

# S-LAL21 improved on chemical durability & mechanical properties

## Properties

1. Improved chemical durability

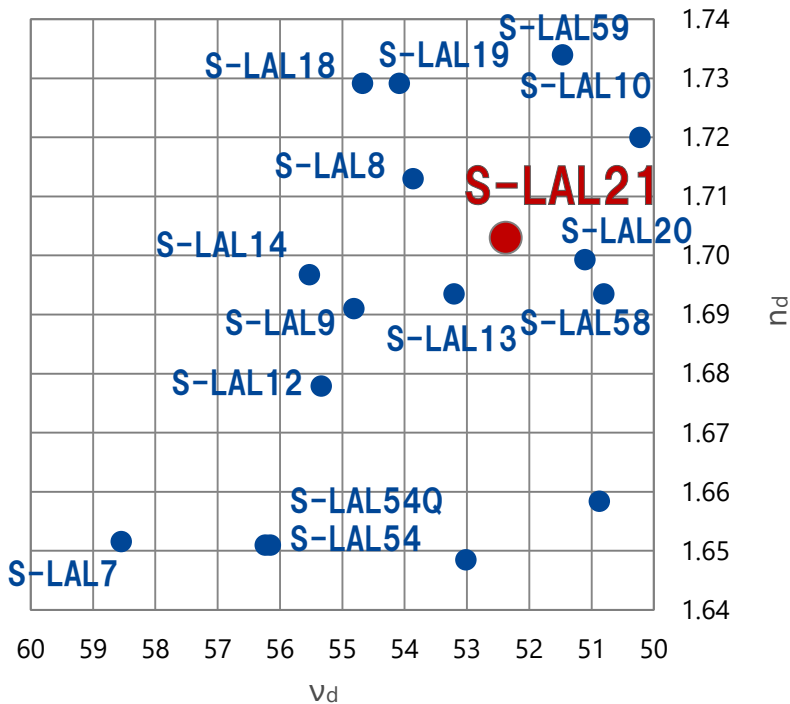
⇒ Class 1 RW (P) in LAL region

2. Small CTE

⇒ Stronger resistance to thermal shock

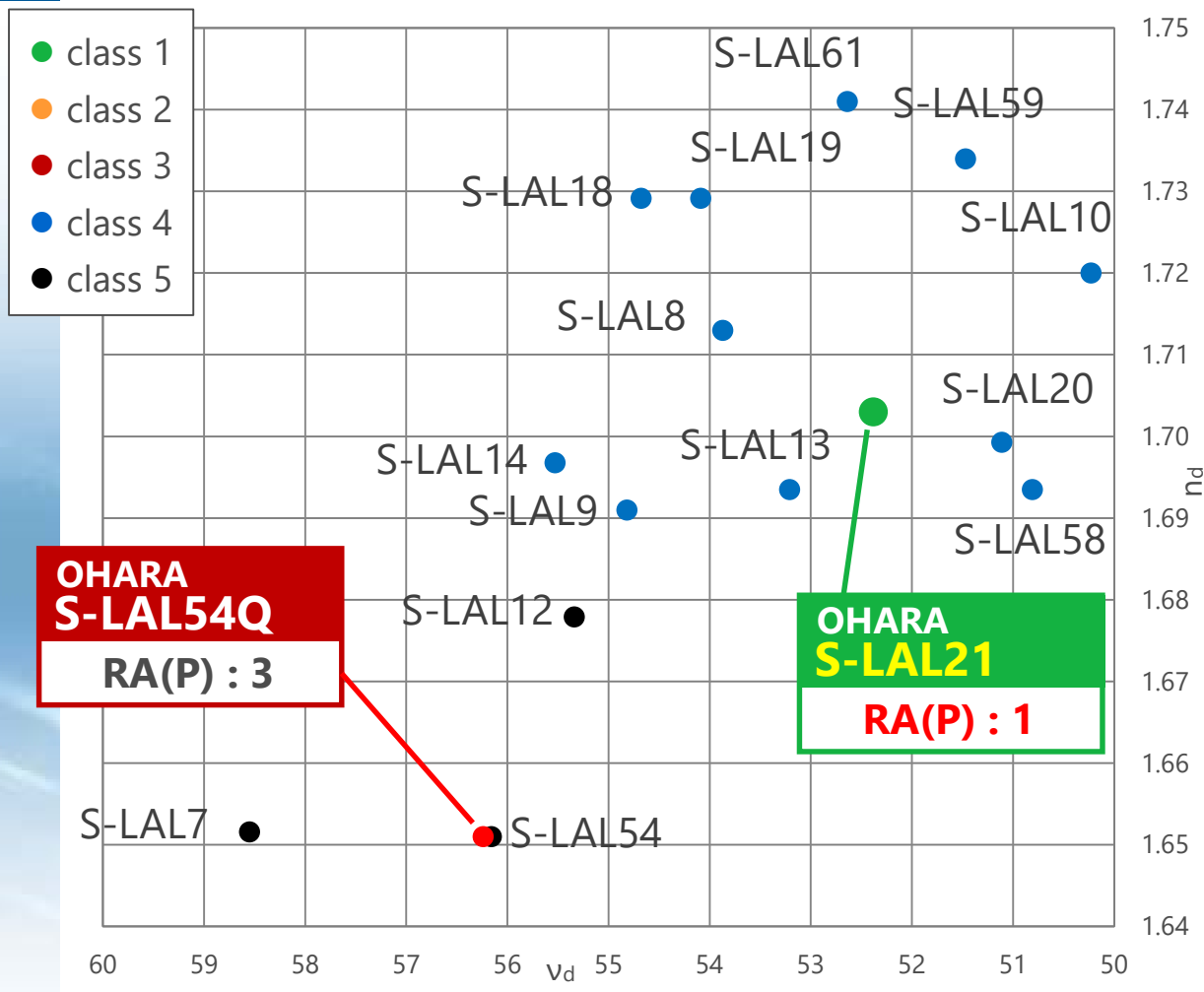
3. High Mechanical Strength

⇒ Stronger anti-crack resistance,  
Stronger impact resistance



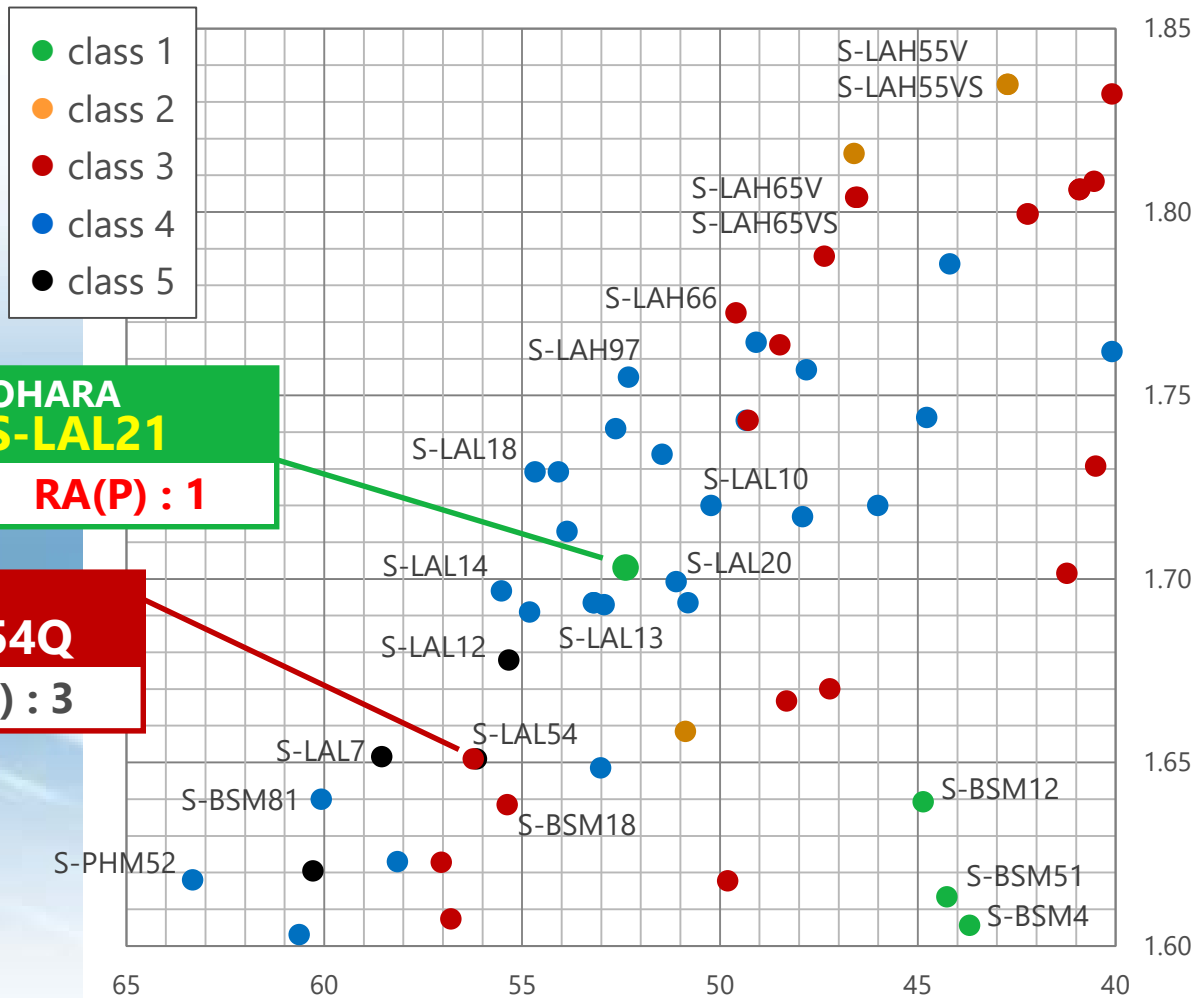
		S-LAL21	S-LAL13	S-LAL54Q
$n_d$		1.70300	1.69350	1.65100
