

# J-BK7A

$n_d = 1.516800$

$n_e = 1.518723$

$v_d = 64.14$

$v_e = 63.91$

Glass code (d)	517641
Glass code (e)	519639

Spectral l.	Refractive idx
2.058	1.49403
1.970	1.49532
1.530	1.50110
1.129	1.50588
1.064	1.50669
t	1.50736
s	1.50982
A'	1.511444
r	1.512897
C	1.514324
C'	1.514720
He-Ne	1.515089
D	1.516728
d	1.516800
e	1.518723
F	1.522382
F'	1.522836
g	1.526699
h	1.530262
0.389	1.532427
i	1.536301

Coef. disp. form. (pwr ser.)	
A0	2.27110883E+00
A1	-9.38988354E-03
A2	-1.00277081E-04
A3	1.09572221E-02
A4	1.20210067E-04
A5	3.31079774E-06
A6	-1.48235581E-08
A7	0.00000000E+00
A8	0.00000000E+00

Partial dispersion	
F-C	0.008058
F'-C'	0.008116
C-t	0.006968
C-A'	0.002880
d-C	0.002476
e-C	0.004399
g-d	0.009899
g-F	0.004317
h-g	0.003563
i-g	0.009602
C'-t	0.007364
e-C'	0.004003
F'-e	0.004113
i-F'	0.013465

Relative partial dispersion	
C-t/F-C	0.8647
C-A'/F-C	0.3574
d-C/F-C	0.3073
e-C/F-C	0.5459
g-d/F-C	1.2285
g-F/F-C	0.5357
h-g/F-C	0.4422
i-g/F-C	1.1916
C'-t/F'-C'	0.9073
e-C'/F'-C'	0.4932
F'-e/F'-C'	0.5068
i-F'/F'-C'	1.6591

Deviation of relative partial disp.	
$\Delta PdC$	0.0011
$\Delta PgF$	-0.0010

Internal CC (80%/5%)	
321/280	

Color Code (80%/5%)	
325/280	

CCI	
B	0.00
G	0.04
R	0.02

Thermal properties	
CTE(-30,70) [1E-7/°C]	74
CTE(100,300) [1E-7/°C]	90
Tg [°C]	550
At [°C]	613
Ht condct. [W/m·K]	1.018
Sp. heat [kJ/kg·K]	0.682
Ht diffus. [1E-6 m2/sec]	0.593

Chemical properties [class]	
Acid res. (surface)	1
Alkaline detergent res.	1
Climate resistance	1
Water res. (powder)	3
Acid res. (powder)	1

Mechanical properties	
Knoop hardness	506 (5)
Abrasion hardness	96
Young's mod. [GPa]	79.0
Shear mod. [GPa]	32.4
Poisson's ratio	0.220
Stress optical coef. [1E-5 nm/cm/Pa]	3.04

Internal trans. (10mm)	
$\lambda$ [nm]	$\tau$
280	0.08
290	0.15
300	0.36
310	0.61
320	0.80
330	0.903
340	0.954
350	0.977
360	0.988
370	0.993
380	0.995
390	0.997
400	0.998
420	0.999
440	0.998
460	0.998
480	0.999
500	0.999
550	0.999
600	0.999
650	0.998
700	0.998
800	0.998
900	0.997
1000	0.997
1200	0.997
1400	0.977
1600	0.987
1800	0.960
2000	0.921
2200	0.81
2400	0.75

Specific gravity	
2.51	

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.)	1.9	2.0	2.1	2.2	2.3	2.3	2.4	2.4	2.5	2.7	2.9	3.0	3.3	3.6	3.8	
60 to 80 (ref.)	1.9	2.0	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.9	2.9	3.2	3.5	3.7	
40 to 60	1.9	1.9	2.0	2.1	2.2	2.3	2.3	2.3	2.4	2.6	2.8	2.9	3.1	3.4	3.6	
20 to 40	1.9	1.9	2.0	2.1	2.2	2.2	2.3	2.3	2.4	2.5	2.8	2.8	3.1	3.3	3.5	
0 to 20	1.9	2.0	2.1	2.1	2.2	2.3	2.3	2.3	2.4	2.6	2.8	2.8	3.1	3.3	3.5	
-20 to 0	2.0	2.0	2.1	2.2	2.3	2.3	2.4	2.4	2.5	2.6	2.8	2.9	3.1	3.3	3.5	
-40 to -20	2.1	2.2	2.3	2.3	2.4	2.5	2.5	2.5	2.6	2.7	3.0	3.0	3.2	3.4	3.6	
-60 to -40 (ref.)	2.4	2.4	2.5	2.5	2.6	2.7	2.7	2.7	2.8	2.9	3.2	3.2	3.4	3.6	3.8	
-70 to -60 (ref.)	2.6	2.6	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.4	3.4	3.6	3.8	4.0	

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	1.0	1.1	1.2	1.2	1.3	1.4	1.4	1.5	1.6	1.7	2.0	2.0	2.3	2.6	2.8	
60 to 80	0.9	0.9	1.0	1.1	1.2	1.3	1.3	1.3	1.4	1.6	1.8	1.9	2.1	2.4	2.6	
40 to 60	0.7	0.8	0.9	0.9	1.0	1.1	1.1	1.1	1.3	1.4	1.7	1.7	1.9	2.2	2.4	
20 to 40	0.6	0.6	0.7	0.8	0.9	0.9	1.0	1.0	1.1	1.2	1.5	1.5	1.7	2.0	2.2	
0 to 20	0.4	0.5	0.6	0.6	0.7	0.8	0.8	0.8	0.9	1.0	1.3	1.3	1.5	1.8	1.9	
-20 to 0	0.3	0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.8	1.1	1.1	1.3	1.5	1.7	
-40 to -20	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.7	0.9	0.9	1.1	1.3	1.5	
-60 to -40	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.7	0.9	1.1	1.3	
-70 to -60	-0.2	-0.1	-0.1	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.5	0.6	0.7	0.9	1.1	

Coef. disp. form. (frac. eq.) (ref.)	
P1	1.32131192E-01
Q1	8.52147898E+01
P2	3.48697207E-02
Q2	1.83584959E-02
P3	2.62754051E-01
Q3	4.39929773E-03

Fitting error of disp. form. $\sigma$ [1E-6]		
	Visible	Infrared
Power ser. eq.	0.4	3.8
Frac. eq. (ref.)	0.4	3.9

Prod. Freq. (A to D)	A
----------------------	---

Similar glass type			
OHARA	S-BSL7	HOYA	BSC7
CDGM	H-K9L	SCHOTT	N-BK7

2019-4-1	Transmittance
2015-4-1	1st edition