LYTKARINO OPTICAL GLASS FACTORY, JSC

ЛЗОС LZOS

CTK3
glass type

n_e 1.662237	υ_e 57.09	$n_{F'} - n_{C'}$ 0.011599
n_d 1.659502	υ_d 57.35	$n_F - n_C$ 0.011500

Class of bubbles	Viscosity temperature				
	η [Poise]	$10^{14.5}$	10^{13}	10^{10}	10^{8}
1	t [°C]	610	640	685	720

Relative partial dispersion deviations from the 'Normal Line'				
	i – F'	**g – F'**	**F' - e**	**F' - r**
ΔP	-0.024	-0.0022	+0.0002	-0.0023
Δ υ_e	-2.6	-1.5	+0.4	+3.2
	i – F	**g – F**	**F – e**	**F – r**
ΔP	-0.024	-0.0021	+0.0004	-0.0019
Δ υ_d	-2.4	-1.2	+0.8	+3.5

Stress optical coefficient B [nm·cm^{-1} / kp·cm^{-2}], λ=550nm	Thermal conductivity			
	-50°C	0°C	+20°C	+50°C
1.55	0.57	0.60	0.62	0.64

Optical density increment on irradiation		
Initial density D_0 [cm^{-1}]	Radiation dose [R]	Optical density increment Δ D [cm^{-1}]
0.056	$1 \cdot 10^4$	0.060
	$1 \cdot 10^5$	0.39

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	IV
9030	3519				
Poisson's ratio μ	**Density ρ [g · cm^{-3}]**	+20 ÷ -60°C	+20 ÷ +120°C	**Weather resistance**	
0.283	3.19	71	70	**Group**	A

Refractive indices		
λ [nm]	n	
312.6	-	-
334.1	-	-
365.0	i	1.68789
404.66	h	1.67896
435.83	g	1.673767
479.99	F'	1.668159
486.13	F	1.667504
546.07	e	1.662237
587.56	d	1.659502
589.29	D	1.659400
643.85	C'	1.656560
656.27	C	1.656004
706.52	r	1.65403
768.2	-	1.65204
852.1	-	1.64987
1013.9	-	1.64670
1128.6	-	1.64488
1395.1	-	1.64120
1529.6	-	1.63942
1813.1	-	1.63553
1970.1	-	1.63321
2249.3	-	1.62867
2325.4	-	1.62734

Refractive indices at laser wavelengths	
λ [nm]	**n**
350.7	-
356.4	-
488.0	1.66731
514.0	1.66482
520.8	1.66424
530.0	1.66348
568.2	1.66071
632.8	1.65708
647.1	1.65642
694.3	1.65447
890.0	1.64903
1060.0	1.64594

Dispersion coefficients	
$\nu_h = \frac{n_h - 1}{n_i - n_g}$	48.1
$\nu_e = \frac{n_e - 1}{n_{F'} - n_{C'}}$	57.09
$\nu_d = \frac{n_d - 1}{n_F - n_C}$	57.35
$\nu_D = \frac{n_D - 1}{n_F - n_C}$	57.34
$\nu_{1529.6} = \frac{n_{1529.6} - 1}{n_{1013.9} - n_{2249.3}}$	35.5

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	0.770	0.776
h - g	0.4477	0.4517
g – F	0.5399	0.5446
g – F'	0.4834	0.4876
F - e	0.4531	0.4580
F - D	0.6986	0.7047
F' - e	0.5106	0.5150
d - D	0.0088	0.0089
D - C	0.2928	0.2953
e – C'	0.4894	0.4937
e - C	0.5373	0.5420
C' - r	0.218	0.220
C - r	0.170	0.172
r – 852.1	0.359	0.362
852.1 – 1013.9	0.273	0.276
1013.9 – 1128.6	0.156	0.158
1128.6 – 1395.1	0.317	0.320
1395.1 – 1529.6	0.154	0.155
1529.6 – 1813.1	0.336	0.339
1813.1 – 1970.1	0.200	0.202
1970.1 – 2249.3	0.391	0.394
2249.3 – 2325.4	0.115	0.116

Internal transmittance		
λ [nm]	**τ_i (s=10mm)**	**τ_i (s=25mm)**
280	-	-
300	-	-
320	-	-
340	-	-
360	0.903	0.775
380	0.942	0.861
400	0.967	0.919
420	0.977	0.944
440	0.979	0.948
460	0.984	0.960
480	0.987	0.968
500	0.992	0.980
520	0.994	0.985
540	0.996	0.990
560	0.996	0.990
580	0.996	0.990
600	0.996	0.990
620	0.996	0.990
640	0.995	0.987
660	0.995	0.987
680	0.995	0.987
700	0.995	0.987
750	0.995	0.987
800	0.995	0.987
900	0.995	0.987
1000	0.994	0.985
1050	0.994	0.985
1100	0.994	0.985
1200	0.993	0.983
1300	0.993	0.983
1400	0.983	0.958
1500	0.989	0.972

Radiation resistant analogue glass type-

CTK103