

Sample Preparation For Flame Atomic Absorption

Atomic bombings of Hiroshima and Nagasaki

to be the best choice "to appeal to their compatriots";. In preparation for dropping an atomic bomb on Hiroshima, the Oppenheimer-led Scientific Panel of

On 6 and 9 August 1945, the United States detonated two atomic bombs over the Japanese cities of Hiroshima and Nagasaki, respectively, during World War II. The aerial bombings killed between 150,000 and 246,000 people, most of whom were civilians, and remain the only uses of nuclear weapons in an armed conflict. Japan announced its surrender to the Allies on 15 August, six days after the bombing of Nagasaki and the Soviet Union's declaration of war against Japan and invasion of Manchuria. The Japanese government signed an instrument of surrender on 2 September, ending the war.

In the final year of World War II, the Allies prepared for a costly invasion of the Japanese mainland. This undertaking was preceded by a conventional bombing and firebombing campaign that devastated 64 Japanese cities...

Borate

tetraborate, or a mixture of both, can be used in borate fusion sample preparation of various samples for analysis by XRF, AAS, ICP-OES and ICP-MS. Borate fusion

A borate is any of a range of boron oxyanions, anions containing boron and oxygen, such as orthoborate BO_3^{3-} , metaborate BO_2^- , or tetraborate $\text{B}_4\text{O}_7^{2-}$; or any salt of such anions, such as sodium metaborate, $\text{Na}^+[\text{BO}_2]^-$ and borax $(\text{Na}^+)_2[\text{B}_4\text{O}_7]^{2-}$. The name also refers to esters of such anions, such as trimethyl borate $\text{B}(\text{OCH}_3)_3$.

Plutonium hexafluoride

reaction rate decreased with atomic number in the series uranium > neptunium > plutonium. Brown and Hill, using milligram-scale samples of plutonium, completed

Plutonium hexafluoride is the highest fluoride of plutonium, and is of interest for laser enrichment of plutonium, in particular for the production of pure plutonium-239 from irradiated uranium. This isotope of plutonium is needed to avoid premature ignition of low-mass nuclear weapon designs by neutrons produced by spontaneous fission of plutonium-240.

Inductively coupled plasma mass spectrometry

ionize the sample. It atomizes the sample and creates atomic and small polyatomic ions, which are then detected. It is known and used for its ability

Inductively coupled plasma mass spectrometry (ICP-MS) is a type of mass spectrometry that uses an inductively coupled plasma to ionize the sample. It atomizes the sample and creates atomic and small polyatomic ions, which are then detected. It is known and used for its ability to detect metals and several non-metals in liquid samples at very low concentrations. It can detect different isotopes of the same element, which makes it a versatile tool in isotopic labeling.

Compared to atomic absorption spectroscopy, ICP-MS has greater speed, precision, and sensitivity. However, compared with other types of mass spectrometry, such as thermal ionization mass spectrometry (TIMS) and glow discharge mass spectrometry (GD-MS), ICP-MS introduces many interfering species: argon from the plasma, component...

Detection limit

approaches for defining the detection limit have also been developed. In atomic absorption spectrometry usually the detection limit is determined for a certain

The limit of detection (LOD or LoD) is the lowest signal, or the lowest corresponding quantity to be determined (or extracted) from the signal, that can be observed with a sufficient degree of confidence or

statistical significance. However, the exact threshold (level of decision) used to decide when a signal significantly emerges above the continuously fluctuating background noise remains arbitrary and is a matter of policy and often of debate among scientists, statisticians and regulators depending on the stakes in different fields.

Polymer characterization

strain graph found through tensile testing. Sample preparation, including chain orientation within the sample, for tensile tests therefore can play a large

Polymer characterization is the analytical branch of polymer science.

The discipline is concerned with the characterization of polymeric materials on a variety of levels. The characterization typically has as a goal to improve the performance of the material. As such, many characterization techniques should ideally be linked to the desirable properties of the material such as strength, impermeability, thermal stability, and optical properties.

Characterization techniques are typically used to determine molecular mass, molecular structure, molecular morphology, thermal properties, and mechanical properties.

List of ISO standards 3000–4999

magnesium content — Flame atomic absorption spectrometric method ISO 3751:1976 Zinc ingots — Selection and preparation of samples for chemical analysis

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Sodium

used as a phase-transfer catalyst. Sodium content of samples is determined by atomic absorption spectrophotometry or by potentiometry using ion-selective

Sodium is a chemical element; it has symbol Na (from Neo-Latin natrium) and atomic number 11. It is a soft, silvery-white, highly reactive metal. Sodium is an alkali metal, being in group 1 of the periodic table. Its only stable isotope is ²³Na. The free metal does not occur in nature and must be prepared from compounds. Sodium is the sixth most abundant element in the Earth's crust and exists in numerous minerals such as feldspars, sodalite, and halite (NaCl). Many salts of sodium are highly water-soluble: sodium ions have been leached by the action of water from the Earth's minerals over eons, and thus sodium and chlorine are the most common dissolved elements by weight in the oceans.

Sodium was first isolated by Humphry Davy in 1807 by the electrolysis of sodium hydroxide. Among many other...

Radiation

there is a contrast in the absorption of X-rays. X-ray machines are specifically designed to take advantage of the absorption difference between bone and

In physics, radiation is the emission or transmission of energy in the form of waves or particles through space or a material medium. This includes:

electromagnetic radiation consisting of photons, such as radio waves, microwaves, infrared, visible light, ultraviolet, x-rays, and gamma radiation (γ)

particle radiation consisting of particles of non-zero rest energy, such as alpha radiation (α), beta radiation (β), proton radiation and neutron radiation

acoustic radiation, such as ultrasound, sound, and seismic waves, all dependent on a physical transmission medium

gravitational radiation, in the form of gravitational waves, ripples in spacetime

Radiation is often categorized as either ionizing or non-ionizing depending on the energy of the radiated particles. Ionizing radiation carries more...

List of ISO standards 2000–2999

calcium content — Flame atomic absorption method [Withdrawn without replacement] ISO 2070:1997 Aluminium oxide primarily used for the production of aluminium

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