

# S-BAH11

Code(d) **667483**

Code(e) **670480**

Refractive Index $n_d$	<b>1.66672</b> 1.666718	Abbe Number $\nu_d$	<b>48.32</b>	Dispersion $n_F-n_C$	<b>0.013797</b>
Refractive Index $n_e$	1.670000	Abbe Number $\nu_e$	48.04	Dispersion $n_F-n_C'$	0.013948

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.63328
$n_{1970}$	1.97009	1.63866
$n_{1530}$	1.52958	1.64456
$n_{1129}$	1.12864	1.65008
$n_t$	1.01398	1.65201
$n_s$	0.85211	1.65551
$n_{A'}$	0.76819	1.65798
$n_r$	0.70652	1.66027
$n_C$	0.65627	1.66259
$n_{C'}$	0.64385	1.66324
$n_{\text{He-Ne}}$	0.6328	1.66385
$n_D$	0.58929	1.66660
$n_d$	0.58756	1.66672
$n_e$	0.54607	1.67000
$n_F$	0.48613	1.67639
$n_{F'}$	0.47999	1.67719
$n_{\text{He-Cd}}$	0.44157	1.68309
$n_g$	0.435835	1.68412
$n_h$	0.404656	1.69067
$n_i$	0.365015	1.70213

Constants of Dispersion Formula	
$A_1$	1.57138860E+00
$A_2$	1.47869313E-01
$A_3$	1.28092846E+00
$B_1$	9.10807936E-03
$B_2$	4.02401684E-02
$B_3$	1.30399367E+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	52.2
Phosphate Resistance PR	2.0

Mechanical Properties	
Young's Modulus E ( $10^9\text{N/m}^2$ )	929
Rigidity Modulus G ( $10^8\text{N/m}^2$ )	365
Poisson's Ratio $\sigma$	0.274
Knoop Hardness Hk[Class]	560   6
Abrasion Aa	154
Photoelastic Constant $\beta$ (nm/cm/ $10^9\text{Pa}$ )	2.06

Temperature Coefficients of Refractive Index							
Range of Temperature (°C)	dn/dT relative ( $10^{-6}/^\circ\text{C}$ )						
	t	C'	He-Ne	D	e	F'	g
-40~-20	3.3	3.7	3.7	3.9	4.1	4.6	5.1
-20~ 0	3.3	3.8	3.8	4.0	4.2	4.7	5.2
0~20	3.3	3.8	3.9	4.1	4.3	4.8	5.4
20~40	3.3	3.9	3.9	4.1	4.4	4.9	5.5
40~60	3.4	4.0	4.0	4.2	4.5	5.0	5.6
60~80	3.4	4.0	4.1	4.3	4.6	5.1	5.8

Partial Dispersions	
$n_C-n_t$	0.010576
$n_C-n_{A'}$	0.004611
$n_d-n_C$	0.004129
$n_e-n_C$	0.007411
$n_g-n_d$	0.017407
$n_g-n_F$	0.007739
$n_h-n_g$	0.006549
$n_i-n_g$	0.018002
$n_C-n_t$	0.011228
$n_e-n_{C'}$	0.006759
$n_F-n_e$	0.007189
$n_i-n_{F'}$	0.024938

Relative Partial Dispersions	
$\theta_{C,t}$	0.7665
$\theta_{C,A'}$	0.3342
$\theta_{d,C}$	0.2993
$\theta_{e,C}$	0.5371
$\theta_{g,d}$	1.2617
$\theta_{g,F}$	0.5609
$\theta_{h,g}$	0.4747
$\theta_{i,g}$	1.3048
$\theta'_{C,t}$	0.8050
$\theta'_{e,C'}$	0.4846
$\theta'_{F,e}$	0.5154
$\theta'_{i,F'}$	1.7879

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0069
$\Delta\theta_{C,A'}$	-0.0002
$\Delta\theta_{g,d}$	-0.0027
$\Delta\theta_{g,F}$	-0.0024
$\Delta\theta_{i,g}$	-0.0156

Thermal Properties	
Strain Point StP (°C)	593
Annealing Point AP (°C)	617
Transformation Temperature Tg (°C)	629
Yield Point At (°C)	675
Softening Point SP (°C)	738
Expansion Coefficients (-30~+70°C)	69
$\alpha$ ( $10^{-7}/^\circ\text{C}$ ) (+100~+300°C)	82
Thermal Conductivity k (W/m·K)	0.858

Coloring			
$\lambda_{80}$	380	$\lambda_5$	340
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	375	$\lambda_{0.05}$	340

CCI		
B	G	R
0.00	0.98	0.94

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	0.04
350	0.27
360	0.56
370	0.75
380	0.86
390	0.922
400	0.952
420	0.975
440	0.982
460	0.987
480	0.991
500	0.994
550	0.997
600	0.995
650	0.995
700	0.996
800	0.997
900	0.997
1000	0.997
1200	0.998
1400	0.994
1600	0.995
1800	0.988
2000	0.976
2200	0.936
2400	0.84

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.59
Remarks	

OHARA 17-04