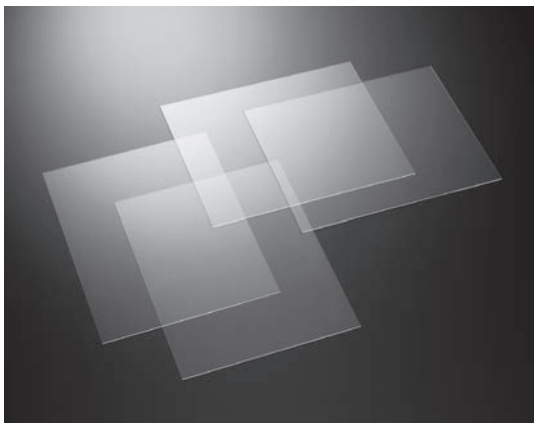
Glass for Chemical Strengthening

Ref. No. 2410-08E

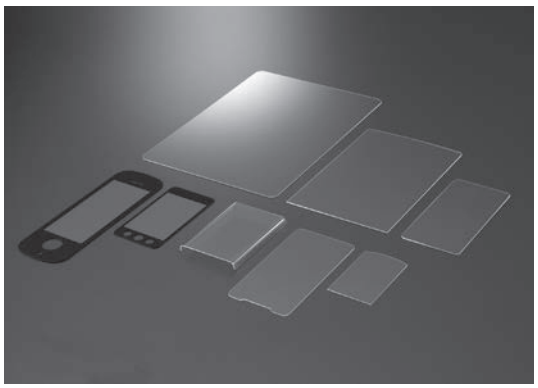
Dinorex™

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.



Features

- **Dinorex™ T2X-1**
  - · Superior chemical strengthening properties (High CS, Deep DOL)
  - · High productivity
  - · High transmittance
- **Dinorex™ T2X-7**
  - · Original chemical strengthening technology (DIOX)
  - · High drop strength on rough surfaces
  - · Optimized for 3D molding



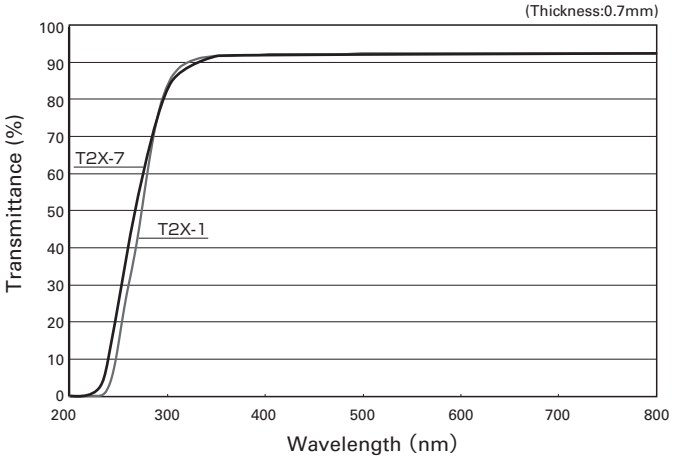
Dinorex™ in various processed forms

Properties

Properties/Glass Code			T2X-1	T2X-7
Density		$\times 10^3$kg/m^3	2.45	2.40
Strain point		°C	560	590
Annealing point		°C	610	640
Softening point		°C	860	910
Coefficient of thermal expansion	30-380°C	$\times 10^{-7}$/K	91	74
Young's modulus		GPa	70	76
Shear modulus		GPa	29	31
Poisson's ratio		—	0.2	0.2
Vickers hardness (unstrengthened)	Hv (0.2)	—	590	590
Vickers hardness (strengthened)	Hv (0.2)	—	670	640
Fracture toughness		MPa・m$^{0.5}$	0.68	0.76
Dielectric constant	1MHz, 25°C	—	7.7	6.7
tan δ	1MHz, 25°C	—	<0.03	0.01
Volume resistivity Log ρ	150°C	Ω・cm	7.1	7.7
Photo-elastic constant		nm/cm/MPa	29.5	29
Light transmittance	t=0.7mm, 550nm	%	>91.5	>91.5
Refractive Index nd	587.6nm	—	1.50	1.50
Specific heat	25°C	J/kg・K	810	820
Thermal conductivity	25°C	W/m・K	1.1	1.1
Alkali elution	JIS R3502	mg	0.1	0.1

us regarding dimensions.

