Gases
Separation of nitrous oxide and phosphine with flame-photometric detection (FPD)

Application Note

Environmental

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Introduction
Under the right conditions of the flame of the FPD in the phosphor mode, it is found that not only phosphine gives a detector signal, but also nitrous oxide can be detected. The retention and inertness of the Agilent PoraPLOT Q column provides the right separation and peak shape, also at trace levels.
**Conditions**

Technique: GC-capillary

Column: Agilent PoraPLOT Q, 0.32 mm x 10 m fused silica WCOT (df = 10 μm) (Part no. CP7950)

Temperature: 40 °C

Carrier Gas: H₂, 100 kPa (1.0 bar, 14 psi), 2.8 mL/min

Injector: fused silica loop/trap

Detector: P-FPD, 526 nm

T = 175 °C

Sample Size: 2.3 μL

Courtesy: Dr. G. Gassman, Biologische Anstalt Helgoland, Hamburg, Germany

**Peak identification**

1. nitrous oxide (N₂O)  540 nL
2. phosphine (PH₃)  275 pL