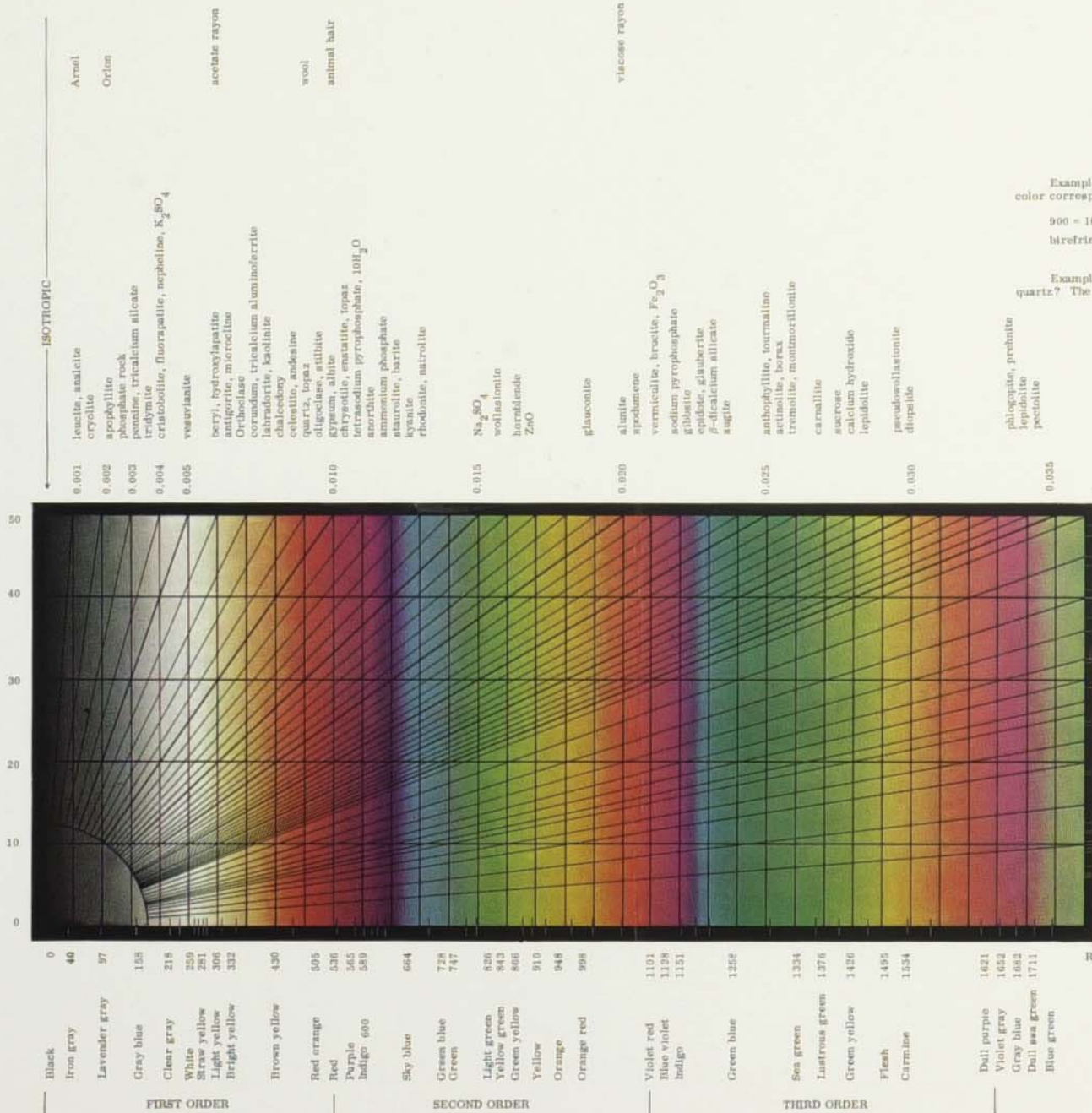


Birefringence
 $n_2 - n_1$

THICKNESS, μm

ISOTROPIC



MICHEL LÉVY BIREFRINGENCE CHART

$$r = 1000 \times B$$

where r = retardation in nm

t = thickness in μm

$$B = \text{birefringence, } n_v - n_o$$

$$\text{or } n_t - n_u$$

Example 1: An unknown cylindrical fiber, 15 μm in diameter, shows a yellow interference color corresponding to 900 nm retardation.

900 = 1000 (15) X birefringence
birefringence = 0.06 = Nylon

Example 2: What interference colors would be observed on a sample of "through 325 mesh" quartz? The birefringence of quartz is 0.009; assume the thickness will range from 0-40 μm .

$$\text{retardation} = 1000 (0.40) \times 0.009$$

$$\text{retardation} = 0-360 \text{ nm}$$

Interference colors = black, gray, white, yellow

Retardation, μm or nm