LYTKARINO OPTICAL GLASS FACTORY, JSC

ЛЗОС LZOS

TF1

glass type

n_e 1.652188	υ_e 33.62	$n_{F'} - n_{C'}$ 0.019397
n_d 1.647665	υ_d 33.87	$n_F - n_C$ 0.019120

Class of bubbles	Viscosity temperature				
	η [Poise]	$10^{14.5}$	10^{13}	10^{10}	10^{8}
1	t [°C]	375	455	530	605

Relative partial dispersion deviations from the 'Normal Line'				
	i – F'	g – F'	F' - e	F' - r
ΔP	+0.008	+0.0004	+/-0	-0.0004
Δ υ_e	+0.9	+0.3	+/-0	+0.5
	i – F	g – F	F - e	F – r
ΔP	+0.009	+0.0006	+/-0	-0.0003
Δ υ_d	+0.9	+0.3	+/-0	+0.5

Stress optical coefficient B [nm·cm^{-1} / kp·cm^{-2}], λ=550nm	Thermal conductivity			
	-50°C	0°C	+20°C	+50°C
2.60	0.55	0.60	0.63	0.65

Optical density increment on irradiation		
Initial density D_0 [cm^{-1}]	Radiation dose [R]	Optical density increment Δ D [cm^{-1}]
0.055	$1 \cdot 10^4$	0.090
	$1 \cdot 10^5$	0.60

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	II
5470	2229				
Poisson's ratio μ	Density ρ [g · cm^{-3}]	+20 ÷ -60°C	+20 ÷ +120°C	Weather resistance	
0.227	3.86	82	86	Group	A

Refractive indices		
λ [nm]	n	
312.6	-	-
334.1	-	-
365.0	i	1.70022
404.66	h	1.68229
435.83	g	1.672451
479.99	F'	1.662347
486.13	F	1.661196
546.07	e	1.652188
587.56	d	1.647665
589.29	D	1.647500
643.85	C'	1.642950
656.27	C	1.642076
706.52	r	1.63901
768.2	-	1.63602
852.1	-	1.63289
1013.9	-	1.62862
1128.6	-	1.62638
1395.1	-	1.62232
1529.6	-	1.62054
1813.1	-	1.61691
1970.1	-	1.61487
2249.3	-	1.61102
2325.4	-	1.60991

Refractive indices at laser wavelengths	
λ [nm]	n
350.7	-
356.4	-
488.0	1.66085
514.0	1.65656
520.8	1.65555
530.0	1.65427
568.2	1.64964
632.8	1.64378
647.1	1.64272
694.3	1.63970
890.0	1.63172
1060.0	1.62767

Dispersion coefficients	
$\nu_h = \frac{n_h - 1}{n_i - n_g}$	24.6
$\nu_e = \frac{n_e - 1}{n_{F'} - n_{C'}}$	33.62
$\nu_d = \frac{n_d - 1}{n_F - n_C}$	33.87
$\nu_D = \frac{n_D - 1}{n_F - n_C}$	33.86
$\nu_{1529.6} = \frac{n_{1529.6} - 1}{n_{1013.9} - n_{2249.3}}$	35.3

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	0.924	0.938
h - g	0.5073	0.5146
g – F	0.5803	0.5886
g – F'	0.5209	0.5285
F - e	0.4644	0.4711
F - D	0.7061	0.7163
F' - e	0.5237	0.5313
d - D	0.0085	0.0086
D - C	0.2796	0.2837
e – C'	0.4763	0.4832
e - C	0.5213	0.5289
C' - r	0.203	0.206
C - r	0.158	0.160
r – 852.1	0.316	0.320
852.1 – 1013.9	0.220	0.223
1013.9 – 1128.6	0.115	0.117
1128.6 – 1395.1	0.210	0.213
1395.1 – 1529.6	0.092	0.093
1529.6 – 1813.1	0.187	0.189
1813.1 – 1970.1	0.105	0.107
1970.1 – 2249.3	0.198	0.201
2249.3 – 2325.4	0.057	0.058

Internal transmittance		
λ [nm]	τ_i (s=10mm)	τ_i (s=25mm)
280	-	-
300	-	-
320	-	-
340	-	-
360	-	-
380	0.840	0.647
400	0.960	0.903
420	0.977	0.944
440	0.983	0.958
460	0.988	0.971
480	0.991	0.978
500	0.993	0.983
520	0.995	0.987
540	0.996	0.990
560	0.996	0.990
580	0.996	0.990
600	0.995	0.987
620	0.994	0.985
640	0.994	0.985
660	0.994	0.985
680	0.995	0.987
700	0.995	0.987
750	0.997	0.993
800	0.998	0.995
900	0.997	0.993
1000	0.997	0.993
1050	0.997	0.993
1100	0.997	0.993
1200	0.996	0.990
1300	0.997	0.993
1400	0.993	0.983
1500	0.993	0.983

Radiation resistant analogue glass type-

TF101