

A24 formulation Run using June 1988 Version of PEP,
 Case 1 of 1 26 May 2008 at 10:52:17.43 pm

CODE	WEIGHT	D-H	DENS	COMPOSITION
134 AMMONIUM NITRATE	68.000	-1090	0.06230	4H 2N 3O
63 ALUMINUM (PURE CRYSTALLINE)	17.000	0	0.09760	1AL
904 SULPHUR	4.000	0	0.07300	1S
1092 CHLOROPRENE (TENTATIVE)	11.000	-2000	0.05540	4C 5H 1CL

THE PROPELLANT DENSITY IS 0.06583 LB/CU-IN OR 1.8222 GM/CC
 THE TOTAL PROPELLANT WEIGHT IS 100.0000 GRAMS

NUMBER OF GRAM ATOMS OF EACH ELEMENT PRESENT IN INGREDIENTS

4.019142 H	0.496945 C	1.698981 N	2.548471 O
0.630096 AL	0.124743 S	0.124236 CL	

*****CHAMBER RESULTS FOLLOW *****

T(K)	T(F)	P(ATM)	P(PSI)	ENTHALPY	ENTROPY	CP/CV	GAS	RT/V
2688.	4378.	54.42	800.00	-96.12	223.12	1.1599	3.473	15.668

SPECIFIC HEAT (MOLAR) OF GAS AND TOTAL= 10.206 13.213
 NUMBER MOLS GAS AND CONDENSED= 3.4733 0.3150

0.99876 H2O	0.88051 H2	0.84923 N2	0.42326 CO
0.31495 Al2O3*	0.12282 HCl	0.07261 CO2	0.05016 H2S
0.02031 HS	0.01287 H	0.01036 SO2	0.00999 SO
9.39E-03 S2	3.77E-03 HO	3.74E-03 S3	2.25E-03 S
1.24E-03 Cl	9.77E-04 CSO	2.96E-04 NO	2.62E-04 S2O
1.07E-04 NH3	6.95E-05 AlHO2	5.87E-05 NS	3.46E-05 O
3.24E-05 AlOCl	3.17E-05 AlCl	1.73E-05 AlHO	1.60E-05 O2
9.23E-06 CHO	9.21E-06 S4	9.19E-06 AlCl2	8.65E-06 CNH
7.89E-06 SCl	5.83E-06 CS	5.30E-06 NH2	3.40E-06 CH2O
3.06E-06 CS2	1.87E-06 AlCl3	1.47E-06 CNHO	1.26E-06 S2Cl
1.24E-06 COCl	1.07E-06 HOCl		

THE MOLECULAR WEIGHT OF THE MIXTURE IS 26.397

*****EXHAUST RESULTS FOLLOW *****

T(K)	T(F)	P(ATM)	P(PSI)	ENTHALPY	ENTROPY	CP/CV	GAS	RT/V
1650.	2511.	1.00	14.70	-155.69	223.12	1.1903	3.444	0.290

SPECIFIC HEAT (MOLAR) OF GAS AND TOTAL= 9.498 11.388
 NUMBER MOLS GAS AND CONDENSED= 3.4439 0.3151

0.98033 H2O	0.91376 H2	0.84946 N2	0.37170 CO
0.31503 Al2O3&	0.12444 CO2	0.12414 HCl	0.05251 H2S
0.02087 S3	0.00315 S2	0.00151 HS	0.00073 CSO
7.20E-04 SO2	1.81E-04 SO	1.62E-04 H	2.09E-05 S
1.91E-05 S4	1.72E-05 Cl	1.29E-05 S2O	9.73E-06 NH3
8.04E-06 HO	1.01E-06 CS2		

THE MOLECULAR WEIGHT OF THE MIXTURE IS 26.603

*****PERFORMANCE: FROZEN ON FIRST LINE, SHIFTING ON SECOND LINE*****

IMPULSE	IS EX	T*	P*	C*	ISP*	OPT-EX	D-ISP	A*M	EX-T
222.2	1.1663	2481.	31.08	4495.3		8.00	404.8	0.17469	1520.
227.7	1.1543	2501.	31.21	4518.0	173.6	8.36	414.9	0.17557	1650.