

Eason-Pathania Paper																	MRP-227-A			Effective CGR da/dt (mm/s) with Margin	Ratio, E- P/MRP	Ratio, E- P/MRP, with margin		
Material	CW Fract	dose(dpa)	Operating Temp, deg C	K (MPa√m)	YSU (Mpa)	YSI (Mpa)	YSU(rcw) (Mpa)	YS(rcw,d) (Mpa)	m	YS(rcw,d,T) (Mpa)	C	Q(J/mol)	R (J/mol)	Tref deg C	u	v	Temp Adj	da/dt (mm/s)	K (ksi√in)				da/dt (in/hr)	da/dt (mm/s)
304	0.2	0.45	319	3	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	4.01E-09	2.73	3.35E-07	2.3634E-09	3.54363E-07	1.69	0.01
304	0.2	0.45	319	5	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	1.44E-08	4.55	1.2E-06	8.4753E-09	3.60475E-07	1.70	0.04
304	0.2	0.45	319	7	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	3.34E-08	6.37	2.79E-06	1.9655E-08	3.71655E-07	1.70	0.09
304	0.2	0.45	319	9	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	6.27E-08	8.19	5.22E-06	3.6841E-08	3.88841E-07	1.70	0.16
304	0.2	0.45	319	10	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	8.16E-08	9.1	6.79E-06	4.7944E-08	3.99944E-07	1.70	0.20
304	0.2	0.45	319	12	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	1.29E-07	10.92	1.07E-05	7.5628E-08	4.27628E-07	1.70	0.30
304	0.2	0.45	319	14	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	1.90E-07	12.74	1.58E-05	1.1119E-07	4.63186E-07	1.71	0.41
304	0.2	0.45	319	16	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	2.65E-07	14.56	2.2E-05	1.5525E-07	5.0725E-07	1.71	0.52
304	0.2	0.45	319	18	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	3.56E-07	16.38	2.95E-05	2.0841E-07	5.60407E-07	1.71	0.63
304	0.2	0.45	319	20	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	4.63E-07	18.2	3.84E-05	2.7121E-07	6.2321E-07	1.71	0.74
304	0.2	0.45	319	22	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	5.88E-07	20.02	4.88E-05	3.4418E-07	6.96182E-07	1.71	0.84
304	0.2	0.45	319	24	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	7.31E-07	21.84	6.06E-05	4.2782E-07	7.79818E-07	1.71	0.94
304	0.2	0.45	319	26	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	8.93E-07	23.66	7.41E-05	5.2259E-07	8.74594E-07	1.71	1.02
304	0.2	0.45	319	28	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	1.08E-06	25.48	8.91E-05	6.2896E-07	9.80964E-07	1.71	1.10
304	0.2	0.45	319	30	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	1.28E-06	27.3	0.000106	7.4737E-07	1.09937E-06	1.71	1.16
304	0.2	0.45	319	32	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	1.50E-06	29.12	0.000124	8.7823E-07	1.23023E-06	1.71	1.22
304	0.2	0.45	319	34	200	800	416	469.4881	0.000993	474.64397	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	1.75E-06	30.94	0.000145	1.0219E-06	1.37395E-06	1.71	1.27

