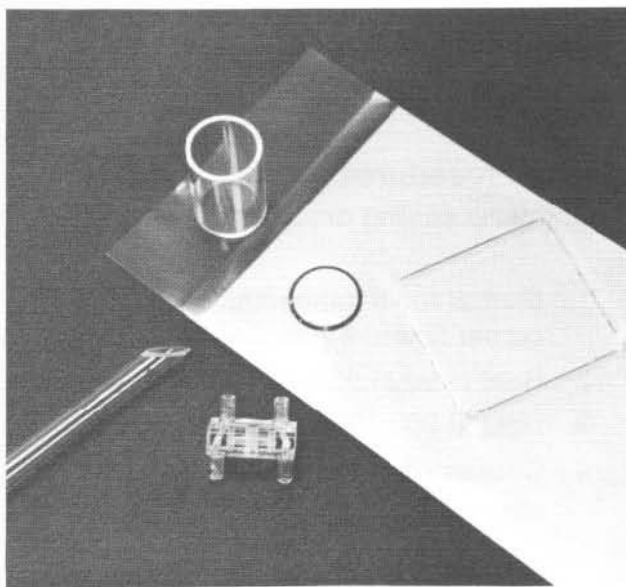


G-1015 GLASS TRANSFER TAPE

General Information

G-1015 Glass Transfer Tape is specifically designed for sealing and joining quartz (fused silica) parts. The product may also be used for glazing, sealing and joining other materials (such as low expansion ceramics) having a $30-35 \times 10^{-7}$ coefficient of thermal expansion. This material is a pure borosilicate glass type with a low thermal expansion value. When applied in a thin layer (.001" - .002") to quartz, the quartz parts can be joined without stress due to thermal expansion mismatch. The transfer tape eliminates the need for direct fusing of quartz parts, which tends to cause distortion. After the sealing is completed, a hermetic seal is obtained between the quartz parts.



Uses

G-1015 Glass Transfer Tape is currently being used in the assembly of lasers, optical cells (cuvettes), constant temperature cells, transducers, lamps, scientific glassware and various other optical and electronic devices.

Physical Properties

Glass Family:	Borosilicate
Glass Type:	Vitreous
Annealing Point:	495°C
Softening Point:	720°C
Working Temperature:	900°C - 950°C
Coefficient of Thermal Expansion:	32×10^{-7} in/in/°C
Dielectric Constant, 1 megacycle, 25C:	4.0

Tape Application

After separating the release paper, the parts are placed on the adhesive layer of the glass tape. Subsequently they are pressed, using a pressure in the range of 50 - 250 psi for a period of no longer than 1 minute. It is recommended that an arbor press be used with rubber pressing plates having a durometer between 45 and 95. These factors will vary, depending on the individual application. After separation, the parts will have a sharp definition of the outline of the part and will separate at the pressed areas.

For large production runs, G-1015 tape preforms can be made to order. Custom designed machinery for applying the tape is also available, please contact the factory for details.

Sealing Procedures

The following sealing procedure is recommended:

1. Start at room temperature with 5 - 15 psi of weight on the parts to be sealed to ensure proper flow of the molten glass.
2. Heat to 900 - 950°C in 60 - 90 minutes using air or inert gas atmosphere.
3. Hold at 900 - 950°C for 60 - 90 minutes.
4. Cool slowly - minimum cooling time is 60 - 90 minutes. Slower cooling (such as overnight) is also suitable.

The above firing cycle is a general recommendation. The amount of weight needed and mass of the parts to be sealed may require longer or shorter heat-ups and holds. Experiment to determine the ideal cycle for your particular sealing requirement. A ramp (short hold period) at 475°C for 10 - 15 minutes may be used to burn-off the binder solids prior to continuing the 900 - 950°C heat-up. Depending upon part mass and geometry, this step may not be necessary. Recommended surface finish for quartz parts is 1600. No high polishing.

Ordering Information

G-1015 Glass Transfer Tape is made to order. A .001" thickness is generally recommended for joining quartz. Thicknesses through .005" can be manufactured for joining other materials. 500 in² is the minimum order quantity. Maximum width is 10". Slitting to width is available (0.125" minimum) and may incur additional charges depending upon quantity. Please phone or fax for a quote.



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