

EMPOWERING



SOLAR EFFICIENCY

MODULE MATERIAL

# PV200

High strain point glass substrate for photovoltaic solar cell

太陽電池基板用高歪点ガラス

Much less deformation in the heating process than soda-lime glass. Small variations in thermal shrinkage after the heating process. Suits processes for large-size substrates.

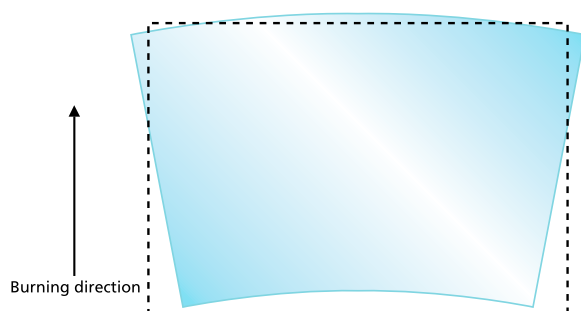
通常のソーダライムガラスと比較し、加工工程での変形が非常に小さく、また加熱工程での熱収縮率のばらつきが小さい特徴を持っています。

## PRODUCT DESCRIPTION

Applications Back glass for thin film photovoltaic module (CIGS)

用途 CIGS型太陽電池用ガラス基板

## Transformation of the glass in heat-treatment process (550°C-600°C)



### <Normal Glass>

Distortion point temperature 511°C  
Asymmetry transformation  
Shrinkage rate unevenness size



### <PV200>

Distortion point temperature 570°C  
Symmetry transformation  
The shrinkage rate unevenness small

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## Characteristics of PV200

Item			PV200	AS Soda-lime glass
Thermal Properties	Thermal Expansion Coefficient (50~350°C, 10 <sup>-7</sup> /°C)		83	87
	Strain Point	(°C)	570	511
	Softening Point	(°C)	830	735
	Annealing Point	(°C)	620	554
Mechanical Properties	Density	(g/m <sup>3</sup> )	2.77	2.49
	Young's Modulus	Gpa	76	72
	Shear Modulus	Gpa	31	29
	Poisson's Ratio		0.21	0.21
Electrical Properties	Bulk Resistivity at 150°C	log ρ (Ω · cm)	12	8.5
	Dielectric Constant at 1MHz		7.9	7.6
Optical Properties	Refractive Index No		1.55	1.52