Eason-Pathania Paper																	MRP-227-A			Effective CGR da/dt (mm/s) with Margin	Ratio, E- P/MRP	Ratio, E- P/MRP, with margin			
Material	CW Fract	dose(dpa)	Operating Temp, deg C	K (MPa√m)	YSU (Mpa)	YSI (Mpa)	YSU(rcw) (Mpa)	YS(rcw,d) (Mpa)	m	YS(rcw,d,T) (Mpa)	C	Q(J/mol)	R (J/mol)	Tref deg C	u	v	Temp Adj	da/dt (mm/s)					K (ksi√in)	da/dt (in/hr)	da/dt (mm/s)
304	0.2	0.45	283	3	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.26E-09	1.79E-07	2.73	3.35E-07	2.3634E-09	3.54363E-07	0.54	0.00
304	0.2	0.45	283	5	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	4.54E-09	6.44E-07	4.55	1.2E-06	8.4753E-09	3.60475E-07	0.54	0.01
304	0.2	0.45	283	7	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.06E-08	1.50E-06	6.37	2.79E-06	1.9655E-08	3.71655E-07	0.54	0.03
304	0.2	0.45	283	9	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.98E-08	2.81E-06	8.19	5.22E-06	3.6841E-08	3.88841E-07	0.54	0.05
304	0.2	0.45	283	10	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	2.58E-08	3.65E-06	9.1	6.79E-06	4.7944E-08	3.99944E-07	0.54	0.06
304	0.2	0.45	283	12	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	4.07E-08	5.77E-06	10.92	1.07E-05	7.5628E-08	4.27628E-07	0.54	0.10
304	0.2	0.45	283	14	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	5.99E-08	8.48E-06	12.74	1.58E-05	1.1119E-07	4.63186E-07	0.54	0.13
304	0.2	0.45	283	16	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	8.36E-08	1.19E-05	14.56	2.2E-05	1.5525E-07	5.0725E-07	0.54	0.16
304	0.2	0.45	283	18	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.12E-07	1.59E-05	16.38	2.95E-05	2.0841E-07	5.60407E-07	0.54	0.20
304	0.2	0.45	283	20	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.46E-07	2.07E-05	18.2	3.84E-05	2.7121E-07	6.2321E-07	0.54	0.23
304	0.2	0.45	283	22	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.86E-07	2.63E-05	20.02	4.88E-05	3.4418E-07	6.96182E-07	0.54	0.27
304	0.2	0.45	283	24	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	2.31E-07	3.27E-05	21.84	6.06E-05	4.2782E-07	7.79818E-07	0.54	0.30
304	0.2	0.45	283	26	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	2.82E-07	4.00E-05	23.66	7.41E-05	5.2259E-07	8.74594E-07	0.54	0.32
304	0.2	0.45	283	28	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	3.40E-07	4.81E-05	25.48	8.91E-05	6.2896E-07	9.80964E-07	0.54	0.35
304	0.2	0.45	283	30	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	4.04E-07	5.72E-05	27.3	0.000106	7.4737E-07	1.09937E-06	0.54	0.37
304	0.2	0.45	283	32	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	4.74E-07	6.72E-05	29.12	0.000124	8.7823E-07	1.23023E-06	0.54	0.39
304	0.2	0.45	283	34	200	800	416	469.4881	0.000993	491.9168	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	5.52E-07	7.83E-05	30.94	0.000145	1.0219E-06	1.37395E-06	0.54	0.40

