BSL 7Y

Code(d) **516643**
Code(e) **518641**

Refractive Index	n_d	**1.51633**	Abbe Number	ν_d	**64.24**	Dispersion	n_F-n_C	**0.008037**
		1.516330						
Refractive Index	n_e	1.518248	Abbe Number	ν_e	64.04	Dispersion	n_F-$n_{C'}$	0.008092

Refractive Indices		
λ(μm)		
n_{2325}	2.32542	1.48829
n_{1970}	1.97009	1.49417
n_{1530}	1.52958	1.50028
n_{1129}	1.12864	1.50528
n_t	1.01398	1.50681
n_s	0.85211	1.50933
$n_{A'}$	0.76819	1.51096
n_r	0.70652	1.51242
n_C	0.65627	1.51386
$n_{C'}$	0.64385	1.51425
$n_{He\text{-}Ne}$	0.6328	1.51462
n_D	0.58929	1.51626
n_d	0.58756	1.51633
n_e	0.54607	1.51825
n_F	0.48613	1.52189
$n_{F'}$	0.47999	1.52234
$n_{He\text{-}Cd}$	0.44157	1.52562
n_g	0.435835	1.52619
n_h	0.404656	1.52973
n_i	0.365015	1.53574
n_{334}	0.334148	1.54218
n_{326}	0.326106	1.54422

Constants of Dispersion Formula	
A_1	1.13329383E+00
A_2	1.36897201E-01
A_3	7.03456004E-01
B_1	6.69407868E-03
B_2	2.37391760E-02
B_3	7.07030316E+01

Chemical Properties	
Water Resistance(Powder) Group RW(P)	2
Acid Resistance(Powder) Group RA(P)	1
Weathering Resistance(Surface) Group W(S)	1
Acid Resistance(Surface) Group SR	1.0
Phosphate Resistance PR	1.0

Mechanical Properties		
Young's Modulus E (GPa)	81.1	
Rigidity Modulus G (GPa)	33.6	
Poisson's Ratio σ	0.207	
Knoop Hardness Hk[Class]	590	6
Abrasion Aa	91	

Partial Dispersions	
n_C-n_t	0.007046
n_C-$n_{A'}$	0.002891
n_d-n_C	0.002475
n_e-n_C	0.004393
n_g-n_d	0.009857
n_g-n_F	0.004295
n_h-n_g	0.003543
n_i-n_g	0.009552
n_C-n_t	0.007443
n_e-$n_{C'}$	0.003996
$n_{F'}$-n_e	0.004096
n_i-$n_{F'}$	0.013395

Relative Partial Dispersions	
$\theta_{C,t}$	0.8767
$\theta_{C,A'}$	0.3597
$\theta_{d,C}$	0.3080
$\theta_{e,C}$	0.5466
$\theta_{g,d}$	1.2265
$\theta_{g,F}$	0.5344
$\theta_{h,g}$	0.4408
$\theta_{i,g}$	1.1885
$\theta'_{C',t}$	0.9198
$\theta'_{e,C'}$	0.4938
$\theta'_{F',e}$	0.5062
$\theta'_{i,F'}$	1.6553

※Refractive Indices of the wavelength nm can be calculated from 326 to 1129 nm by this constant.
Use the appended list of the constants to calculate 1129-2325nm.

Deviation of Relative Dispersions Δθfrom "Normal"	
$\Delta\theta_{C,t}$	0.0286
$\Delta\theta_{C,A'}$	0.0059
$\Delta\theta_{g,d}$	-0.0048
$\Delta\theta_{g,F}$	-0.0031
$\Delta\theta_{i,g}$	0.0014

Thermal Properties		
Strain Point StP (℃)		527
Annealing Point AP (℃)		559
Transformation Temperature Tg (℃)		580 *
Yield Point At (℃)		640 *
Softening Point SP (℃)		714
Expansion Coefficients α (10^{-7} K^{-1})	(-30~+70℃)	71 *
	(+100~+300℃)	86 *
Thermal Conductivity λ W/(m·K)		1.18

Coloring			
λ_{80}	315	λ_5	290
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	311	$\lambda_{0.05}$	290

CCI		
B	G	R
0.00	0.00	0.00

Internal Transmittance		
λ(nm)	τ 10mm	τ 25mm
240		
250		
260		
270		
280		
290	0.06	
300	0.43	0.12
310	0.78	0.54
320	0.932	0.83
330	0.978	0.945
340	0.991	0.978
350	0.996	0.990
360	0.997	0.992
365	0.998	0.995
370	0.998	0.996
380	0.998	0.996
390	0.999	0.997
400	0.999	0.998
420	0.999	0.998
440	0.999	0.998
460	0.999	0.998
480	0.999	0.998
500	0.999	0.999
550	0.999	0.999
600	0.999	0.998
650	0.999	0.998
700	0.999	0.999
800	0.999	0.999
900	0.999	0.997
1000	0.997	0.993
1200	0.997	0.993
1400	0.969	0.924
1600	0.990	0.975
1800	0.981	0.952
2000	0.962	0.908
2200	0.86	0.68
2400	0.80	0.58

Other Properties	
Photoelastic Constant β nm/(cm·10^5Pa)	
Specific Gravity d	2.50
Remarks	

Temperature Coefficients of Refractive Index								
Range of Temperature (℃)	Δn/ΔT relative ($10^{-6}K^{-1}$)							
	t	C'	He-Ne	D	e	F'	g	i
-40~-20	2.3	2.6	2.6	2.7	2.8	3.0	3.2	3.8
-20~ 0	2.4	2.7	2.7	2.8	2.9	3.2	3.4	4.0
0~20	2.5	2.8	2.9	3.0	3.1	3.3	3.6	4.2
20~40	2.6	3.0	3.0	3.1	3.2	3.5	3.7	4.4
40~60	2.8	3.1	3.1	3.2	3.3	3.6	3.9	4.6
60~80	2.9	3.2	3.2	3.3	3.4	3.7	4.0	4.8

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※The name of the glass type is the model number assigned based on the main components of the composition: large, medium, small refractive index and serial number.