Transmittance



Refractive Index

Optical properties refractive index	T2X-1	T2X-7
n_h (404.7nm)	1.52	1.52
n_g (435.8nm)	1.51	1.51
n_F (486.1nm)	1.51	1.51
n_e (546.1nm)	1.51	1.50
n_d (587.6nm)	1.50	1.50
n_C (656.3nm)	1.50	1.50
n_{785} (λ)	1.50	1.50
n_{1310} (λ)	1.49	1.49
n_{1550} (λ)	1.49	1.49

Dielectric Constant and tan δ

	T2X-1		T2X-7	
Frequency [MHz]	Dielectric constant [–]	tan δ [–]	Dielectric constant [–]	tan δ [–]
1	7.7	<0.03	6.7	0.01
2450	7.3	<0.03	6.6	0.01
6000	7.4	<0.03	6.5	0.01
10000	7.4	<0.03	6.5	0.01
28000	7.2	<0.03	6.4	0.02

Room temperature

Chemical Durability

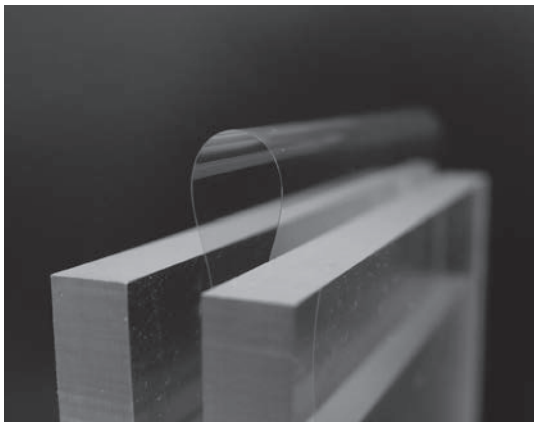
Reagent	Time	Temperature [°C]	Weight loss[mg/cm^2]	
			T2X-1	T2X-7
5wt% NaOH	6hrs.	80	0.6	1.5
10wt% HF	20min.	20	17	28
110BHF	20min.	20	0.9	0.8
5wt% HCl	24hrs.	80	0.1	20

Ultra-thin Glass for Chemical Strengthening

Ref. No. 2410-09E

Dinorex UTG™

Dinorex UTG™ is glass for chemical strengthening developed for use as cover glass for foldable displays. Dinorex UTG™ is formed by overflow technology cultivated in the manufacturing of thin glass for displays, and it has excellent bending properties due to its extremely smooth surface and uniform thickness. It contributes to the realization of highly reliable foldable displays and can be used with glass diaphragms.

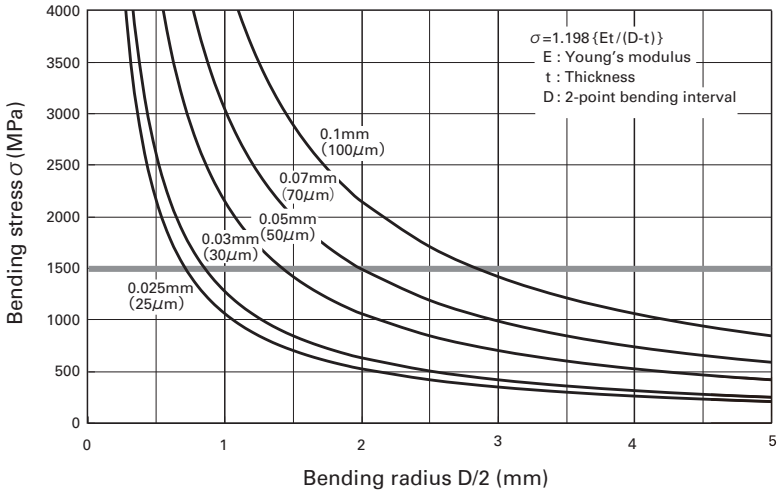


Features

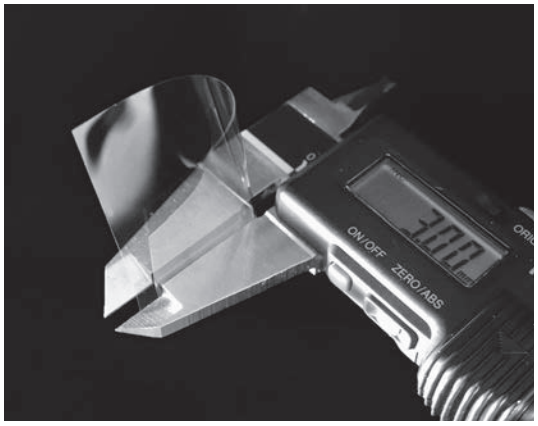
- Superior smooth surface
- Uniformity of thickness distribution
- Excellent bending properties

Vast flexibility due to overflow forming and chemical strengthening

Stress generated by two-point bending



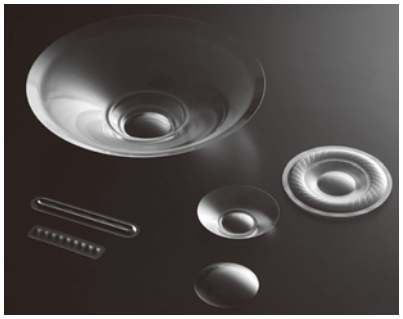
With the combination of a superior smooth surface and thickness distribution uniformity achieved through overflow forming, followed by chemical strengthening and a scratch elimination process, breaking stress of 1500MPa or more is realized, and enormous degrees of foldability are possible.



Can be bent to a diameter under 3mm (≦R1.5)

Images of Application Examples

Cover glass for foldable displays



Glass diaphragm for speaker

Specifications

- Thicknesses : 25, 30, 35, 50, 70, 100-250μm
- Shipping forms : Sheet forms