

Microdetection of Carbon in Organic and Inorganic Compounds by Ignition with Sodium Amide

Carbon in organic and inorganic compounds is detected by ignition with molybdenum trioxide,¹⁾ silver arsenate,²⁾ potassium iodate,¹⁾ metallic sodium and ammonium sulfate,³⁾ or magnesium powder.⁴⁾ Some of the reagents are oxidizing agents and are interfered by reducing agents. Metallic sodium and ammonium sulfate, and magnesium sometimes gave negative result in the detection, because their melting points were too low or too high to react with carbon in some organic compounds.

In the writers' laboratory, sodium amide proved to be better than those reagents mentioned above in the detection of carbon in organic compounds in the presence of inorganic compounds, since it melted at about 200° and easily reacted with carbon in all types of organic compounds.

Ignition of sodium amide with organic compounds gave sodium cyanide, which was converted to ferrocyanide and easily detected as Prussian blue. When organic compounds contained sulfur, the ignition gave cyanide with thiocyanate which was detected by ferric ion or cobalt salt and acetone.⁵⁾ Thiocyanate was also produced by the ignition of organic compounds with the reagent in the presence of inorganic sulfur compounds. Alcohols, aldehydes, ketones, amines, amino acids, ethers, esters, hydrocarbons, carboxylic acids, amides, nitro compounds, sugars, phenols, and haloalkyls tested gave positive results except low-boiling ethers and hydrocarbons. Inorganic compounds tested involving oxidizing and reducing agents did not interfere, except carbonates, cyanides, and thiocyanides, and a large amount of thiosulfate or sulfate might interfere.

The details of the experiments will be published in the near future.

*Pharmaceutical Institute,
Medical Faculty,
University of Kyushu,
Katakasu, Fukuoka.*

Tsutomu Momose (百瀬 勉)
Yo Ueda (上田 陽)
Yoshiko Mukai (向井良子)

April 1, 1958

- 1) F. Feigl, D. Goldstein : *Mikrochim. Acta*, **1956**, 1317.
- 2) F. Feigl : "Spot Tests in Organic Analysis," Elsevier, 74(1956).
- 3) J.B. Niederl, J.A. Sozzi : *C. A.*, **51**, 12748(1957).
- 4) M. Jureček, M. Nepraš : *Mikrochim. Acta*, **1956**, 1762.
- 5) I.M. Kolthoff : *Mikrochemie*, **8**, 176(1930).