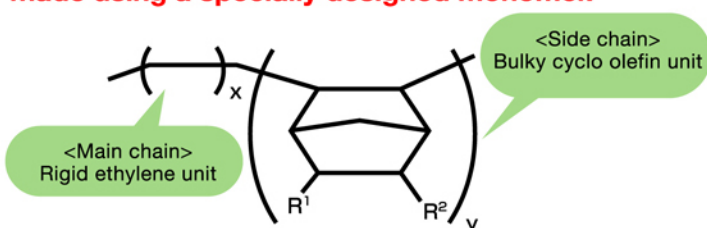


APEL™ is an ideal transparent material for lens applications because of its outstanding optical properties. It is also used widely for medical and functional packaging use.

APEL™: Structure & Features

APEL™ is an amorphous polyolefin made using a specially designed monomer.

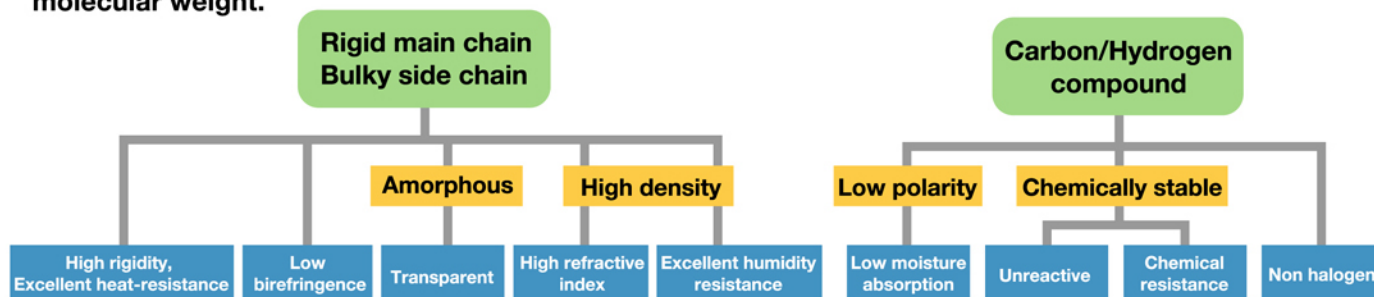


Performance comparison of resins for optical applications

Resin	Refractive index	Birefringence	Moisture absorption
APEL™	1.54	Low	<0.01%
PMMA	1.49	Low	0.3%
PC	1.58	High	0.2%

APEL™ has excellent optical characteristics (high refractive index, low birefringence), and exhibits no dimensional change due to moisture absorption.

- **Amorphous** – molecules cannot assume a crystalline structure, due to the bulkiness of cyclo olefin.
- **Glass transition temperature can be controlled** by adjusting the proportion of α -olefin and cyclo olefin.
- **Flowability of the resin can be controlled** by adjusting molecular weight.



APEL™ Applications

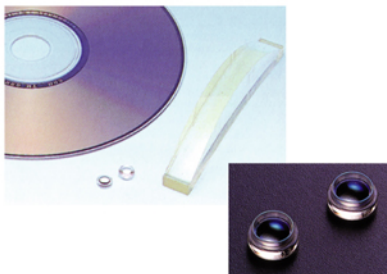
Optical products

Characteristics of APEL™

- Transparent
- Low birefringence
- High refractive index
- Low moisture absorption
- Excellent heat resistance

Product examples

- Pick-up lenses for CD & DVD players
- Laser printer lenses
- Mobile phone camera lenses



Medical packaging

Characteristics of APEL™

- Transparent
- Excellent moisture barrier
- Non halogen
- Excellent heat resistance

Product examples

- PTP
- Prefilled syringes
- Pharmaceutical bottles



Functional packaging

Characteristics of APEL™

- Transparent
- Easy to tear
- Shrinkage ability
- Excellent moisture barrier

Product examples

- Easy-tear films
- Shrink films
- Shrink labels



*Photo is for example only. APEL™ is not necessarily used in the products shown.