

46. Since (using the result of problem 3 in Chapter 39)

$$E_{\text{photon}} = \frac{hc}{\lambda} = \frac{1240 \text{ eV} \cdot \text{nm}}{140 \text{ nm}} = 8.86 \text{ eV} > 7.6 \text{ eV} ,$$

the light will be absorbed by the KCl crystal. Thus, the crystal is opaque to this light.