

S-NPH3

Code(d) **959175**

Code(e) **972173**

Refractive Index n_d	1.95906 1.959060	Abbe Number	v_d	17.5 17.47	Dispersion	n_F-n_C	0.05490 0.054895
Refractive Index n_e	1.971885	Abbe Number	v_e	17.33	Dispersion	n_F-n_C'	0.056091

Refractive Indices		
$\lambda(\mu\text{m})$		
n_{2325}	2.325420	1.870640
n_{1970}	1.970090	1.880020
n_{1530}	1.529580	1.891310
n_{1129}	1.128640	1.904120
n_t	1.013980	1.909370
n_s	0.852110	1.919840
$n_{A'}$	0.768190	1.927800
n_r	0.706520	1.935590
n_C	0.656270	1.943760
$n_{C'}$	0.643850	1.946120
$n_{\text{He-Ne}}$	0.632800	1.948340
n_D	0.589290	1.958600
n_d	0.587560	1.959060
n_e	0.546070	1.971880
n_F	0.486130	1.998660
$n_{F'}$	0.479990	2.002210
$n_{\text{He-Cd}}$	0.441570	2.029760
n_g	0.435835	2.034880
n_h	0.404656	2.069650
n_i	0.365015	/

Deviation of Relative Dispersions $\Delta\theta$ from "Normal"	
$\Delta\theta_{C,t}$	-0.0022
$\Delta\theta_{C,A'}$	-0.0063
$\Delta\theta_{g,d}$	0.0527
$\Delta\theta_{g,F}$	0.0466
$\Delta\theta_{i,g}$	/

Constants of Dispersion Formula	
A_1	2.09834903
A_2	$4.89088388 \times 10^{-1}$
A_3	2.94009268
B_1	$1.79123869 \times 10^{-2}$
B_2	$1.76653353 \times 10^{-2}$
B_3	$1.760930428 \times 10^{-2}$

Other Properties	
Bubble Quality Group	
Specific Gravity	3.59
Remarks	

Temperature Coefficients of Refractive Index								
Range of Temperature (°C)	dn/dt relative (10-6/)							
	t	C'	He-Ne	D	e	F'	g	
-40~20	0.6	2.1	2.2	2.8	3.7	6.2	9.6	
-20~ 0	0.8	2.4	2.6	3.2	4.2	6.9	10.6	
0~20	1.1	2.8	2.9	3.6	4.6	7.6	11.6	
20~40	1.2	3.1	3.2	3.9	5.0	8.2	12.4	
40~60	1.4	3.4	3.5	4.3	5.5	8.8	13.3	
60~80	1.7	3.8	3.9	4.8	6.0	9.5	14.3	

Partial Dispersions	
n_C-n_t	0.034388
$n_C-n_{A'}$	0.015956
n_d-n_C	0.015300
n_g-n_C	0.028125
n_g-n_d	0.075817
n_g-n_F	0.036222
n_h-n_g	0.034773
n_i-n_g	/
n_C-n_t	0.036744
n_e-n_C'	0.025769
n_F-n_e	0.030322
n_i-n_F	/

Thermal Properties	
Strain Point StP (°C)	/
Annealing Point AP (°C)	/
Transformation Temperature Tg (°C)	671
Yield Point At (°C)	704
Softening Point SP (°C)	/
Expansion Coefficients (-30~+70°C)	59
α (10-7/°C) (+100~+300°C)	65
Thermal Conductivity k (W/m·K)	1.01

Mechanical Properties	
Young's Modulus E (10 ⁹ N/m ²)	1022
Rigidity Modulus G (10 ⁹ N/m ²)	411
Poisson's Ratio σ	0.243
Knoop Hardness Hk(Class)	450 5
Abrasion Aa	194
Photoelastic Constant β (nm/cm/10 ⁵ Pa)	3.35

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

Relative Partial Dispersions	
$\theta_{C,t}$	0.6264
$\theta_{C,A'}$	0.2907
$\theta_{d,C}$	0.2787
$\theta_{e,C}$	0.5123
$\theta_{g,d}$	1.3811
$\theta_{g,F}$	0.6598
$\theta_{h,g}$	0.6334
$\theta_{i,g}$	/
$\theta'_{C,t}$	0.6551
$\theta'_{e,C'}$	0.4594
$\theta'_{F,e}$	0.5406
$\theta'_{i,F}$	/

Coloring			
λ_{80}		λ_5	40
λ_{70}	44		

Internal Transmittance	
$\lambda(\text{nm})$	$\tau_{10\text{mm}}$
280	
290	
300	
310	
320	
330	
340	
350	
360	
370	
380	
390	0.04
400	0.12
420	0.72
440	0.88
460	0.932
480	0.956
500	0.970
550	0.990
600	0.996
650	0.997
700	0.999
800	0.999
900	0.998
1000	0.998
1200	0.999
1400	0.998
1600	0.995
1800	0.989
2000	0.983
2200	0.968
2400	0.949