ACRYLIC PLASTIC
LIGHT GUIDE MATERIAL

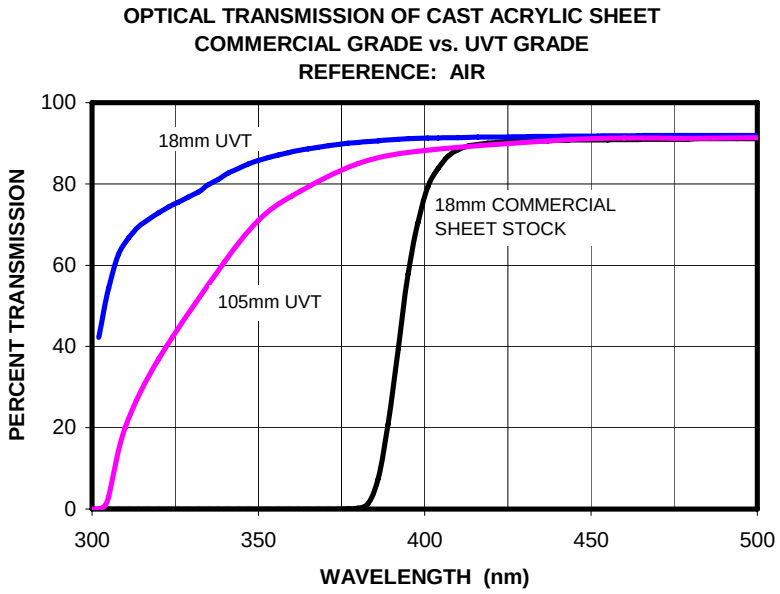
This clear and colorless plastic is commonly used in fabricating light guides for plastic scintillators. It generally has good optical clarity and good mechanical properties. It has very little natural scintillation response to ionizing radiation.

The material is also known as PMMA (polymethylmethacrylate) and is often referred to in a generic sense by the many commercial product names under which it is manufactured. Some of these are Lucite®, Plexiglas©, Perspex®, and Rohaglas®. It is normally made as cast sheet stock with UV absorbing additives for general purpose commercial applications When the UV absorbers are omitted to obtain optical transmission into the ultraviolet regions, the product is often referred to as UVT. Sheet stock up to about 6mm (¼") thick are also made by extrusion processes. The best optical properties are obtained with the cast material. Also, acrylic sheet are occasionally used in fabricating tanks for selected liquid scintillators. In this case, the cast materials provide superior resistance to chemical attack.

The following plot demonstrates typical properties of these two classes of plastics.

General Properties of Cast PMMA

Specific Gravity at $20^{O}C$	1.190
Refractive Index, n_D (589nm)	1.492
Refractive Index (436nm)	1.502
No. H Atoms per cm^3, $x10^{22}$	5.73
No. C Atoms per cm^3, $x\ 10^{22}$	3.58
No. O Atoms per cm^3, $x\ 10^{22}$	1.43



ELJEN TECHNOLOGY
PO Box 870, 300 Crane Street
Sweetwater TX 79556 USA

Tel: (325) 235-4276 or (888) 800-8771
Fax: (325) 235-0701
Website: www.eljentechnology.com