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AL-223 TechnicalBulletin

Description of Pyrex® Brand 7740 Glass Used in Corning Labware

Pyrex® Brand 7740 Glass Borosilicate - Low Expansion - Type I Glass

Of the hundreds of commercial glasses produced, Code No. 7740 borosilicate glass comes closest to being the ideal glass for most laboratory applications.

With proper care, it will withstand nearly all temperatures used in normal laboratory use. It is highly resistant to chemical attack. Its low coefficient of expansion allows it to be manufactured with heavy walls, giving it mechanical strength, while retaining reasonable heat resistance. And, it is a glass that can be fabricated more easily than most other glasses, thus making it more economical.

Light Transmittance

The visible light transmittance (400-760NM) of Code No. 7740 glass is 92% at 2mm thickness.

Standards

Type I, Class A Borosilicate conforming to federal specification DD-G-54 Ib and ASTM E-438. Also meets the U.S. Pharmacopoeia specs for Type I Borosilicate Glass.

Chemical Composition

Composition	(percent approx.)
SiO_2	80.6%
B_2O_3	13.0%
Na_2O	4.0%
$A_{12}O_3$	2.3%
Miscellaneous Traces	0.1%

Physical Properties

Coeff. of Exp.	32.5×10^{-7}cm/cm/°C
Strain Point	510°C
Anneal Point	560°C
Soften Point	821°C
Density	2.23 g/cm_3
Youngs Mod.	6.4×10^3 Kg/mm^2
Refract. Index	1.474 @ Sodium D Line
Temp. Limits	490°C (Extreme Service)
	230°C (Normal Service)
Max. Thermal Shock	160°C

Applications

Designed for use in all products requiring very high resistance to strong acids, alkalis and products intended for use in heat applications such as autoclaves, hot plates and open flame.

Products

Beakers, burets, bottles, centrifuge tubes, condensers, cylinders, desiccators, dishes, flasks, fritted ware, funnels, ground joints, jars, stopcocks, tubing and other assorted products.

Warnings

1. Thick-walled ware, such as bottles, jars and desiccators, should not be heated over a flame, a hot plate, or other comparable source of heat.
2. Do not use hydrofluoric or hot phosphoric acid in glass.
3. Do not use scratched or abraded glassware.
4. Hot alkalis will etch glass.