



IMPROVING YOUR MOISTURE RESULTS

Moisture content has a major impact on the quality and shelf life of many products such as pharmaceuticals, plastics and foods. Therefore, monitoring of the moisture content is very important to not only maintain consistency from batch-to-batch but is mandatory to ensure safety to consumers.

Moisture analysis may seem difficult at first but once you have built your method and prepared your samples correctly, you will find that this principle is an effective and efficient way to assure the quality of your products.

TYPES OF INFRARED MOISTURE ANALYZERS

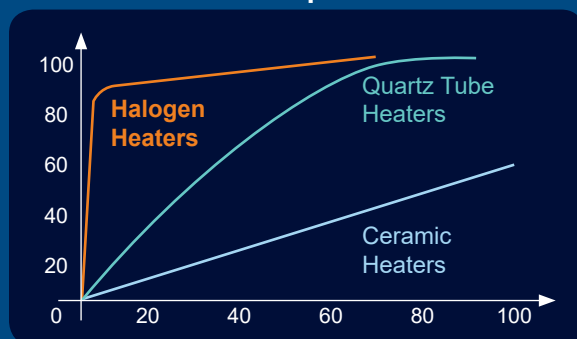
- 1 Ceramic Elements
- 2 Quartz Tubes
- 3 Metal Sheath & Tubes
- 4 Halogen Lamps

Halogen lamps unlike other common IR elements:

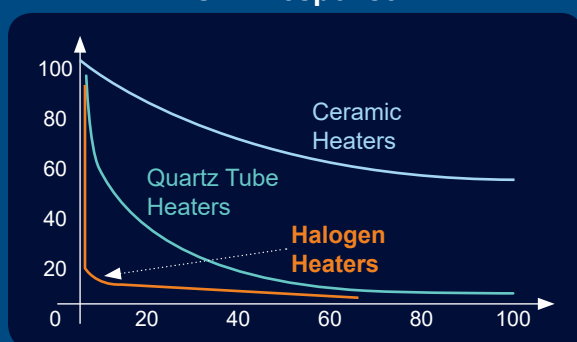
- Quickly heat up and cool down without burning the samples, saving both time and money.
- Heating configuration and wavelength range is optimal for water absorption, allowing for even evaporation repeatable results.
- The right speed allowing for even evaporation and repeatable results.

TIP: Secondary Radiation Assist (SRA) in A&D Moisture Analyzers helps distribute heat evenly across the sample. Without SRA, the parts of the sample closer to the halogen lamp will heat up more quickly..

ON Response



OFF Response



LOCATION, LEVEL, & CALIBRATE

A moisture analyzer has two precise components inside – **1 SHS Weighing Sensor** and **2 IR Thermal Heater**, therefore location and calibration are pinnacle to achieving the best results.

- Your weighing surface should be stable and level.
- Sufficient distance from flammable materials.
- Use a reference weight on the weighing pan and compare that value to the displayed value to verify repeatability.
- Avoid airflows from open windows or air ducts.
- Temperature in the room must be constant. The relative humidity and temperature should be stable.
- Temperature should also be calibrated using a certified temperature calibrator.
- Sufficient space to avoid overheating.

ALL ABOUT THE PREP



Sample Collection

- Collected samples should be representative of the total quantity.
- Work quickly to avoid addition or evaporation of moisture.
- The more samples analyzed, the greater the reliability of the results.
- It is best to test the sample immediately after it is taken but if it can't be run immediately, store in an airtight, fully filled container.

TIP: Always use the same amount of samples to achieve good repeatable results. Typically between 5-10 grams of sample is sufficient for accurate results.



Sample Preparation

- Minimize any unnecessary sample preparation to reduce moisture inaccuracies.
- If necessary, samples may require grinding or cutting to increase the surface area during the drying process.
- Keep sample particles small and homogeneous.

TIP: You can break up the sample by using a mortar and pestle or simply by cutting with scissors. Be sure to control the sample environment to avoid loss or gain in moisture.

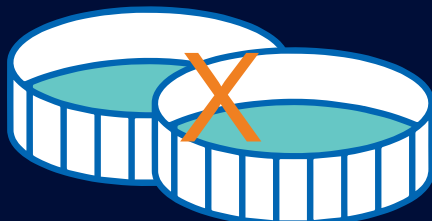
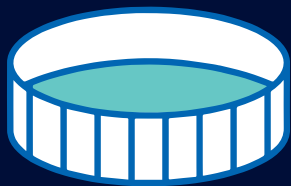


Sample Distribution

- Samples should be evenly distributed in a thin, even layer across the surface of the pan or filter pad.



- Avoid piling or excessive sample size.



Sample Pans & Filter Pads

- Use sample pans only once. This will help you to avoid influences in your measurement from previous sample residue.
- Use glass fiber filters with samples that are liquid, pasty, contain fats, and that tend to melt, form drops, form skins or are temperature sensitive.
- If samples develop crusts or skins try adding quartz sand or sandwich the sample between two filter pads.
- If liquid, try using an eyedropper to apply in a swirl or dot formation to increase repeatability.
- For samples that require extreme accuracy, filters should be pre-dried and stored in a desiccator before use.
- When using a filter pad, make sure you tare the pan and filter pad before applying the sample.

TIP: Disposable aluminum sample pans guarantee that your measurements are free from previous sample residue or cleaning agents like A&D Weighing pans: AX-30 Sample Pans 100ea. AX-31 Sample Pads 100 ea.