

How much does an X-ray fluorescence spectrometer cost per sample



Overview

How Much Does Xrf Cost Per Sample?

Budgeting For Precision In XRF analysis costs \$30-\$300 per sample. Learn how instrument type, sample prep, and data qual.

Key Takeaways

XRF analysis typically costs between \$30 and \$300 per sample, depending on instrument type, sample preparation, and required precision. Cost Breakdown

Portable XRF (pXRF):

- Designed for rapid, field-based screening and semi-quantitative analysis.
- Ideal for sorting, preliminary assessments, or situations where high precision is not critical.
- Cost per sample: approximately \$30 to \$75 . Laboratory-based XRF (WDXRF or high-end EDXRF):
- Provides high-precision, quantitative results suitable for research, quality control, and regulatory compliance.
- Requires more extensive sample preparation and longer analysis times.

- Cost per sample: typically \$75 to over \$300 .

Factors Affecting Cost

- Instrument Type: Handheld devices are cheaper per sample, while benchtop or floor-model lab instruments are more expensive but offer higher accuracy .
- Sample Preparation:
 - No preparation: Cheapest, but less accurate due to surface effects.
 - Pressed pellets: Grinding and pressing improves accuracy, increasing cost.
 - Fused beads: Most accurate, eliminates particle size effects, and is the most expensive method .
- Analytical Precision: Higher precision and lower detection limits increase per-sample cost.
- Complexity of the Sample: Heterogeneous or difficult-to-analyze materials may require additional preparation or longer measurement times, raising costs .

Summary

For budgeting purposes, expect \$30–\$75 per sample for portable XRF and \$75–\$300+ per sample for laboratory XRF, with the final cost influenced by preparation, precision, and the type of instrument used. Choosing the right method depends on whether speed and convenience or high accuracy and defensibility are the priority for your project .

Article Content

Rigaku Supermini200 Benchtop WDXRF Spectrometer

As the world's only high-power benchtop sequential wavelength dispersive X-ray fluorescence (WDXRF) spectrometer for elemental

Principle of XRF Analysis : Hitachi High-Tech Corporation

X-ray fluorescence analysis instruments can be largely categorized into wavelength-dispersive X-ray spectroscopy (WDX) and

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

