

Glass that Goes beyond Glass  
超越玻璃的玻璃

Tough  
超強

Thin  
超薄

Light  
超輕

Coating  
鍍膜

化學強化專用玻璃

Glass for Chemical Strengthening

**Dinorex<sup>TM</sup>** [霸王龍]

— 藉由強度開拓玻璃的應用前景! —

Tougher than Conventional Glass!



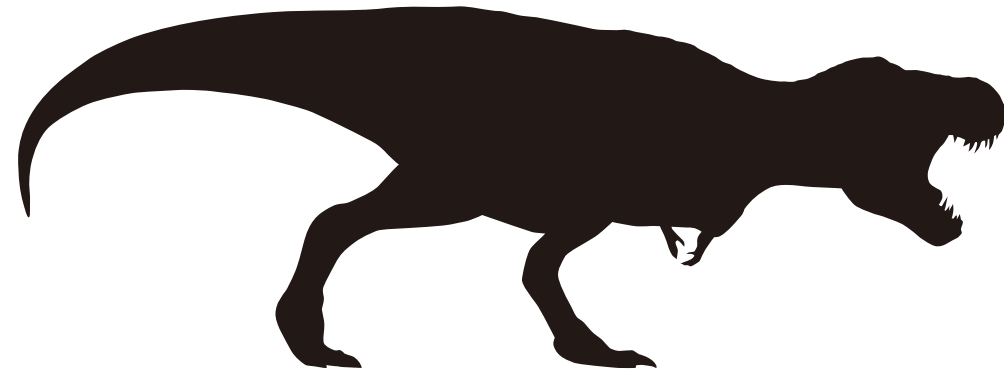
Tough

GLASS FOR FUTURE

 日本電氣硝子

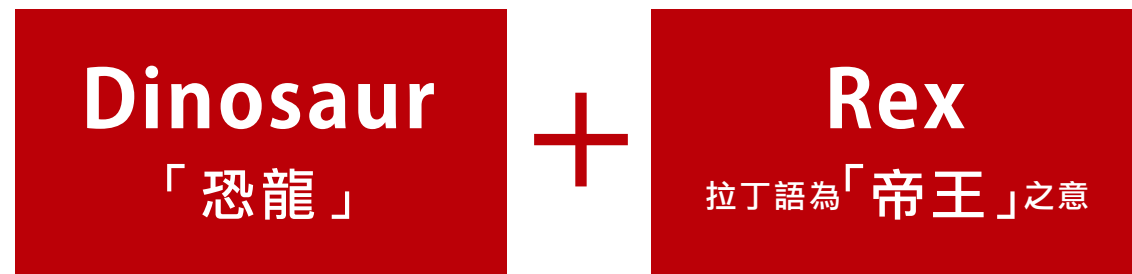
# 追求化學強化專用玻璃的極致，實現抗衝擊耐刮的強度！

High Resistance to Shocks and Scratches, Achieved by Chemical Strengthening!



## Dinorex™ [霸王龍]

Dinorex™是Dinosaur(恐龍)+Rex(拉丁語為「帝王」之意)組合而成的名稱。  
Dinorex™ was named by integrating the words "Dinosaur" and "Rex" meaning 'King' in Latin.



[ Dinorex / dáinoreks(霸王龍) ]

### 什麼是Dinorex™【霸王龍】？

Dinorex™是一種化學強化專用玻璃，被開發於作為保護智慧型手機和平板電腦等手持行動裝置以及車載顯示器的保護玻璃，保護螢幕免遭刮傷和衝擊。

#### What is Dinorex™?

Dinorex™ is glass for chemical strengthening developed for use as cover glass for mobile handsets such as smartphones and tablets, onboard vehicle displays, and other new applications. Dinorex™ protects such devices from impact shocks and scratches.



### 更強、更透明：Dinorex™的特點

Stronger, More Transparent: Features of Dinorex™

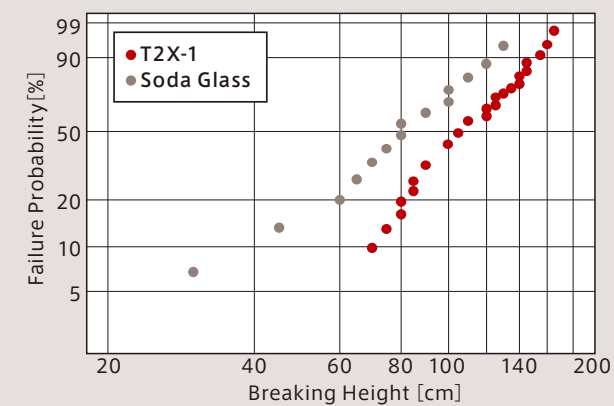
**強化性能優異**  
(High CS, Deep DOL)  
Superior Chemical Strengthening Properties