282.7778

Eason-Pathania Paper																	MRP-227-A			Effective CGR da/dt (mm/s) with Margin	Ratio, E- P/MRP	Ratio, E- P/MRP, with margin		
Material	CW Fract	dose(dpa)	Operating Temp, deg C	K (MPa√m)	YSU (Mpa)	YSI (Mpa)	YSU(rcw) (Mpa)	YS(rcw,d) (Mpa)	m	YS(rcw,d,T) (Mpa)	C	Q(J/mol)	R (J/mol)	Tref deg C	u	v	Temp Adj	da/dt (mm/s)	K (ksi√in)				da/dt (in/hr)	da/dt (mm/s)
304	0.2	15	319	3	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	1.53E-08	2.73	3.35E-07	2.3634E-09	3.54363E-07	6.46	0.04
304	0.2	15	319	5	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	5.49E-08	4.55	1.2E-06	8.4753E-09	3.60475E-07	6.48	0.15
304	0.2	15	319	7	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	1.27E-07	6.37	2.79E-06	1.9655E-08	3.71655E-07	6.49	0.34
304	0.2	15	319	9	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	2.39E-07	8.19	5.22E-06	3.6841E-08	3.88841E-07	6.49	0.62
304	0.2	15	319	10	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	3.11E-07	9.1	6.79E-06	4.7944E-08	3.99944E-07	6.49	0.78
304	0.2	15	319	12	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	4.92E-07	10.92	1.07E-05	7.5628E-08	4.27628E-07	6.50	1.15
304	0.2	15	319	14	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	7.23E-07	12.74	1.58E-05	1.1119E-07	4.63186E-07	6.50	1.56
304	0.2	15	319	16	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	1.01E-06	14.56	2.2E-05	1.5525E-07	5.0725E-07	6.51	1.99
304	0.2	15	319	18	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	1.36E-06	16.38	2.95E-05	2.0841E-07	5.60407E-07	6.51	2.42
304	0.2	15	319	20	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	1.77E-06	18.2	3.84E-05	2.7121E-07	6.2321E-07	6.51	2.83
304	0.2	15	319	22	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	2.24E-06	20.02	4.88E-05	3.4418E-07	6.96182E-07	6.52	3.22
304	0.2	15	319	24	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	2.79E-06	21.84	6.06E-05	4.2782E-07	7.79818E-07	6.52	3.58
304	0.2	15	319	26	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	3.41E-06	23.66	7.41E-05	5.2259E-07	8.74594E-07	6.52	3.90
304	0.2	15	319	28	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	4.10E-06	25.48	8.91E-05	6.2896E-07	9.80964E-07	6.52	4.18
304	0.2	15	319	30	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	4.88E-06	27.3	0.000106	7.4737E-07	1.09937E-06	6.52	4.43
304	0.2	15	319	32	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	5.73E-06	29.12	0.000124	8.7823E-07	1.23023E-06	6.53	4.66
304	0.2	15	319	34	200	800	416	797.4126	0.000618	802.84979	2.90E-17	94,610	8.314	310	2.504	2.547	1.345265	6.67E-06	30.94	0.000145	1.0219E-06	1.37395E-06	6.53	4.85

Eason-Pathania Paper																	MRP-227-A			Effective CGR da/dt (mm/s) with Margin	Ratio, E-P/MRP	Ratio, E-P/MRP, with margin		
Material	CW Fract	dose(dpa)	Temp C	K (MPa√m)	YSU	YSI	YSU(rcw)	YS(rcw,d)	m	YS(rcw,d,T)	C	Q(J/mol)	R (J/mol)	Tref C	u	v	Temp Adj	da/dt (mm/s)	K (ksi√in)				da/dt (in/hr)	da/dt (mm/s)
304	0.2	15	283	3	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	4.66E-09	2.73	3.35E-07	2.3634E-09	3.54E-07	1.97	0.01
304	0.2	15	283	5	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.67E-08	4.55	1.20E-06	8.4753E-09	3.6E-07	1.98	0.05
304	0.2	15	283	7	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	3.89E-08	6.37	2.79E-06	1.9655E-08	3.72E-07	1.98	0.10
304	0.2	15	283	9	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	7.30E-08	8.19	5.22E-06	3.6841E-08	3.89E-07	1.98	0.19
304	0.2	15	283	10	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	9.50E-08	9.1	6.79E-06	4.7944E-08	4E-07	1.98	0.24
304	0.2	15	283	12	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.50E-07	10.92	1.07E-05	7.5628E-08	4.28E-07	1.98	0.35
304	0.2	15	283	14	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	2.21E-07	12.74	1.58E-05	1.1119E-07	4.63E-07	1.98	0.48
304	0.2	15	283	16	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	3.08E-07	14.56	2.20E-05	1.5525E-07	5.07E-07	1.98	0.61
304	0.2	15	283	18	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	4.14E-07	16.38	2.95E-05	2.0841E-07	5.6E-07	1.99	0.74
304	0.2	15	283	20	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	5.39E-07	18.2	3.84E-05	2.7121E-07	6.23E-07	1.99	0.86
304	0.2	15	283	22	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	6.84E-07	20.02	4.88E-05	3.4418E-07	6.96E-07	1.99	0.98
304	0.2	15	283	24	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	8.51E-07	21.84	6.06E-05	4.2782E-07	7.8E-07	1.99	1.09
304	0.2	15	283	26	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.04E-06	23.66	7.41E-05	5.2259E-07	8.75E-07	1.99	1.19
304	0.2	15	283	28	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.25E-06	25.48	8.91E-05	6.2896E-07	9.81E-07	1.99	1.28
304	0.2	15	283	30	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.49E-06	27.3	1.06E-04	7.4737E-07	1.1E-06	1.99	1.35
304	0.2	15	283	32	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.75E-06	29.12	1.24E-04	8.7823E-07	1.23E-06	1.99	1.42
304	0.2	15	283	34	200	800	416	797.4126	0.000618	820.90467	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	2.03E-06	30.94	1.45E-04	1.0219E-06	1.37E-06	1.99	1.48

