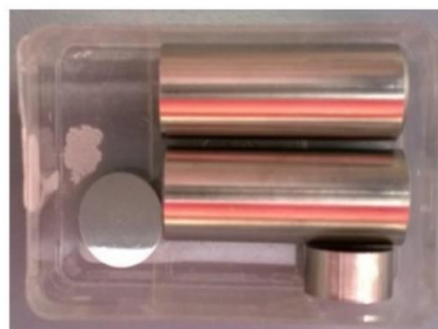


Sample Pellet Preparation

- 50 – 200mg of a solid sample is required for IR analysis
- Can analyse samples as small as 10 μ g but must be mixed with a transparent matrix e.g. KBr. This transparent matrix is necessary to add weight to the sample being analysed but does not show up in the IR spectra.
- The solid sample is crushed into a fine powder using a marble mortar and pestle under a UV lamp. The sample must be prepared under a UV lamp in order to evaporate any water molecules within the sample, i.e. dry the sample.



- 1 of the pellets is placed into the die, smooth side facing up.
- Using a spatula a small amount of sample is placed into the die. (just enough sample to cover the surface of the pellet)



- The 2nd pellet is then placed into the die, smooth side facing down towards the sample.
- The ram is then inserted into the die to hold the 2 pellet together.



- The die is then placed into the hydraulic press and held in position by tightening the bleed screw.
- In order to bind the sample and make an IR disc, pressure is required. Using the handle the pressure is pumped to approx. 10 tons (10kg x 1000) and is left for 1 minute.
- After 1 minute the pressure is released using the hand screw and the die is removed from the hydraulic press.
- The die is then carefully disassemble.



- The disc is carefully removed from the pellet, to avoid breakage and placed in the appropriate cell/disc holder.
- The sample is now ready to be placed into the IR spectrophotometer for IR analysis.

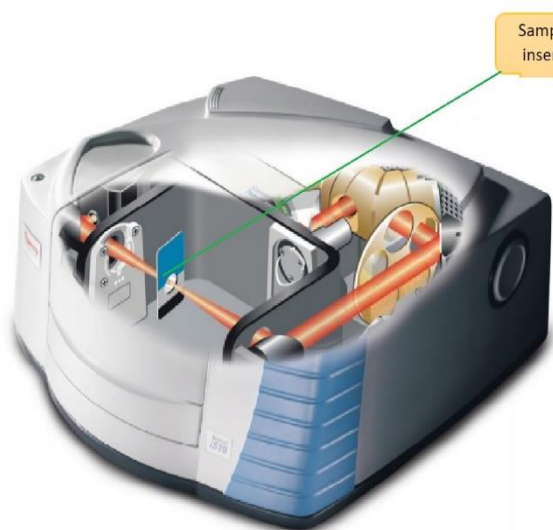


Liquid sample preparation

- 1-2 drops of neat sample is placed between 2 salt plates.



- Salt plates (NaCl) are the most popular choice for non-aqueous liquids because they are transparent to IR radiation. This means the plates will not absorb any of the radiation and will not appear in the resulting IR spectra, therefore does not affect results.
- The salt discs are squeezed together to form a thin film. The discs are held together by capillary attraction from the sample.
- The plates are then placed into a screw-tight holder, which can then be inserted into the IR spectrophotometer for IR analysis.



- Once analysis is complete the salt plates are cleaned with acetone, water is not used as can dissolve the salt plates.