ガラスモールドレンズ用プリフォーム硝種（冷間ＰＦ）
Preform for precision molding (Polishing surface)

推奨硝種
Recommended Glass Type

MC-TAF115

770-495

n_d = 1.77047 ν_d = 49.46 (49.462) $n_F - n_C$ = 0.015577
n_e = 1.77418 ν_e = 49.22 (49.220) $n_{F'} - n_{C'}$ = 0.015729

屈 折 率 Refractive Index		
	λ (nm)	
$n_{1529.6}$	1529.60	1.74444
$n_{1128.64}$	1128.64	1.75118
n_t	1013.98	1.75349
n_s	852.11	1.75762
$n_{A'}$	768.195	1.76048
n_r	706.519	1.76312
n_C	656.273	1.76577
$n_{C'}$	643.847	1.76652
n_{633}	632.8	1.76722
n_D	589.294	1.77033
n_d	587.562	1.77047
n_e	546.074	1.77418
n_F	486.133	1.78135
$n_{F'}$	479.991	1.78225
n_g	435.834	1.78995
n_h	404.656	1.79715
n_i	365.015	1.80952

分 散 式 の 定 数 Constants of dispersion formula	
A_0	3.0645313
A_1	$-1.3693840 \times 10^{-2}$
A_2	2.4574301×10^{-2}
A_3	3.9557144×10^{-4}
A_4	1.0739241×10^{-5}
A_5	1.2049528×10^{-7}

部 分 分 散 Partial dispersions	
$n_C - n_t$	0.012282
$n_d - n_C$	0.004698
$n_F - n_d$	0.010879
$n_g - n_F$	0.008599
$n_{C'} - n_t$	0.013027
$n_e - n_{C'}$	0.007663
$n_{F'} - n_e$	0.008066
$n_g - n_{F'}$	0.007702

部分分散比 Partial dispersion rates			
P_{C_t}	0.7885	$P'_{C'\_t}$	0.8282
P_{d_C}	0.3016	$P'_{d\_C'}$	0.2513
P_{e_d}	0.2382	P'_{e_d}	0.2359
P_{F_e}	0.4602	$P'_{F'\_e}$	0.5128
P_{g_F}	0.5520	$P'_{g\_F'}$	0.4897
P_{h_g}	0.4618	P'_{h_g}	0.4574
P_{i_h}	0.7943	P'_{i_h}	0.7866

異常分散性 Anomalous dispersions	
ΔP_{C_t}	0.0115
$\Delta P_{C\_A'}$	0.0032
ΔP_{g_d}	−0.0087
ΔP_{g_F}	−0.0073
ΔP_{i_g}	−0.0472

光弾性定数 Photoelastic Constant	
B (10^{-12}/Pa)	1.61

比 重 Specific Gravity	
d	4.28

化 学 的 性 質 Chemical Properties	
D_W	1
D_A	4
T_{Blue}	3
D_{NaOH}	1
D_{STPP}	2
D_O	2
D_H	1

熱 的 性 質 Thermal Properties	
T_g (℃)	595
T_s (℃)	636
$T_{10^{14.5}}$ (℃)	571
$T_{10^{13}}$ (℃)	591
$T_{10^{7.6}}$ (℃)	667
$\alpha_{-30/+70℃}$ (10^{-7}/℃)	61
$\alpha_{100/300℃}$ (10^{-7}/℃)	79
λ [W/(m·K)]	0.888
C_p [kJ/(kg·K)]	0.562

機 械 的 性 質 Mechanical Properties	
H_K	720(7)
F_A	60
E (GPa)	120
G (GPa)	46.4
μ	0.300
σ_b (MPa)	

内部透過率 Internal Transmittance			
λ (nm)	τ 2mm	τ 5mm	τ 10mm
2500	0.883	0.733	0.538
2400	0.925	0.822	0.676
2200	0.979	0.948	0.898
2000	0.992	0.979	0.959
1800	0.997	0.993	0.985
1600	0.999	0.997	0.995
1550	0.999	0.998	0.996
1500	0.999	0.998	0.996
1400	0.999	0.998	0.997
1300	0.999	0.999	0.999
1200	0.999	0.999	0.999
1100	0.999	0.999	0.999
1060	0.999	0.999	0.999
1050	0.999	0.999	0.999
1000	0.999	0.999	0.999
950	0.999	0.999	0.999
900	0.999	0.999	0.999
850	0.999	0.999	0.999
830	0.999	0.999	0.999
800	0.999	0.999	0.999
780	0.999	0.999	0.999
750	0.999	0.999	0.999
700	0.999	0.999	0.999
650	0.999	0.999	0.999
600	0.999	0.999	0.997
550	0.999	0.997	0.995
500	0.999	0.999	0.998
480	0.999	0.999	0.997
460	0.999	0.998	0.996
440	0.999	0.997	0.995
420	0.999	0.996	0.993
400	0.998	0.994	0.988
390	0.997	0.992	0.983
380	0.995	0.988	0.976
370	0.992	0.980	0.961
360	0.987	0.967	0.935
350	0.978	0.946	0.895
340	0.965	0.916	0.838
330	0.946	0.871	0.758
320	0.921	0.814	0.663
310	0.889	0.745	0.555
300	0.850	0.666	0.444
290	0.801	0.575	0.330
280	0.722	0.443	0.196

