-277.778	INFINITE
100	79.822	72.894	283.140	-21.025	-286.380	-253.321	116.651
200	107.236	137.419	195.200	-11.556	-292.995	-156.325	40.838
298.15	128.072	184.180	184.180	0.	-295.767	-88.607	15.534
300	128.449	184.973	184.182	0.237	-295.804	-87.322	15.204
400	148.899	224.699	189.462	14.095	-298.894	-17.615	2.350
500	169.860	260.052	200.101	29.875	-299.232	52.165	-5.450
513.150	171.828	264.472	201.094	32.215			
513.150	170.898	283.226	201.094	41.838			
600	187.568	312.708	215.652	58.234	-283.459	119.058	-10.443
700	217.818	344.084	231.823	79.003	-278.431	186.822	-13.941
800	238.070	375.062	247.845	101.797	-271.621	252.843	-18.509
900	258.456	404.312	263.616	126.626	-263.001	317.902	-18.451
1000	278.571	432.586	279.107	153.480	-252.567	381.904	-19.949
1100	299.569	460.142	294.317	182.408	-240.288	444.771	-21.190
1200	317.864	487.016	309.260	213.207	-228.169	506.437	-22.045
1300	333.816	513.111	323.943	245.919	-210.548	566.864	-22.777
1400	347.086	538.350	338.362	279.984	-193.645	626.039	-23.358
1500	357.732	562.874	352.510	315.248	-175.712	683.968	-23.818

Curve-Fits to JANAF C_p Data