$V_d$		52.38	53.21	56.24
$\theta_{g,F}$		0.5506	0.5473	0.5420
$\Delta \theta_{g,F}$		-0.0061	-0.0081	-0.0085
dn/dT (Dline 40°C~60°C)		<b>7.8</b>	<b>5.6</b>	<b>6.7</b>
CTE $\alpha$ ( $10^{-7}/^\circ\text{C}$ )	-30~70°C	<b>50</b>	<b>57</b>	<b>43</b>
	+100~300°C	<b>61</b>	<b>72</b>	<b>55</b>
Tg (°C)		767	641	688
At (°C)		814	666	718
Coloring	$\lambda_{80}$ ( $\lambda_{70}$ )	395	375	385
	$\lambda_5$	320	300	-
Chemical Properties	RW (P)	1	1	1
	RA (P)	<b>1</b>	<b>4</b>	<b>3</b>
	W (S)	2	1~2	2
	SR	4.0	52.0	4.0
	PR	1.0	3.0	3.0
Specific Gravity		3.85	3.60	3.36
Knoop Hardness Hk [Class]		<b>690[7]</b>	<b>650[7]</b>	<b>680[7]</b>
Abrasion Aa		<b>60</b>	<b>87</b>	<b>53</b>

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Existing LAL glasses have class 4 or 5 RA (P) and may be difficult to be used for some kinds of Automotive camera lenses. S-LAL21 is the first glass we've attained class 1 RA (P).

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