Meetings

Pure Chemical Compounds

Augmented sources of certified pure substances, a clearinghouse of information about the availability of such materials, and intensified research on all aspects of the purity problem are urgently needed by science and industry. This situation was revealed at a conference on Chemical Compounds of Certified High Purity, held 22 and 23 June at the National Academy of Sciences in Washington. Approximately 35 prominent scientists participated in the conference, which was sponsored jointly by the National Science Foundation and the National Academy of Sciences–National Research Council. Frederick D. Rossini of the Carnegie Institute of Technology was chairman of the conference and also of the five-man organizing committee appointed by academy president Detlev Bronk.

Highly purified compounds are necessary as standards of measurement, in the calibration of instruments, and in the definitive determination of physical and chemical properties requisite for the compilation of “critical tables” of enduring value. In fact, in any type of physical or chemical research where experimental results are sensitive to small amounts of impurity, the availability of pure compounds is imperative. The preparation of such materials simply has not kept pace with the tremendous strides made in recent years in instrumentation and experimental techniques of measurement.

Many major classes of inorganic, organic, and metallo-organic compounds should be made available, including biologically important classes of compounds. Discussion ranged widely over the diverse types of pure substances required—from monoisotopic elements such as oxygen-17 to complex proteins such as insulin, and from single crystals and semiconductor materials to more prosaic compounds. It was also revealed that new criteria for determining purity are needed by biochemists, chemists, and physicists. The educators present agreed that a great increase in the availability of pure compounds speeds graduate research but also results in a certain loss from the standpoint of teaching, which must be remedied.

At the conclusion of the conference recommendations were made for the establishment of a center of information on existing sources of chemical compounds of certified high purity and for the establishment of a permanent central technical organization with responsibility for the identification, preparation, further purification, and certification of pure chemical compounds. It was also recommended that the National Academy of Sciences–National Research Council, in cooperation with other national and international scientific groups, implement a program for improved communication among laboratories concerned with the pure-compounds problem and encourage research on all aspects of the purity of chemical compounds and on the analytical chemistry pertaining to this work.

A limited number of copies of a report on the conference has been prepared. These are available to persons concerned with the pure-compounds problem and may be requested from the Office of Critical Tables, National Academy of Sciences, 2101 Constitution Avenue, NW, Washington 25, D.C.

GUY WADDINGTON
National Academy of Sciences,
Washington, D.C.

Forthcoming Events

February

25-27. Cell Physiology of Neoplasia (14th annual symp. on fundamental cancer research), Houston, Tex. (Editorial Office, Univ. of Texas M. D. Anderson Hospital, Texas Medical Center, Houston 25.)

26. Highway Geology, 11th annual symp., Tallahassee, Fla. (W. F. Tanner, Geology Dept., Florida State Univ., Tallahassee.)

28-5. American College of Allergists. Miami Beach, Fla. (E. Bauers, 2160 Rand Tower, Minneapolis 2, Minn.)

29-3. American College of Surgeons. Boston, Mass. (H. P. Saunders, 40 E. Erie St., Chicago, Ill.)


March

2-4. Low and Medium Energy Nuclear Physics, colloquium, Grenoble, France. (F. Netter, C.E.N., Saclay, BP. No. 2, Gif-sur-Yvette, Seine et Oise, France.)

3-5. American Acad. of Forensic Sciences, Chicago, Ill. (W. J. R. Camp, AAFS, 1850 W. Polk St., Chicago 12.)


6-13. American Otorhinolologic Soc. for Plastic Surgery, Miami Beach, Fla. (J. G. Gilbert, 75 Barberry Lane, Roslyn Heights, N.Y.)


7-11. American Soc. of Civil Engineers. New Orleans, La. (E. S. Kirkpatrick, ASCE, 33 W. 39 St., New York 18.)

10. Recent Developments in Poultry Nutrition (Assoc. of Vitamin Chemists). Chicago, Ill. (J. T. Sime, Director of Research, Evaporated Milk Assoc., 228 N. La Salle St., Chicago 1.)

