

# S-LAL54Q improved chemical durability & mechanical properties

## Properties

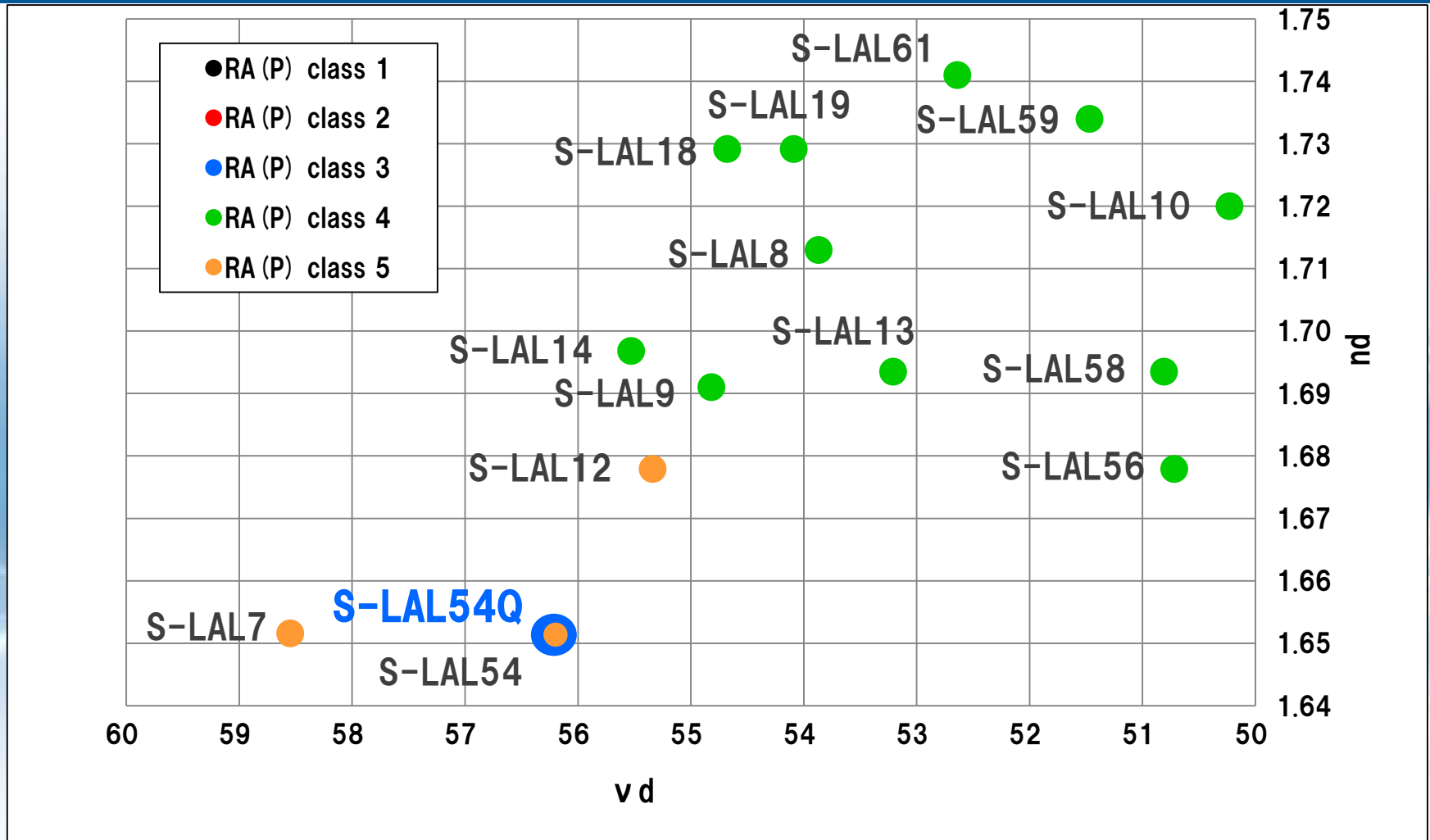
1. Improved chemical durability  
⇒ RA (P) : Class 3, RW (P) : Class 1
2. Small CTE  
⇒ Smallest CTE among OHARA optical glasses  
⇒ Stronger resistance to thermal shock
3. High Mechanical Strength  
⇒ Knoop hardness 680 (Class7)  
⇒ Abrasion 53  
⇒ Stronger anti-crack resistance,  
Stronger impact resistance
4. Low Specific Gravity
5. Equivalent to S-LAL54 for  $n_d$ ,  $v_d$

## Applications

- Automotive cameras, Projectors
- Interchangeable lens of Camera, etc.

