

§ 8.3.2 Sample preparation and analysis method

1. Gas sample

Gas sample can be analyzed with gas sample chamber.

2. Liquid sample

For non-volatile liquid samples, one droplet of sample can be dropped on the salt membrane for further analysis. Liquid

samples can also be directly analyzed with liquid sample chamber.

3. Solid sample

(1) White oil method

(2) KBr salt membrane method.

(3) Thin membrane method

For normal solid organic samples, the sample can be converted to powdered form together with KBr powder and then compressed to a

transparent KBr film for further analysis.

For those samples that cannot be powdered, such as inorganic powder, dyes, color, diffused reflection enclosure can be used for analysis.

Highly transparent solid membrane sample can be directly analyzed with

diffuse reflectance method.

Those samples that cannot be powdered, such as coating on solid surface, can be analyzed with reflection method.

Key points: Application and theory of IR, the vibration equation and calculation, the vibration mode of each functional groups, factors that affect the peak positions.

Questions: There are 4 vibration modes for CO₂ molecule, but why there are only 2 peaks on its IR spectroscopy?