

## Request for supply

Date: 2010-05-14

	Required value
Object	plastic substrate
Material	plastic (e.g., PP, COP, PMMA)
Retardation type	uniaxial positive A plate
Transmission:	above 89-90% (in visible 400-700 nm spectrum)
Haze:	below 0.3%
Retardation in-plane:	$R_o \sim 275 \text{ nm} \pm 1 \text{ nm}$ (half wave plate for $\lambda=550 \text{ nm}$ )
Retardation out-of-plane:	$R_{th} \sim 275 \text{ nm} \pm 1 \text{ nm}$ (half wave plate for $\lambda=550 \text{ nm}$ )
Thickness	$10\text{-}50 \mu\text{m} \pm 1\%$
Special requirements	No inclusions, no bubbles, crystal free

### Reference information:

Target use: to be coated with water-based retardation coating

Target application: retardation film for IPS mode LCD

Above

$$R_o = (n_x - n_y) * d,$$

$$R_{th} = (n_x - n_z) * d,$$

where

$n_x$  – in-plane principal refractive index in slow axis direction

$n_y$  – in-plane principal refractive index in fast axis direction

$n_z$  – principal refractive index in normal direction to the substrate plane

$d$  – substrate thickness, nm