Eason-Pathania Paper																		MRP-227-A			
Material	CW Fract	dose(dpa)	Temp C	K (MPa√m)	YSU	YSI	YSU(rcw)	YS(rcw,d)	m	YS(rcw,d,T)	C	Q(J/mol)	R (J/mol)	Tref C	u	v	Temp Adj	da/dt	K (ksi√in)	da/dt (in/hr)	da/dt (mm/s)
304	0.2	4	283	3	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	3.37E-09	2.73	3.35E-07	2.3634E-09
304	0.2	4	283	5	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.21E-08	4.55	1.2E-06	8.4753E-09
304	0.2	4	283	7	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	2.82E-08	6.37	2.79E-06	1.9655E-08
304	0.2	4	283	9	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	5.28E-08	8.19	5.22E-06	3.6841E-08
304	0.2	4	283	10	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	6.88E-08	9.1	6.79E-06	4.7944E-08
304	0.2	4	283	12	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.09E-07	10.92	1.07E-05	7.5628E-08
304	0.2	4	283	14	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.60E-07	12.74	1.58E-05	1.1119E-07
304	0.2	4	283	16	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	2.23E-07	14.56	2.2E-05	1.5525E-07
304	0.2	4	283	18	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	3.00E-07	16.38	2.95E-05	2.0841E-07
304	0.2	4	283	20	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	3.90E-07	18.2	3.84E-05	2.7121E-07
304	0.2	4	283	22	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	4.95E-07	20.02	4.88E-05	3.4418E-07
304	0.2	4	283	24	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	6.16E-07	21.84	6.06E-05	4.2782E-07
304	0.2	4	283	26	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	7.53E-07	23.66	7.41E-05	5.2259E-07
304	0.2	4	283	28	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	9.06E-07	25.48	8.91E-05	6.2896E-07
304	0.2	4	283	30	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.08E-06	27.3	0.000106	7.4737E-07
304	0.2	4	283	32	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.27E-06	29.12	0.000124	8.7823E-07
304	0.2	4	283	34	200	800	416	698.7787	0.000731	723.19013	2.90E-17	94,610	8.314	310	2.504	2.547	0.38776	1.47E-06	30.94	0.000145	1.0219E-06

Effective CGR da/dt (mm/s) with Margin	Ratio, E-P/MRP	Ratio, E-P/MRP, with margin
3.54E-07	1.43	0.01
3.6E-07	1.43	0.03
3.72E-07	1.43	0.08
3.89E-07	1.43	0.14
4E-07	1.43	0.17
4.28E-07	1.44	0.25
4.63E-07	1.44	0.34
5.07E-07	1.44	0.44
5.6E-07	1.44	0.53
6.23E-07	1.44	0.63
6.96E-07	1.44	0.71
7.8E-07	1.44	0.79
8.75E-07	1.44	0.86
9.81E-07	1.44	0.92
1.1E-06	1.44	0.98
1.23E-06	1.44	1.03
1.37E-06	1.44	1.07