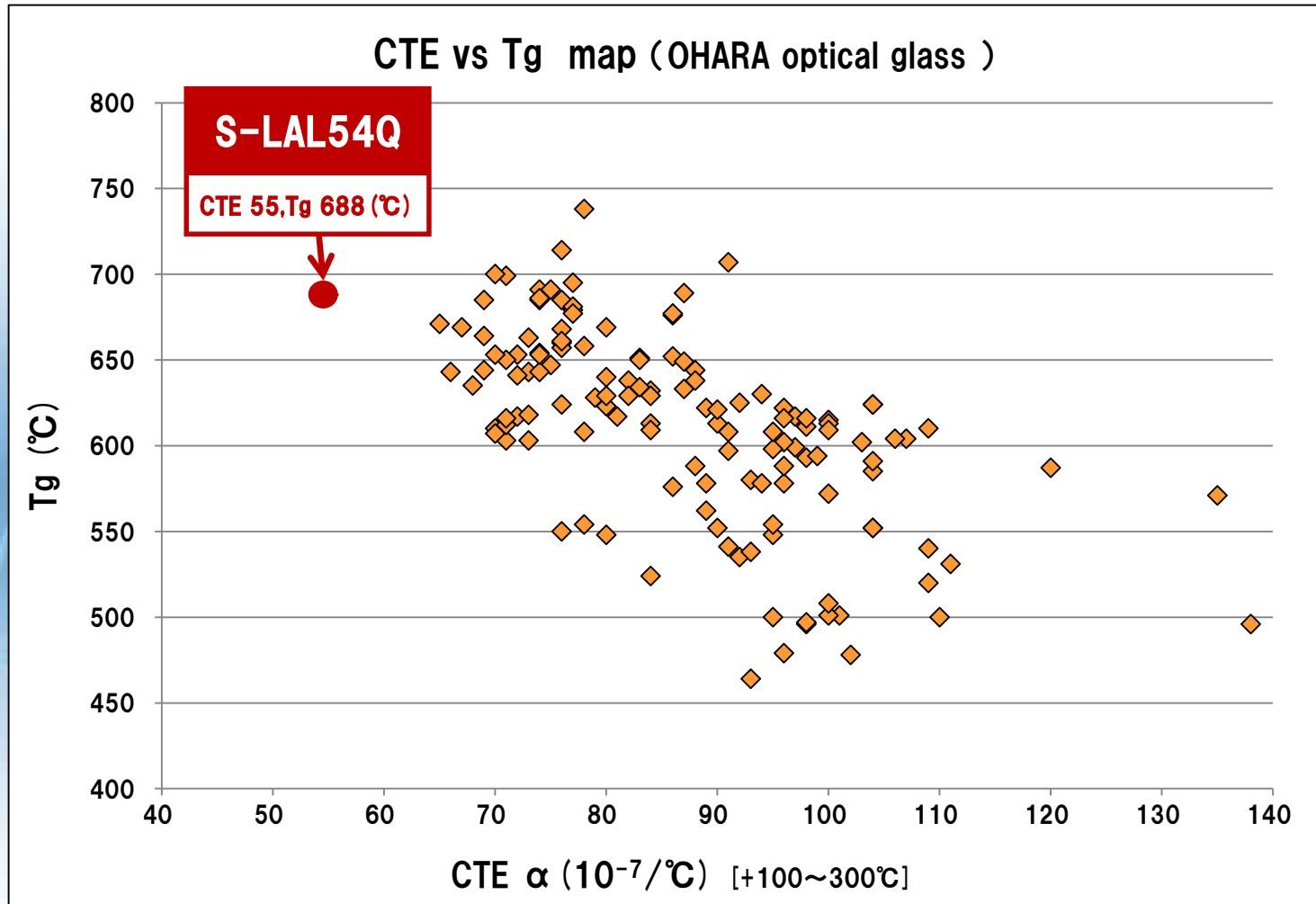
		S-LAL54Q	S-LAL54
$n_d$		1.65100	1.65100
$v_d$		56.24	56.16
$\theta_{g,F}$		0.5420	0.5482
$\Delta\theta_{g,F}$		-0.0085	-0.0024
CTE $\alpha$ ( $10^{-7}/^{\circ}\text{C}$ )	-30~70°C	43	71
	+100~300°C	55	83
Tg (°C)		688	651
At (°C)		718	675
Coloring	$\lambda_{80}$ ( $\lambda_{70}$ )	385	365
	$\lambda_5$	-	325
Chemical Properties	Water Resistance [RW (p)]	1	3
	Acid Resistance [RA (p)]	3	5
	Weathering Resistance [W (s)]	2	3
	Acid Resistance [SR]	4.0	53.0
	Phosphate Resistance [PR]	3.0	4.2
Specific Gravity		3.36	3.82
Knoop Hardness Hk [Class]		680 [7]	530 [5]
Abrasion Aa		53	171

# S-LAL54Q improved on chemical durability



- 1) Achieved acid resistance of class 3 using the powder method.
- 2) Suitable for Automotive cameras & Projectors due to low CTE & high mechanical strength.

# S-LAL54Q Low expansion characteristics



S-LAL54Q has the lowest CTE among OHARA optical glasses and high Tg. It's suitable for optical systems under environments where the temperature change is very large.