LYTKARINO OPTICAL GLASS FACTORY, JSC

ЛЗОС LZOS

BF1

glass type

n_e 1.527063	υ_e 54.68	$n_{F'} - n_{C'}$ 0.009638
n_d 1.524786	υ_d 54.95	$n_F - n_C$ 0.009550

Class of bubbles	Viscosity temperature				
	η [Poise]	$10^{14.5}$	10^{13}	10^{10}	10^{8}
4	t [°C]	470	520	630	705

Relative partial dispersion deviations from the 'Normal Line'				
	i – F'	g – F'	F' - e	F' - r
ΔP	-0.005	-0.0007	+/-0	-0.0011
Δ υ_e	-0.6	-0.4	+/-0	+1.5
	i – F	g – F	F – e	F – r
ΔP	-0.005	-0.0005	+0.001	-0.0008
Δ υ_d	-0.5	-0.3	+0.2	+1.5

Stress optical coefficient B [nm·cm^{-1} / kp·cm^{-2}], λ=550nm	Thermal conductivity			
	-50°C	0°C	+20°C	+50°C
3.15	-	-	-	-

Optical density increment on irradiation		
Initial density D_0 [cm^{-1}]	Radiation dose [R]	Optical density increment Δ D [cm^{-1}]
0.040	$1 \cdot 10^4$	0.040
	$1 \cdot 10^5$	0.20

Young's modulus E [kp · mm^{-2}]	Shear modulus G [kp·mm^{-2}]	Coefficient of linear thermal expansion $\alpha_{20/t} \cdot 10^7$ [°C]		Chemical resistance	
				Stain resistance	
				Group	I
6970	2897				
Poisson's ratio μ	Density ρ [g · cm^{-3}]	+20 ÷ -60°C	+20 ÷ +120°C	Weather resistance	
0.203	2.67	66	72	Group	B

Refractive indices		
λ [nm]	n	
312.6	-	-
334.1	-	-
365.0	i	1.54879
404.66	h	1.54111
435.83	g	1.536704
479.99	F'	1.531995
486.13	F	1.531447
546.07	e	1.527063
587.56	d	1.524786
589.29	D	1.524700
643.85	C'	1.522357
656.27	C	1.521897
706.52	r	1.52026
768.2	-	1.51861
852.1	-	1.51681
1013.9	-	1.51416
1128.6	-	1.51263
1395.1	-	1.50948
1529.6	-	1.50793
1813.1	-	1.50450
1970.1	-	1.50242
2249.3	-	1.49832
2325.4	-	1.49710

Refractive indices at laser wavelengths	
λ [nm]	n
350.7	-
356.4	-
488.0	1.53128
514.0	1.52921
520.8	1.52872
530.0	1.52809
568.2	1.52579
632.8	1.52279
647.1	1.52223
694.3	1.52063
890.0	1.51611
1060.0	1.51352

Dispersion coefficients	
$\nu_h = \frac{n_h - 1}{n_i - n_g}$	44.8
$\nu_e = \frac{n_e - 1}{n_{F'} - n_{C'}}$	54.68
$\nu_d = \frac{n_d - 1}{n_F - n_C}$	54.95
$\nu_D = \frac{n_D - 1}{n_F - n_C}$	54.94
$\nu_{1529.6} = \frac{n_{1529.6} - 1}{n_{1013.9} - n_{2249.3}}$	32

Relative partial dispersions		
Δ n	$\frac{\Delta n}{n_{F'} - n_{C'}}$	$\frac{\Delta n}{n_F - n_C}$
312.6 – 334.1	-	-
334.1 - i	-	-
i - h	0.797	0.804
h - g	0.4571	0.4614
g – F	0.5454	0.5505
g – F'	0.4886	0.4931
F - e	0.4549	0.4591
F - D	0.7000	0.7065
F' - e	0.5117	0.5164
d - D	0.0089	0.0090
D - C	0.2908	0.2935
e – C'	0.4883	0.4928
e - C	0.5360	0.5409
C' - r	0.218	0.220
C - r	0.170	0.172
r – 852.1	0.358	0.361
852.1 – 1013.9	0.275	0.277
1013.9 – 1128.6	0.159	0.160
1128.6 – 1395.1	0.327	0.330
1395.1 – 1529.6	0.161	0.162
1529.6 – 1813.1	0.356	0.359
1813.1 – 1970.1	0.215	0.217
1970.1 – 2249.3	0.425	0.429
2249.3 – 2325.4	0.127	0.128

Internal transmittance		
λ [nm]	τ_i (s=10mm)	τ_i (s=25mm)
280	-	-
300	-	-
320	-	-
340	-	-
360	0.964	0.913
380	0.976	0.941
400	0.992	0.980
420	0.992	0.980
440	0.992	0.980
460	0.994	0.985
480	0.994	0.985
500	0.994	0.985
520	0.995	0.987
540	0.995	0.987
560	0.995	0.987
580	0.995	0.987
600	0.994	0.985
620	0.993	0.983
640	0.993	0.983
660	0.994	0.985
680	0.994	0.985
700	0.995	0.987
750	0.995	0.987
800	0.995	0.987
900	0.994	0.985
1000	0.993	0.983
1050	0.993	0.983
1100	0.993	0.983
1200	0.993	0.983
1300	0.993	0.983
1400	0.987	0.968
1500	0.992	0.980

Radiation resistant analogue glass type-

BF101