



Institute for Photonics & Advanced Sensing (IPAS)

# Tellurite Glass

[www.ipas.edu.au](http://www.ipas.edu.au)

IPAS specialises in producing high-quality tellurite glass for high nonlinearity applications (e.g. supercontinuum generation) and laser applications. The glasses are melted under a controlled atmosphere to ensure high-purity and low water content. This glass is also available in a range of extruded forms. Tellurite glass has a wide transmission range of 0.4 to 4µm.

IPAS can produce undoped or rare-earth doped tellurite glass blocks of up to 50mL (300g). These are available in a range of shapes as required by the end user. Rare earth iron dopants include: Erbium, Holmium and Thulium (others on request). For pricing and availability, please contact [Luis Lima-Marques](mailto:Luis.Lima-Marques@adelaide.edu.au).



## COMPOSITION

73TeO<sub>2</sub> - 207nO - 5Na<sub>2</sub>O - 2La<sub>2</sub>O<sub>3</sub> (mol%)\*

PROPERTIES		TELLURITE GLASS
Optical	Transmission range	0.4~4.0µm
	Refractive index at 1550nm	1.98
Thermal	glass transition temperature	315°C
	Thermal expansion	170x10 <sup>-7</sup> /°C
Physical	Density	5.35g/cm <sup>3</sup>

$$n^2 = A + \frac{B}{1 - C/\lambda^2} + \frac{D}{1 - E/\lambda^2}$$

A = 2.42489  
 B = 1.5004  
 C = 0.0525775  
 D = 2.32884  
 E = 225

## The Institute for Photonics & Advanced Sensing (IPAS)

IPAS brings together physicists, chemists and biologists to pursue a new transdisciplinary approach to science.

We are developing novel photonic, sensing and measurement technologies that are changing the way science is done within traditional discipline areas, stimulating the creation of new industries, and inspiring a new generation of scientists to be engaged in solving real-world problems.

IPAS research targets applications in four key market areas: defence and national security, environmental monitoring, preventative health, food and wine. We have world leading facilities for the production of novel soft and silica fibres, surface functionalisation and sensor development.



\*M.R. Oermann, H. Ebendorff-Heidepriem, Y. Li, T.-C. Foo, T.M. Monro, "Index matching between passive and active tellurite glasses for use in microstructured fiber lasers: Erbium doped lanthanum-tellurite glass", Optics Express 17 (18), 15578-15584, August 2009.