

S-BAL35R

Code(d) **589610**

Code(e) **591607**

Refractive Index n_d	1.58913 1.589130	Abbe Number ν_d	60.95	Dispersion n_F-n_C	0.009665
Refractive Index n_e	1.591435	Abbe Number ν_e	60.71	Dispersion $n_F-n_{C'}$	0.009742

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.55945
n_{1970}	1.97009	1.56522
n_{1530}	1.52958	1.57129
n_{1129}	1.12864	1.57645
n_t	1.01398	1.57810
n_s	0.85211	1.58091
$n_{A'}$	0.76819	1.58279
n_r	0.70652	1.58449
n_C	0.65627	1.58618
$n_{C'}$	0.64385	1.58665
$n_{\text{He-Ne}}$	0.6328	1.58709
n_D	0.58929	1.58904
n_d	0.58756	1.58913
n_e	0.54607	1.59144
n_F	0.48613	1.59584
$n_{F'}$	0.47999	1.59639
$n_{\text{He-Cd}}$	0.44157	1.60038
n_g	0.435835	1.60108
n_h	0.404656	1.60542
n_i	0.365015	

Constants of Dispersion Formula	
A_1	1.31152698E+00
A_2	1.75893826E-01
A_3	1.06786914E+00
B_1	7.06993329E-03
B_2	2.54908228E-02
B_3	1.04810750E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	3
Acid Resistance(Surface) Group SR	4.3
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E (GPa)	83.0
Rigidity Modulus G (GPa)	33.1
Poisson's Ratio σ	0.255
Knoop Hardness Hk(Class)	590 6
Abrasion Aa	113

Partial Dispersions	
n_C-n_t	0.008082
$n_C-n_{A'}$	0.003392
n_d-n_C	0.002950
n_e-n_C	0.005255
n_g-n_d	0.011947
n_g-n_F	0.005232
n_h-n_g	0.004339
n_i-n_g	
n_C-n_t	0.008553
$n_e-n_{C'}$	0.004784
$n_{F'}-n_e$	0.004958
$n_i-n_{F'}$	

Relative Partial Dispersions	
$\theta_{C,t}$	0.8362
$\theta_{C,A'}$	0.3510
$\theta_{d,C}$	0.3052
$\theta_{e,C}$	0.5437
$\theta_{g,d}$	1.2361
$\theta_{g,F}$	0.5413
$\theta_{h,g}$	0.4489
$\theta_{i,g}$	
$\theta'_{C,t}$	0.8780
$\theta'_{e,C'}$	0.4911
$\theta'_{F',e}$	0.5089
$\theta'_{i,F'}$	

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0035
$\Delta\theta_{C,A'}$	0.0012
$\Delta\theta_{g,d}$	-0.0020
$\Delta\theta_{g,F}$	-0.0016
$\Delta\theta_{i,g}$	

Thermal Properties	
Strain Point StP (°C)	617
Annealing Point AP (°C)	648
Transformation Temperature Tg (°C)	668 *
Yield Point At (°C)	719 *
Softening Point SP (°C)	765
Expansion Coefficients (-30~+70°C)	57 *
α (10 ⁻⁷ K ⁻¹) (+100~+300°C)	67 *
Thermal Conductivity λ W/(m·K)	0.914

Coloring			
λ_{80}	450	λ_5	385
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	436	$\lambda_{0.05}$	382

CCI		
B	G	R
0.00	12.78	13.34

Internal Transmittance	
$\lambda(\text{nm})$	τ 10mm
280	
290	
300	
310	
320	
330	
340	
350	
360	
370	
380	0.03
390	0.13
400	0.30
420	0.65
440	0.83
460	0.914
480	0.944
500	0.958
550	0.973
600	0.980
650	0.985
700	0.991
800	0.996
900	0.997
1000	0.998
1200	0.998
1400	0.988
1600	0.996
1800	0.989
2000	0.977
2200	0.918
2400	0.81

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	$\Delta n / \Delta T$ relative (10 ⁻⁶ K ⁻¹)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	3.1	3.5	3.5	3.6	3.7	4.0	4.2
-20~ 0	3.1	3.4	3.5	3.6	3.7	4.0	4.3
0~20	3.1	3.5	3.5	3.6	3.7	4.0	4.3
20~40	3.2	3.5	3.5	3.7	3.8	4.1	4.4
40~60	3.2	3.6	3.6	3.8	3.9	4.2	4.5
60~80	3.4	3.8	3.8	3.9	4.1	4.4	4.7

Other Properties	
Photoelastic Constant β nm/(cm·10 ⁵ Pa)	2.19
Specific Gravity d	3.30
Remarks	

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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.