

S-BAL41

Code(d) **564607**

Code(e) **566604**

Refractive Index n_d	1.56384 1.563839	Abbe Number v_d	60.7 60.67	Dispersion n_F-n_C	0.00929 0.009294
Refractive Index n_e	1.566056	Abbe Number v_e	60.42	Dispersion n_F-n_C'	0.009369

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.32542	1.53530
n_{1970}	1.97009	1.54083
n_{1530}	1.52958	1.54667
n_{1129}	1.12864	1.55164
n_t	1.01398	1.55322
n_s	0.85211	1.55593
$n_{A'}$	0.76819	1.55774
n_r	0.70652	1.55938
n_C	0.65627	1.56100
$n_{C'}$	0.64385	1.56145
$n_{\text{He-Ne}}$	0.6328	1.56188
n_D	0.58929	1.56376
n_d	0.58756	1.56384
n_e	0.54607	1.56606
n_F	0.48613	1.57029
$n_{F'}$	0.47999	1.57082
$n_{\text{He-Cd}}$	0.44157	1.57465
n_g	0.435835	1.57532
n_h	0.404656	1.57947
n_i	0.365015	1.58652

Partial Dispersions	
n_C-n_t	0.007779
$n_C-n_{A'}$	0.003265
n_d-n_C	0.002838
n_e-n_C	0.005055
n_g-n_d	0.011477
n_g-n_F	0.005021
n_h-n_g	0.004155
n_i-n_g	0.011208
n_C-n_t	0.008231
$n_e-n_{C'}$	0.004603
$n_{F'-n_e}$	0.004766
$n_i-n_{F'}$	0.015702

Relative Partial Dispersions	
$\theta_{C,t}$	0.8370
$\theta_{C,A'}$	0.3513
$\theta_{d,C}$	0.3054
$\theta_{e,C}$	0.5439
$\theta_{g,d}$	1.2349
$\theta_{g,F}$	0.5402
$\theta_{h,g}$	0.4471
$\theta_{i,g}$	1.2059
$\theta'_{C,t}$	0.8785
$\theta'_{e,C'}$	0.4913
$\theta'_{F',e}$	0.5087
$\theta'_{i,F}$	1.6760

Thermal Properties	
Strain Point StP (°C)	486
Annealing Point AP (°C)	521
Transformation Temperature Tg (°C)	541
Yield Point At (°C)	577
Softening Point SP (°C)	644
Expansion Coefficients (-30~+70°C)	75
α (10 ⁻⁷ /°C) (+100~+300°C)	91
Thermal Conductivity k (W/m·K)	1.043

Coloring			
λ_{80}	35	λ_5	30
λ_{70}			

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	0.05
310	0.25
320	0.51
330	0.72
340	0.85
350	0.925
360	0.960
370	0.978
380	0.985
390	0.990
400	0.993
420	0.994
440	0.994
460	0.995
480	0.997
500	0.998
550	0.999
600	0.998
650	0.997
700	0.998
800	0.998
900	0.998
1000	0.997
1200	0.997
1400	0.987
1600	0.993
1800	0.984
2000	0.971
2200	0.908
2400	0.83

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0057
$\Delta\theta_{C,A'}$	0.0019
$\Delta\theta_{g,d}$	-0.0038
$\Delta\theta_{g,F}$	-0.0031
$\Delta\theta_{i,g}$	-0.0111

Mechanical Properties	
Young's Modulus E (10 ⁸ N/m ²)	890
Rigidity Modulus G (10 ⁸ N/m ²)	358
Poisson's Ratio σ	0.242
Knoop Hardness Hk[Class]	600 6
Abrasion Aa	122
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	2.32

Constants of Dispersion Formula	
A ₁	1.24344200E+00
A ₂	1.66301104E-01
A ₃	1.10586114E+00
B ₁	1.16396708E-02
B ₂	-8.90464938E-03
B ₃	1.14111220E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	3
Acid Resistance(Powder) Group RA(P)	4
Weathering Resistance(Surface) Group W(S)	2 ~ 3
Acid Resistance(Surface) Group SR	51.2
Phosphate Resistance PR	3.0

Other Properties	
Bubble Quality Group B	
Specific Gravity d	2.78
Remarks	

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	dn/dt relative (10 ⁻⁶ /°C)						
	t	C'	He-Ne	D	e	F'	g
-40~-20	2.1	2.3	2.3	2.4	2.5	2.8	3.0
-20~0	2.1	2.3	2.3	2.4	2.6	2.9	3.2
0~20	2.1	2.4	2.4	2.5	2.7	3.0	3.3
20~40	2.1	2.5	2.5	2.6	2.7	3.1	3.4
40~60	2.2	2.5	2.5	2.7	2.8	3.2	3.5
60~80	2.2	2.6	2.6	2.7	2.9	3.2	3.6