

IODINE-125

Protein Iodination Grade

Iodine-125

In 0.1 to 0.5ml of ~0.1M NaOH solution
Carrier-free (~17Ci/mg)
>99% radionuclidic purity (<0.01% ¹²⁶I)
NEZ-033 \$33/0.5-2mCi \$50/5mCi
\$77/10mCi \$110/20mCi \$127/25mCi

Iodine-125 High Concentration

In ~0.1M NaOH solution
>350mCi/ml at highest concentration
Carrier-free (~17Ci/mg)
>99% radionuclidic purity (<0.01% ¹²⁶I)
NEZ-033H \$33/1-2mCi \$50/5mCi
\$77/10mCi \$110/20mCi \$127/25mCi

Iodine-125 Low pH

In pH 8-10 aqueous solution
>350mCi/ml at highest concentration
Carrier-free (~17Ci/mg)
>99% radionuclidic purity (<0.01% ¹²⁶I)
NEZ-033L \$33/1-2mCi \$50/5mCi
\$77/10mCi \$110/20mCi \$127/25mCi

IODINE-131

Protein Iodination Grade

Iodine-131

In 0.1 to 0.5ml of ~0.1M NaOH solution
12-25Ci/mg
>99% radionuclidic purity
NEZ-035A \$33/0.5-2mCi \$44/5mCi
\$51/10mCi \$57/20mCi \$62/25mCi

Iodine-131 High Concentration

In ~0.1M NaOH solution
500-750mCi/ml at highest concentration
>99% radionuclidic purity
NEZ-035H \$33/1-2mCi \$44/5mCi
\$51/10mCi \$57/20mCi \$62/25mCi

Iodine-125 and Iodine-131 are also available as elemental iodine, iodine monochloride, and calibrated reference sources.

NEN New England Nuclear
549 Albany Street, Boston, Mass. 02118
Customer Service 617-482-9595

NEN Canada Ltd., Lachine, Quebec
NEN Chemicals GmbH, Dreieichenhain, W. Germany.

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Facile Optimism

While I sympathize with the sentiments expressed by Philip H. Abelson in his editorial "Enough of pessimism" (9 Jan., p. 29), I cannot help feeling that uninformed optimism confronts us today with much more serious dangers than the pessimism which he deplores. In discussions of any of the serious problems which we are facing (exhaustions of resources, deterioration of the environment, and so forth) it is all too common to meet with the argument, "Oh well, man's ingenuity has always found an answer in the past, so it is to be expected that solutions to all of these problems will be found in the future." Such blind confidence tends to minimize the urgency of meeting emergencies which may arise before long-range solutions are found. This reinforces the unfortunate reluctance of politicians to give the public bad news and to ask for sacrifices which might be necessary if the seriousness of crises is to be investigated. What we need in place of the paralyzing pessimism described by Abelson is not the facile optimism of our advertising agencies but inspiring leaders who are not afraid to describe the dimensions of the dangers with which we must deal and who are willing to outline the manners in which they will be overcome, even if such programs call for unpopular measures.

HERBERT MORAWETZ

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Unsolvable Problems in Mathematics

Most of mathematics can be formalized by means of systems of axiomatic set theory, such as that of Zermelo-Fraenkel (ZF), with specific axioms and rules of inference. Statements in the formalism of ZF set theory may be either "provable" (from its axioms, using only its allowed rules), "disprovable," or "undecidable" (neither provable nor disprovable).

It has been suggested by Lynn Steen (Research News, 18 July 1975, p. 209) that some famous unsettled conjectures, such as Fermat's last theorem, Goldbach's conjecture, and the four-coloring of planar maps, may fall into "the purgatory of perpetual undecidability." The axiom of choice and the continuum hypothesis are known to be undecidable in ZF set theory, provided that theory is consistent (no contradiction can be proved in it). It is indeed possible that some of the above three conjectures are also undecidable in ZF



multi-element trace analysis

Look what it found in friend fruit fly. Once again the unique capabilities of the new KEVEX X-ray energy spectrometer have given a scientist more analytical information about his sample than he anticipated.

Generally speaking, X-ray energy spectrometry (XES) has become an accepted technique because it rapidly analyzes up to 81 elements simultaneously and non-destructively, with little or no sample preparation.

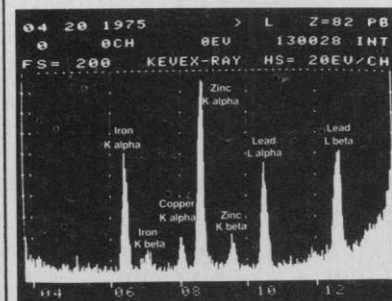
However, when you have an analysis—quantitative or qualitative—that calls for low concentration detection in a small sample mass such as this fruit fly, it's beyond the scope of ordinary X-ray energy spectrometers. Only a high-intensity system with a secondary target that emits pure mono-chromatic X-rays with low background can produce results such as shown here. And only KEVEX has a high-intensity (2,000 or 3,000 watt) XES system for trace analysis in the less than 100 parts-per-billion range for many elements in organic matrices. That's why the man with the fruit fly came to us. It might pay you to do the same. Here's how to go about it:

Phone (415) 697-6901. Ask for the APPLICATIONS DEPARTMENT. We'll discuss the possibility of a free feasibility study using your sample. Don't be bashful; we want to hear from you.

If you'd like to peruse our literature first, fine. Call, write or circle the number below for a free brochure.



KEVEX Corporation
Analytical Instrument Division
898 Mahler Road, Burlingame, CA 94010
Phone (415) 697-6901



The KEVEX fruit fly multi-element analysis. Object: detect trace amounts of lead. Result: minimum detection for lead was found to be 5 nanograms. Also detected were iron, copper and zinc.

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