

# J-BAK4

$n_d = 1.568830$

$n_e = 1.571250$

$v_d = 56.00$

$v_e = 55.73$

Glass code (d)	569560
Glass code (e)	571557

Spectral l.	Refractive idx
2.058	1.54426
1.970	1.54548
1.530	1.55104
1.129	1.55592
1.064	1.55680
t	1.55753
s	1.56033
A'	1.562249
r	1.564003
C	1.565751
C'	1.566241
He-Ne	1.566698
D	1.568740
d	1.568830
e	1.571250
F	1.575909
F'	1.576491
g	1.581480
h	1.586137
0.389	1.588993
i	1.594153

Coef. disp. form. (pwr ser.)	
A0	2.42114503E+00
A1	-8.99959341E-03
A2	-9.30006854E-05
A3	1.43071120E-02
A4	1.89993274E-04
A5	6.09602388E-06
A6	2.25737069E-07
A7	0.00000000E+00
A8	0.00000000E+00

Partial dispersion	
F-C	0.010158
F'-C'	0.010250
C-t	0.008223
C-A'	0.003502
d-C	0.003079
e-C	0.005499
g-d	0.012650
g-F	0.005571
h-g	0.004657
i-g	0.012673
C'-t	0.008713
e-C'	0.005009
F'-e	0.005241
i-F'	0.017662

Relative partial dispersion	
C-t/F-C	0.8095
C-A'/F-C	0.3448
d-C/F-C	0.3031
e-C/F-C	0.5413
g-d/F-C	1.2453
g-F/F-C	0.5484
h-g/F-C	0.4585
i-g/F-C	1.2476
C'-t/F'-C'	0.8500
e-C'/F'-C'	0.4887
F'-e/F'-C'	0.5113
i-F'/F'-C'	1.7231

Deviation of relative partial disp.	
$\Delta PdC$	0.0006
$\Delta PgF$	-0.0020

Internal CC (80%/5%)	
353/324	

Color Code (80%/5%)	
360/325	

CCI	
B	0.00
G	0.18
R	0.16

Thermal properties	
CTE(-30,70) [1E-7/°C]	70
CTE(100,300) [1E-7/°C]	84
Tg [°C]	580
At [°C]	635
Ht condct. [W/m·K]	0.993
Sp. heat [kJ/kg·K]	0.697
Ht diffus. [1E-6 m2/sec]	0.500

Chemical properties [class]	
Acid res. (surface)	1
Alkaline detergent res.	2
Climate resistance	1
Water res. (powder)	2
Acid res. (powder)	1

Mechanical properties	
Knoop hardness	509 (5)
Abrasion hardness	115
Young's mod. [GPa]	82.1
Shear mod. [GPa]	32.9
Poisson's ratio	0.246
Stress optical coef. [1E-5 nm/cm/Pa]	2.62

Internal trans. (10mm)	
$\lambda$ [nm]	$\tau$
280	0.00
290	0.00
300	0.00
310	0.00
320	0.02
330	0.16
340	0.47
350	0.75
360	0.89
370	0.951
380	0.974
390	0.985
400	0.991
420	0.995
440	0.996
460	0.997
480	0.997
500	0.998
550	0.999
600	0.998
650	0.998
700	0.998
800	0.998
900	0.998
1000	0.998
1200	0.999
1400	0.984
1600	0.990
1800	0.972
2000	0.955
2200	0.88
2400	0.83

Specific gravity	
2.84	

Relative $\Delta n / \Delta T$ [1E-6/°C]																
Temp. [°C]	1.083	t	s	A'	r	C	C'	He-Ne	d	e	F	F'	g	h	0.389	
80 to 90 (ref.)	2.8	2.9	2.9	3.1	3.2	3.3	3.4	3.4	3.6	3.7	4.1	4.1	4.6	5.0	5.2	
60 to 80 (ref.)	2.7	2.7	2.9	3.0	3.1	3.2	3.2	3.3	3.4	3.6	3.9	4.0	4.4	4.8	5.1	
40 to 60	2.6	2.6	2.7	2.8	2.9	3.1	3.1	3.1	3.3	3.4	3.8	3.8	4.2	4.6	4.9	
20 to 40	2.5	2.5	2.6	2.7	2.8	2.9	3.0	3.0	3.1	3.3	3.6	3.7	4.1	4.4	4.7	
0 to 20	2.4	2.4	2.5	2.6	2.7	2.8	2.9	2.9	3.0	3.2	3.5	3.5	3.9	4.3	4.5	
-20 to 0	2.4	2.4	2.5	2.6	2.7	2.8	2.8	2.9	3.0	3.1	3.4	3.5	3.9	4.2	4.4	
-40 to -20	2.4	2.4	2.5	2.6	2.7	2.8	2.9	2.9	3.0	3.1	3.4	3.5	3.8	4.2	4.4	
-60 to -40 (ref.)	2.5	2.5	2.6	2.7	2.8	2.9	3.0	3.0	3.1	3.2	3.5	3.6	3.9	4.3	4.5	
-70 to -60 (ref.)	2.7	2.7	2.8	2.9	3.0	3.1	3.1	3.1	3.3	3.4	3.7	3.7	4.1	4.4	4.6	

Absolute $\Delta n / \Delta T$ [1E-6/°C]																
Temp. [°C]	1.083	t	s	A'	r	C	C'	He-Ne	d	e	F	F'	g	h	0.389	
80 to 90	1.9	1.9	2.0	2.1	2.2	2.4	2.4	2.4	2.6	2.7	3.1	3.1	3.6	4.0	4.2	
60 to 80	1.7	1.7	1.8	1.9	2.0	2.1	2.2	2.2	2.4	2.5	2.9	2.9	3.3	3.7	4.0	
40 to 60	1.4	1.4	1.5	1.6	1.7	1.9	1.9	1.9	2.1	2.2	2.5	2.6	3.0	3.4	3.6	
20 to 40	1.1	1.1	1.3	1.4	1.5	1.6	1.6	1.6	1.8	1.9	2.2	2.3	2.7	3.0	3.3	
0 to 20	0.9	0.9	1.0	1.1	1.2	1.3	1.3	1.3	1.5	1.6	1.9	2.0	2.3	2.7	2.9	
-20 to 0	0.6	0.6	0.7	0.8	0.9	1.0	1.0	1.0	1.2	1.3	1.6	1.6	2.0	2.3	2.5	
-40 to -20	0.3	0.3	0.4	0.5	0.6	0.7	0.7	0.8	0.9	1.0	1.3	1.3	1.7	2.0	2.2	
-60 to -40	0.1	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.6	0.7	1.0	1.0	1.3	1.7	1.8	
-70 to -60	-0.2	-0.1	-0.1	0.0	0.1	0.2	0.2	0.2	0.3	0.5	0.7	0.8	1.1	1.4	1.6	

Coef. disp. form. (frac. eq.) (ref.)	
P1	1.32025131E-01
Q1	9.47904687E+01
P2	1.03988255E-02
Q2	3.68050059E-02
P3	3.11070528E-01
Q3	5.79597844E-03

Fitting error of disp. form. $\sigma$ [1E-6]		
	Visible	Infrared
Power ser. eq.	0.5	4.1
Frac. eq. (ref.)	0.5	5.1

Prod. Freq. (A to D)	C
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Similar glass type			
OHARA	S-BAL14	HOYA	BAC4
CDGM	H-BaK7	SCHOTT	N-BAK4

2019-4-1	Transmittance
2015-4-1	Color Code
2009-9-1	1st edition