10-11. Institute of the Aeronautical Sci-
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Ref: Burstone, M.S., J. Nat'l. Cancer Inst.,
21, 523 (58).
Ibid, 20, 601 (58)

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New Products

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Neither Science nor the writer assumes responsibility for the accuracy of the information. All inquiries concerning items listed should be addressed to the manufacturer. Include the department number in your inquiry.

- **VACUUM SYSTEM** is a mobile unit that will produce vacuum in the range 250 to 0.5 mm-Hg and hold within ±0.2 mm-Hg in an airtight system. The system uses a mechanical pump with free-air capacity of 58 lit./min. The pump runs continuously, evacuating a ballast tank connected to the rest of the system through a solenoid valve. The latter is controlled by a mercury regulator working through a relay. (Fisher Scientific Co., Dept. Sci 292, 717 Forbes St., Pittsburgh 19, Pa.)

- **LIGHT SOURCE** for high-speed photography is a spark-type point source. The source may be triggered with a 500-volt pulse of 2 μsec duration. Four models are available with energies at 20 kv of 2 to 20 joules and spark duration from 0.3 to 1 μsec. Source size ranges from 0.015 to 0.060 in. in diameter. The outer cylindrical case serves as a shield for radio frequencies. (Avco Corp., Dept. Sci 334, 201 Lowell St., Wilmington, Mass.)

- **CATODE-RAY-’UBE TRANSFER LENS** provides a full-size image at object-to-image distance of 17.6 in. A 4½-in. diagonal format can be covered. Relative aperture ranges from f/2 to f/22. The lens is color-corrected over the range 4200 to 5200 A. A reflecting unit and a motorized adjustment of the lens iris are optional auxiliaries. Full-range operation of the iris by the latter requires less than 10 sec. (Perkin-Elmer Corp., Dept. Sci 295, Norwalk, Conn.)

- **CHROMATOGRAM SCANNER** for tritium, carbon-14, and sulfur-35 counts simultaneously both sides of one or more continuous strips up to 50 ft long. The entire strip is enclosed within the gas-filled scanner housing. Two facing gas-flow detectors accept collimated radiation from both sides of the strip and transmit total activity to a recorder. Ten scanning speeds are selectable. (Atomic Accessories Inc., Dept. Sci 341, 244-02 Jamaica Ave., Bellerose 26, N.Y.)

- **GAUSSMETER** is a direct-reading instrument for measurement of direction and magnitude of magnetic flux. Operation depends on the Hall effect; a thin wafer of high-purity indium arsenide with a temperature coefficient of 0.1 percent is used. The wafer element is 0.019 in. thick and 0.125 in. wide. The active area is a circle 0.0625 in. in diameter. Three ranges cover 0 to 300, 0 to 3000, and 0 to 30,000 gauss. The instrument will read d-c flux in the presence of a strong a-c field. Power supply is a built-in 4.5-volt battery. (F. W. Bell, Inc., Dept. Sci 342, 1356 Norton Ave., Columbus 6, Ohio)

- **MONOCHROMATOR** uses a 15,000-lines/in-plane grating as the dispersing element. Reciprocal dispersion is 70 A/mm. Slit widths are variable from 0 to 1 mm. Wavelength range is 200 to 1000 mλ. The instrument is reversible and can be mounted with slits vertical or horizontal. (Halger and Watts, Dept. Sci 323, 98 St. Pancras Way, Camden Rd., London N.W. 1, England)

- **METALLOGRAPH** for microscopic study and photography of radioactive materials is remotely controlled. The instrument is built around the manufacturer's research metallograph and includes a control panel built into a shielding shell and mounting base that accepts whatever shielding material is desired. (Bausch and Lomb Optical Co., Dept. Sci 336, Rochester 2, N.Y.)

Joshua Stern
National Bureau of Standards,
Washington, D.C.