Sample Preparation for Infrared Spectroscopy

**Gases**

- Gases, or liquids with low boiling points, allowed to expand into an evacuated sample cell

**Liquids**

- “Neat”: pure liquid used
- solid NaCl plates most commonly employed as “windows” (NaCl does not absorb infrared light in the mid-IR region)
- a solution of the liquid sample can sometimes be used, but solvent may also absorb in the infrared region
- water and alcohols (e.g., methanol, ethanol, etc.) seldom used as solvents because they absorb strongly in the infrared region and dissolve NaCl

**Solids**

- a solution of the solid sample can sometimes be used (but also must consider the properties of the solvent)
- “Nujol mull”: dispersion of the solid in a heavy hydrocarbon liquid (Nujol); particle size of the suspended solid must be very small to prevent light scattering
- “KBr press”: solid sample mixed with solid KBr (transparent in the mid-IR region), then ground and pressed in a special die to yield a transparent “window”