着 色 度 Coloration Code	
λ80(λ70)/λ5	365/270
着 色 度 (内部透過率) Coloration of Internal Transmittance	
λτ80/λτ5	335/268

CCI Color Contribution Index	
CCI(G)	0.23
CCI(R)	0.24

屈折率の温度係数 dn/dT (×10^{-6}/℃) Temperature Coefficient of Refractive Index
アッベ数の温度係数 dν/dT (×10^{-3}/℃) Temperature Coefficient of Abbe-number

	(℃)	dn/dT										dν/dT	
		n_h	n_g	$n_{F'}$	n_F	n_e	n_d	n_{633}	$n_{C'}$	n_C	n_r	ν_e	ν_d
		404.66	435.84	479.99	486.13	546.07	587.56	632.80	643.85	656.27	706.52	546.07	587.56
dn/dT & dν/dT (rel.)	-40 / -20	7.5	7.0	6.4	6.3	5.8	5.6	5.4	5.3	5.3	5.1	-3.0	-3.0
	-20 / 0	7.4	6.8	6.2	6.2	5.7	5.4	5.2	5.2	5.1	5.0	-2.9	-3.0
	0 / 20	7.3	6.7	6.1	6.1	5.6	5.3	5.1	5.1	5.0	4.9	-3.0	-3.0
	20 / 40	7.3	6.7	6.1	6.0	5.6	5.3	5.1	5.0	5.0	4.8	-3.0	-3.0
	40 / 60	7.3	6.7	6.1	6.0	5.5	5.3	5.1	5.0	5.0	4.8	-3.0	-3.0
	60 / 80	7.3	6.8	6.2	6.1	5.6	5.3	5.1	5.1	5.0	4.9	-3.1	-3.1
	80 / 100	7.4	6.8	6.2	6.1	5.6	5.4	5.2	5.1	5.1	4.9	-3.0	-3.0
	100 / 120	7.5	6.9	6.3	6.2	5.7	5.5	5.2	5.2	5.1	5.0	-3.1	-3.1
	120 / 140	7.6	7.0	6.4	6.3	5.8	5.5	5.3	5.3	5.2	5.1	-3.1	-3.1
	140 / 150	7.7	7.1	6.5	6.4	5.9	5.6	5.4	5.3	5.3	5.1	-3.1	-3.1
dn/dT & dν/dT (abs.)	-40 / -20	5.1	4.5	4.0	3.9	3.4	3.2	3.0	2.9	2.9	2.8	-2.9	-2.9
	-20 / 0	5.3	4.7	4.2	4.1	3.6	3.4	3.2	3.1	3.1	2.9	-3.0	-3.0
	0 / 20	5.5	4.9	4.3	4.3	3.8	3.6	3.4	3.3	3.3	3.1	-3.0	-3.0
	20 / 40	5.7	5.1	4.5	4.5	4.0	3.7	3.5	3.5	3.5	3.3	-3.0	-3.0
	40 / 60	5.9	5.3	4.7	4.7	4.2	3.9	3.7	3.7	3.6	3.5	-3.0	-3.0
	60 / 80	6.1	5.5	4.9	4.9	4.4	4.1	3.9	3.9	3.8	3.7	-3.0	-3.0
	80 / 100	6.3	5.7	5.1	5.1	4.5	4.3	4.1	4.0	4.0	3.8	-3.1	-3.1
	100 / 120	6.5	5.9	5.3	5.2	4.7	4.5	4.3	4.2	4.2	4.0	-3.1	-3.1
	120 / 140	6.7	6.1	5.5	5.4	4.9	4.7	4.4	4.4	4.4	4.2	-3.1	-3.1
	140 / 150	6.9	6.3	5.6	5.6	5.0	4.8	4.6	4.5	4.5	4.3	-3.1	-3.1

線膨張係数 α (×10^{-7}/℃) Coefficient of Thermal Expansion

(℃)	α
-40 / -30	58
-30 / -20	58
-20 / -10	59
-10 / 0	60
0 / 10	60
10 / 20	61
20 / 30	61
30 / 40	62
40 / 50	62
50 / 60	63
60 / 70	63
70 / 80	64
80 / 90	65
90 / 100	65
100 / 110	66
110 / 120	67
120 / 130	68
130 / 140	68
140 / 150	70

冷却速度による屈折率の変化 Difference of refractive indices by cooling rate	
βC	148
βd	149
βF	149
βg	149

備 考 Remarks

硝種対照表 Glass Cross Reference Index

	HOYA	SCHOTT	OHARA	HIKARI	SUMITA	CDGM
Glass_Type	MC-TAF115					
Code	770-495					

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