S-BAL35

Code(d) **589612**
Code(e) **591609**

Refractive Index	n_d	**1.58913**	Abbe Number	ν_d	**61.14**	Dispersion	n_F-n_C	**0.009636**
		1.589130						
Refractive Index	n_e	1.591429	Abbe Number	ν_e	60.88	Dispersion	n_F-$n_{C'}$	0.009714

Refractive Indices		
λ(μm)		
n_{2325}	2.32542	1.55959
n_{1970}	1.97009	1.56531
n_{1530}	1.52958	1.57134
n_{1129}	1.12864	1.57648
n_t	1.01398	1.57813
n_s	0.85211	1.58093
$n_{A'}$	0.76819	1.58280
n_r	0.70652	1.58450
n_C	0.65627	1.58619
$n_{C'}$	0.64385	1.58666
$n_{He\text{-}Ne}$	0.6328	1.58710
n_D	0.58929	1.58904
n_d	0.58756	1.58913
n_e	0.54607	1.59143
n_F	0.48613	1.59582
$n_{F'}$	0.47999	1.59637
$n_{He\text{-}Cd}$	0.44157	1.60034
n_g	0.435835	1.60103
n_h	0.404656	1.60535
n_i	0.365015	1.61268

Constants of Dispersion Formula	
A_1	9.41357273E-01
A_2	5.46174895E-01
A_3	1.16168917E+00
B_1	1.40333996E-02
B_2	9.06635683E-04
B_3	1.14163758E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	2
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group W(S)	2～3
Acid Resistance(Surface) Group SR	4.2
Phosphate Resistance PR	1.0

Mechanical Properties		
Young's Modulus E (10^8N/m^2)	832	
Rigidity Modulus G (10^8N/m^2)	333	
Poisson's Ratio σ	0.250	
Knoop Hardness Hk[Class]	590	6
Abrasion Aa	116	
Photoelastic Constant β nm/(cm·10^5Pa)		2.15

Partial Dispersions	
n_C-n_t	0.008061
n_C-$n_{A'}$	0.003384
n_d-n_C	0.002942
n_e-n_C	0.005241
n_g-n_d	0.011904
n_g-n_F	0.005210
n_h-n_g	0.004314
n_i-n_g	0.011647
$n_{C'}$-n_t	0.008530
n_e-$n_{C'}$	0.004772
$n_{F'}$-n_e	0.004942
n_i-$n_{F'}$	0.016310

Relative Partial Dispersions	
$\theta_{C,t}$	0.8366
$\theta_{C,A'}$	0.3512
$\theta_{d,C}$	0.3053
$\theta_{e,C}$	0.5439
$\theta_{g,d}$	1.2354
$\theta_{g,F}$	0.5407
$\theta_{h,g}$	0.4477
$\theta_{i,g}$	1.2087
$\theta'_{C',t}$	0.8781
$\theta'_{e,C'}$	0.4912
$\theta'_{F',e}$	0.5088
$\theta'_{i,F'}$	1.6790

Deviation of Relative Dispersions Δθfrom "Normal"	
$\Delta\theta_{C,t}$	0.0030
$\Delta\theta_{C,A'}$	0.0012
$\Delta\theta_{g,d}$	-0.0024
$\Delta\theta_{g,F}$	-0.0018
$\Delta\theta_{i,g}$	-0.0044

Thermal Properties		
Strain Point StP (℃)		619
Annealing Point AP (℃)		646
Transformation Temperature Tg (℃)		669
Yield Point At (℃)		709
Softening Point SP (℃)		768
Expansion Coefficients α (10^{-7}/℃)	(-30~+70℃)	57
	(+100~+300℃)	67
Thermal Conductivity λ W/(m·K)		0.915

Coloring			
λ_{80}	345	λ_5	300
λ_{70}			

Internal transmission			
$\lambda_{0.80}$	339	$\lambda_{0.05}$	303

CCI		
B	G	R
0.00	0.17	0.15

Internal Transmittance	
λ(nm)	τ 10mm
280	
290	
300	0.01
310	0.16
320	0.43
330	0.67
340	0.82
350	0.904
360	0.949
370	0.972
380	0.983
390	0.989
400	0.993
420	0.995
440	0.995
460	0.996
480	0.997
500	0.998
550	0.999
600	0.998
650	0.998
700	0.999
800	0.999
900	0.998
1000	0.998
1200	0.998
1400	0.984
1600	0.994
1800	0.987
2000	0.972
2200	0.89
2400	0.80

Temperature Coefficients of Refractive Index							
Range of Temperature (℃)	Δn/ΔT relative (10^{-6}/℃)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	2.9	3.1	3.1	3.3	3.4	3.6	3.9
-20~ 0	3.0	3.3	3.3	3.4	3.5	3.8	4.1
0~20	3.2	3.5	3.5	3.6	3.7	4.0	4.3
20~40	3.3	3.6	3.6	3.8	3.9	4.2	4.5
40~60	3.5	3.8	3.8	3.9	4.1	4.4	4.7
60~80	3.6	3.9	4.0	4.1	4.2	4.5	4.9

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.31
Remarks	

OHARA 17-04

※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.