**高生產效率**  
High Productivity

**高穿透率**  
High Transmittance

### ■落球測試 Ball Drop Test

(弱) Soda Glass << Dinorex™(T2X-1) (強)  
(Weak) Soda Glass << Dinorex™(T2X-1) (Strong)



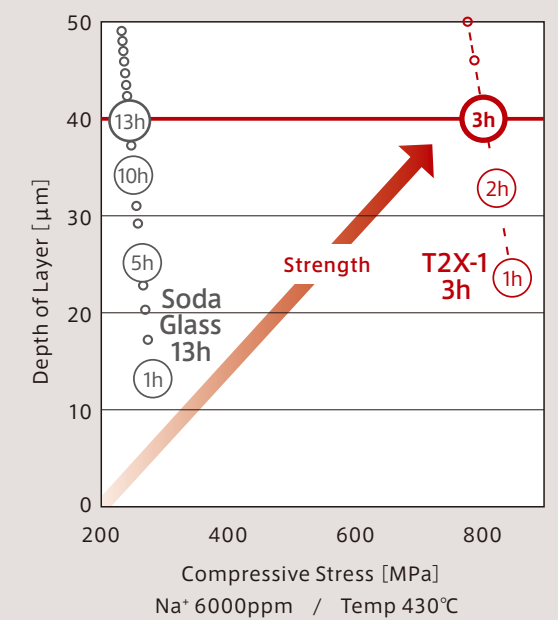
#### Test condition

Sample size : 130mm-65mm-0.7mmt  
Ball weight : 130g

T2X-1	CS:846MPa	DOL:48μm
Soda	CS:553MPa	DOL:11μm

### ■強化時間與強化性能的推移 Ion Exchange Time vs. CS Property

Dinorex™(T2X-1)可以縮短強化時間。→提高生產效率  
Dinorex™(T2X-1) reduces the time for strengthening.  
→ High Productivity



※The above figures are measurements, not guaranteed.

### 用途 Uses



智慧型手機  
Smartphones



平板電腦  
Tablets



車載顯示器  
Onboard Vehicle Displays



智慧手機鏡頭蓋  
Lens Cover for Smartphones

## “玻璃+鍍膜”—拓展玻璃的用途和可能性

可於玻璃上塗布各類功能膜 (ITO、抗反射、防眩、防污等)。

亦有遮斷紫外線或遮斷紅外線等加工，具多樣化的應用領域。

多樣的玻璃材料及形狀再加上鍍膜技術，可發揮玻璃的最大可能性，提供具有高附加價值的玻璃材料，藉以滿足各種新型態的需求。

### Glass Coating Technology — Pursuing Possibilities in Glass Uses

Coating with various functions (ITO, Anti-Reflection, Anti-Glare and Anti-Fingerprint) can be added to the glass. Application for various purposes, such as cutting only ultraviolet rays or infrared rays, is also available. By adding the coating technologies to an abundant range of glass materials and shapes, we will provide high value-added glass materials that can satisfy various new purposes.



Anti-Glare & Anti-Reflection & Anti-Fingerprint Coated Dinorex™

## Properties

Glass Code		T2X-1	
Density		g/cm <sup>3</sup>	2.45
Strain Point		°C	560
Annealing Point		°C	610
Softening Point		°C	860
Thermal Expansion Coefficient	30~380°C	×10 <sup>-7</sup> /°C	91
Young's Modulus		GPa	70
Shear Modulus		GPa	29
Poisson's Ratio		—	0.2
Vickers Hardness (Unstrengthened)	200g load	—	590
Vickers Hardness (Strengthened)	200g load	—	670
Fracture Toughness		MPa·m <sup>0.5</sup>	0.68
Dielectric Constant	1MHz, 25°C	—	7.7
tanδ	1MHz, 25°C	—	<0.03
Volume Resistivity Logp	150°C	Ω·cm	7.1
Photo-elastic Constant		nm/cm/MPa	29.5
Light Transmittance	t=0.7mm, 550nm	%	>91.5
Refractive Index (nd)	587.6nm	—	1.50
Specific Heat	25°C	J/kg·K	810
Thermal Conductivity	25°C	W/m·K	1.1
Alkali Elution	JIS R3502	mg	0.1

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