

Sample preparation for XRF analysis of polymers, granulates, fluffs and related materials

Contact us for more information

A wide variety of materials which are not already available in powder, liquid or solid disk form will need preparation for XRF analysis. Here are a couple of examples: plastics, fibers, alternative fuels and materials that are subject to RoHS/WEEE legislation. In most cases, crushing, grinding and pressing or fusing produce a robust, homogeneous and representative sample.

Crushing

Crushing of the material is required to reduce its size and allow further processing such as representative sub-sampling, homogenization and grinding.

Grinding

Grinding the material into a fine powder is required to minimize undesired particle size effects and allow further processing like pressing or fusion. Soft and malleable materials which cannot be ground may require cutting to be brought to a homogeneous, fine-grained condition. You may need a special cutting mill or knife mill to prepare such samples.

Pressing

Pressed powders are used in production control, especially if the calibration ranges are narrow.

Pellets can be pressed freely into Al cups or steel rings. Binders are usually required to achieve the necessary mechanical stability and robustness. Malvern Panalytical offers the [ultra-wax binder](#) for the preparation of high-quality pellets for the most demanding applications.

Hot-pressing

Granulates, fibers or powders from hot-moldable polymers (like PE or PP) are ideally prepared by hot-pressing into solid homogeneous disks. The choice of the correct temperature and pressure is critical for the reproducibility of the analytical method.

Loose powders and granulates in liquid cups

For screening or quick control of raw materials, you could analyze granulates and powders "as is" in liquid cups. This is a practical and quick way to prepare when accuracy and reproducibility are not the driving factors. However, keep in mind that there will be loss of intensity for light elements.



Why choose us?

**When you make the invisible visible,
the impossible is possible.**

Our analytical systems and services help our customers to create a better world. Through chemical, physical and structural analysis of materials, they improve everything from the energies that power us and the materials we build with, to the medicines that cure us and the foods we enjoy.

We partner with many of the world's biggest companies, universities and research organizations. They value us not only for the power of our solutions, but also for the depth of our expertise, collaboration and integrity.

With over 2200 employees, we serve the world, and we are part of Spectris plc, the world-leading precision measurements group.

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Service & Support

Malvern Panalytical provides the global training, service and support you need to continuously drive your analytical processes at the highest level. We help you increase the return on your investment with us, and ensure that as your laboratory and analytical needs grow, we are there to support you.

Our worldwide team of specialists adds value to your business processes by ensuring applications expertise, rapid response and maximum instrument uptime.

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- Sample and application consultancy



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