

# J-SF4

$n_d = 1.755200$

$n_e = 1.761659$

$v_d = 27.57$

$v_e = 27.35$

Glass code (d)	755276
Glass code (e)	762274

Spectral l.	Refractive idx
2.058	1.70897
1.970	1.71047
1.530	1.71783
1.129	1.72563
1.064	1.72725
t	1.72866
s	1.73450
A'	1.738835
r	1.743000
C	1.747305
C'	1.748535
He-Ne	1.749691
D	1.754963
d	1.755200
e	1.761659
F	1.774696
F'	1.776381
g	1.791384
h	1.806389
0.389	1.816164
i	-

Coef. disp. form. (pwr ser.)	
A0	2.96384442E+00
A1	-1.22384397E-02
A2	0.00000000E+00
A3	3.57090539E-02
A4	2.72484712E-03
A5	-4.37315556E-04
A6	1.03210102E-04
A7	-1.04209554E-05
A8	5.02488681E-07

Partial dispersion	
F-C	0.027391
F'-C'	0.027846
C-t	0.018649
C-A'	0.008470
d-C	0.007895
e-C	0.014354
g-d	0.036184
g-F	0.016688
h-g	0.015005
i-g	-
C'-t	0.019879
e-C'	0.013124
F'-e	0.014722
i-F'	-

Relative partial dispersion	
C-t/F-C	0.6808
C-A'/F-C	0.3092
d-C/F-C	0.2882
e-C/F-C	0.5240
g-d/F-C	1.3210
g-F/F-C	0.6093
h-g/F-C	0.5478
i-g/F-C	-
C'-t/F'-C'	0.7139
e-C'/F'-C'	0.4713
F'-e/F'-C'	0.5287
i-F'/F'-C'	-

Deviation of relative partial disp.	
$\Delta PdC$	-0.0014
$\Delta PgF$	0.0112

Internal CC (80%/5%)	
394/362	

Color Code (80%/5%)	
420/365	

CCI	
B	0.00
G	2.68
R	2.74

Thermal properties	
CTE(-30,70) [1E-7/°C]	84
CTE(100,300) [1E-7/°C]	99
Tg [°C]	617
At [°C]	648
Ht condct. [W/m·K]	1.040
Sp. heat [kJ/kg·K]	0.671
Ht diffus. [1E-6 m2/sec]	0.480

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

Mechanical properties	
Knoop hardness	504 (5)
Abrasion hardness	145
Young's mod. [GPa]	91.2
Shear mod. [GPa]	36.5
Poisson's ratio	0.251
Stress optical coef. [1E-5 nm/cm/Pa]	2.75

Internal trans. (10mm)	
$\lambda$ [nm]	$\tau$
280	0.00
290	0.00
300	0.00
310	0.00
320	0.00
330	0.00
340	0.00
350	0.00
360	0.03
370	0.20
380	0.51
390	0.75
400	0.86
420	0.941
440	0.964
460	0.975
480	0.982
500	0.987
550	0.995
600	0.996
650	0.995
700	0.996
800	0.996
900	0.996
1000	0.996
1200	0.997
1400	0.997
1600	0.988
1800	0.971
2000	0.960
2200	0.922
2400	0.89

Specific gravity	
3.22	

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.)	0.7	0.7	1.0	1.3	1.7	2.0	2.1	2.2	2.6	3.2	4.5	4.7	6.5	8.8	10.5	
60 to 80 (ref.)	0.6	0.6	0.9	1.2	1.5	1.8	1.9	2.0	2.5	3.0	4.2	4.4	6.2	8.4	10.0	
40 to 60	0.4	0.5	0.7	1.0	1.3	1.6	1.7	1.8	2.2	2.7	3.9	4.1	5.8	7.8	9.3	
20 to 40	0.3	0.4	0.6	0.9	1.2	1.5	1.6	1.6	2.0	2.5	3.6	3.8	5.4	7.3	8.7	
0 to 20	0.3	0.3	0.5	0.8	1.1	1.4	1.4	1.5	1.9	2.3	3.4	3.5	5.0	6.8	8.1	
-20 to 0	0.2	0.3	0.5	0.8	1.0	1.3	1.4	1.4	1.8	2.2	3.2	3.3	4.7	6.4	7.6	
-40 to -20	0.3	0.3	0.5	0.8	1.0	1.3	1.4	1.4	1.8	2.2	3.1	3.2	4.5	6.1	7.1	
-60 to -40 (ref.)	0.4	0.5	0.7	0.9	1.1	1.4	1.4	1.5	1.8	2.2	3.1	3.2	4.4	5.8	6.8	
-70 to -60 (ref.)	0.6	0.7	0.9	1.1	1.3	1.5	1.6	1.7	2.0	2.3	3.1	3.2	4.4	5.7	6.6	

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	-0.4	-0.3	0.0	0.3	0.6	0.9	1.0	1.1	1.6	2.1	3.4	3.6	5.4	7.7	9.3	
60 to 80	-0.6	-0.6	-0.3	0.0	0.3	0.7	0.7	0.8	1.3	1.8	3.0	3.2	5.0	7.1	8.7	
40 to 60	-0.9	-0.8	-0.6	-0.3	0.0	0.3	0.4	0.5	0.9	1.4	2.5	2.7	4.4	6.4	7.9	
20 to 40	-1.2	-1.1	-0.9	-0.6	-0.3	0.0	0.0	0.1	0.5	1.0	2.1	2.2	3.8	5.7	7.1	
0 to 20	-1.5	-1.4	-1.2	-0.9	-0.7	-0.4	-0.3	-0.2	0.1	0.6	1.6	1.7	3.2	5.0	6.2	
-20 to 0	-1.7	-1.7	-1.5	-1.2	-1.0	-0.7	-0.7	-0.6	-0.2	0.2	1.1	1.3	2.6	4.3	5.4	
-40 to -20	-2.0	-2.0	-1.8	-1.6	-1.3	-1.1	-1.0	-0.9	-0.6	-0.2	0.6	0.8	2.1	3.6	4.6	
-60 to -40	-2.3	-2.3	-2.1	-1.9	-1.7	-1.4	-1.4	-1.3	-1.0	-0.6	0.2	0.3	1.5	2.9	3.8	
-70 to -60	-2.5	-2.5	-2.3	-2.1	-1.9	-1.7	-1.6	-1.6	-1.3	-1.0	-0.2	-0.1	1.0	2.3	3.2	

Coef. disp. form. (frac. eq.) (ref.)	
P1	1.10339135E-01
Q1	8.00300370E+01
P2	2.34104129E-02
Q2	6.14797788E-02
P3	3.71956970E-01
Q3	8.66099124E-03

Fitting error of disp. form. $\sigma$ [1E-6]		
	Visible	Infrared
Power ser. eq.	0.8	5.3
Frac. eq. (ref.)	2.5	10.1

Prod. Freq. (A to D)	B
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Similar glass type			
OHARA	S-TIH4	HOYA	E-FD4
CDGM	H-ZF6	SCHOTT	N-SF4

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