

Specialty glass | RGD | Production

## Specialty glasses

### High quality glass for photonics and sensing applications

Trajan Scientific and Medical works in collaboration with the Institute for Photonics and Advanced Sensing to provide high quality specialty glass for high non-linearity applications, waveguide use and laser applications.

Glasses are melted (up to 1,400°C) under a controlled atmosphere to ensure a high-purity and low water content, and are available in a range of extruded forms.

Glasses can be doped with rare earth elements including Erbium (Er), Holmium (Ho) and Thulium (Tm), using both glass melt quenching technique and/or modified chemical vapour deposition (CVD).

## Specialty glasses

Glass type	Physical properties	Optical properties
Tellurite (73TeO <sub>2</sub> – 2017nO – 5Na <sub>2</sub> O – 2La <sub>2</sub> O <sub>3</sub> (mol%))	Low melting temperature	Visible IR, high index
Germanate	Higher mechanical stability	High index
ZBLAN heavy metal fluoride	Higher mechanical stability	Visible-mid IR, low index
Indium fluoride (InF <sub>3</sub> )	Higher mechanical stability	Mid IR
Fluoride phosphate	Low melting temperature	Radiation sensitive, UV

### Tellurite glass

#### Products and applications

Mid IR fibers, high-optical non-linearity fibers, doped fibers, laser glass, mid-IR glass, doped glass, high non-linearity glass.

Optical properties	Transmission range	0.4-4.0 μm
	Refractive Index at 1,550 nm	1.98
Thermal properties	Glass transition temperature (Tg)	315°C
	Thermal expansion	170 x 10
Physical properties	Density	5.35 g/cm <sup>3</sup>



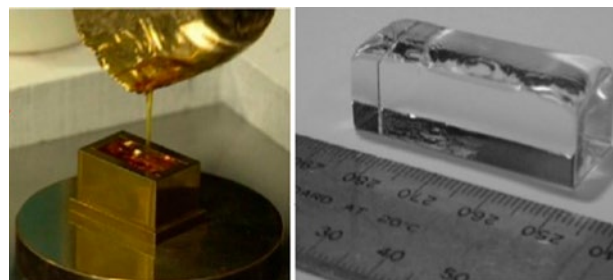
Tellurite glass

### ZBLAN glass

#### Products and applications

Mid IR fibers, doped fibers, laser glass, mid IR glass, doped glass.

Optical properties	Transmission range	0.30-5.0 μm
	Refractive Index at 1,550 nm	1.51
Thermal properties	Glass transition temperature (Tg)	265°C
	Thermal expansion	200 x 10
Physical properties	Density	4.50 g/cm <sup>3</sup>



ZBLAN glass

## Trajan Scientific and Medical

### Science that benefits people

Trajan Scientific and Medical's focus is on developing and commercializing technologies that enable analytical systems to be more selective, sensitive and specific for biological, environmental or food related measurements, especially those that lead to portability, miniaturization and affordability.

Building on complementary and technically strong foundations in core glass fabrication capabilities, Trajan has partnered with the Institute for Photonics and Advanced Sensing to be a globally recognized leader in the development and manufacture of high-quality, high-value critical glass components and sensors.