

**DATA SHEET**
**S-BAH27 (1.7)**
**S-BAH27**

 Code(d) **702412**

 Code(e) **706410**

Refractive Index $n_d$	1.70154 1.701536	Abbe Number $\nu_d$	41.24	Dispersion $n_F-n_C$	0.017012
Refractive Index $n_e$	1.705571	Abbe Number $\nu_e$	40.95	Dispersion $n_F-n_{C'}$	0.017228

Refractive Indices		
$\lambda(\mu\text{m})$		
$n_{2325}$	2.32542	1.66253
$n_{1970}$	1.97009	1.66858
$n_{1530}$	1.52958	1.67526
$n_{1129}$	1.12864	1.68160
$n_t$	1.01398	1.68386
$n_s$	0.85211	1.68800
$n_{A'}$	0.76819	1.69094
$n_r$	0.70652	1.69370
$n_c$	0.65627	1.69650
$n_{C'}$	0.64385	1.69729
$n_{He-Ne}$	0.6328	1.69804
$n_D$	0.58929	1.70139
$n_d$	0.58756	1.70154
$n_e$	0.54607	1.70557
$n_F$	0.48613	1.71351
$n_{F'}$	0.47999	1.71452
$n_{He-Cd}$	0.44157	1.72200
$n_g$	0.435835	1.72332
$n_h$	0.404656	1.73180
$n_i$	0.365015	1.74712

Constants of Dispersion Formula	
$A_1$	1.68939052E+00
$A_2$	1.33081013E-01
$A_3$	1.41165515E+00
$B_1$	1.03598193E-02
$B_2$	5.33982239E-02
$B_3$	1.26515503E+02

Chemical Properties	
Water Resistance(Powder) Group RW(P)	1
Acid Resistance(Powder) Group RA(P)	3
Weathering Resistance(Surface) Group WS	2
Acid Resistance(Surface) Group SR	4.0
Phosphate Resistance PR	1.0

Mechanical Properties	
Young's Modulus E ( $10^9\text{N/m}^2$ )	936
Rigidity Modulus G ( $10^9\text{N/m}^2$ )	368
Poisson's Ratio $\sigma$	0.272
Knoop Hardness HK(Class)	580   6
Abrasion Aa	129
Photoelastic Constant $\beta$ (nm/cm/10 <sup>5</sup> Pa)	2.18

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	3.2	3.7	3.7	4.0	4.2	4.8	5.5
-20~ 0	3.3	3.8	3.9	4.1	4.4	5.0	5.7
0~20	3.4	4.0	4.0	4.2	4.5	5.2	5.9
20~40	3.5	4.1	4.1	4.4	4.7	5.4	6.2
40~60	3.5	4.2	4.3	4.5	4.8	5.6	6.4
60~80	3.7	4.4	4.4	4.6	5.0	5.8	6.6

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Partial Dispersions	
$n_C-n_t$	0.012641
$n_C-n_{A'}$	0.005561
$n_G-n_C$	0.005033
$n_e-n_C$	0.009068
$n_g-n_d$	0.021787
$n_g-n_F$	0.009808
$n_h-n_g$	0.008480
$n_i-n_g$	0.023797
$n_C-n_t$	0.013433
$n_e-n_{C'}$	0.008276
$n_F-n_e$	0.008952
$n_i-n_F$	0.032597

Relative Partial Dispersions	
$\theta_{C,t}$	0.7431
$\theta_{C,A'}$	0.3269
$\theta_{d,C}$	0.2958
$\theta_{e,C}$	0.5330
$\theta_{g,d}$	1.2807
$\theta_{g,F}$	0.5765
$\theta_{h,g}$	0.4985
$\theta_{i,g}$	1.3988
$\theta'_{C,t}$	0.7797
$\theta'_{e,C'}$	0.4804
$\theta'_{F,e}$	0.5196
$\theta'_{i,F}$	1.8921

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	0.0029
$\Delta\theta_{C,A'}$	0.0011
$\Delta\theta_{e,d}$	0.0016
$\Delta\theta_{g,F}$	0.0018
$\Delta\theta_{i,g}$	0.0191

Thermal Properties	
Strain Point StP (°C)	611
Annealing Point AP (°C)	636
Transformation Temperature Tg (°C)	647
Yield Point At (°C)	682
Softening Point SP (°C)	749
Expansion Coefficients (-30~+70°C)	64
$\alpha$ ( $10^{-7}/^\circ\text{C}$ ) (+100~+300°C)	75
Thermal Conductivity k (W/m·K)	0.869

Coloring			
$\lambda_{80}$	400	$\lambda_s$	350
$\lambda_{70}$			

Internal transmission			
$\lambda_{0.80}$	388	$\lambda_{0.05}$	356

CCI		
B	G	R
0.00	1.99	2.01

Internal Transmittance	
$\lambda(\text{nm})$	$\tau$ 10mm
280	
290	
300	
310	
320	
330	
340	
350	
360	0.16
370	0.47
380	0.70
390	0.83
400	0.89
420	0.955
440	0.971
460	0.979
480	0.985
500	0.989
550	0.995
600	0.994
650	0.994
700	0.996
800	0.998
900	0.998
1000	0.998
1200	0.998
1400	0.993
1600	0.994
1800	0.987
2000	0.974
2200	0.921
2400	0.81

Other Properties	
Bubble Quality Group B	
Specific Gravity d	3.67
Remarks	

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