

Gasmeter™ in industrial air quality – applications: Phosgene Point Monitoring

The plants using phosgene are typically equipped with adequate sensor systems to detect leaks COCl₂ in factory air. The critical situations, however, arise at equipment service and maintenance. Due to extremely poisonous nature of phosgene, even small gas pockets in serviced equipment may be dangerous to maintenance personnel. The Gasmeter™ is an ideal tool to monitor point sources of phosgene, due to high specificity, continuous operation and fast response time.

Properties of Phosgene

Chemical formula: COCl₂ CAS registry number: 75-44-5 Boiling point: 8 °C

Health effects: Respiratory tract problems, pulmonary edema, death (LCT₅₀ = 500 ppm-min)

Industrial uses: Chemical intermediate for isocyanine based polymers, carbonic acid esters and acid chlorides Dye and pigment manufacturing Insecticide manufacturing Pharmaceutical industry Metallurgy

Application Data

COCl₂ FTIR

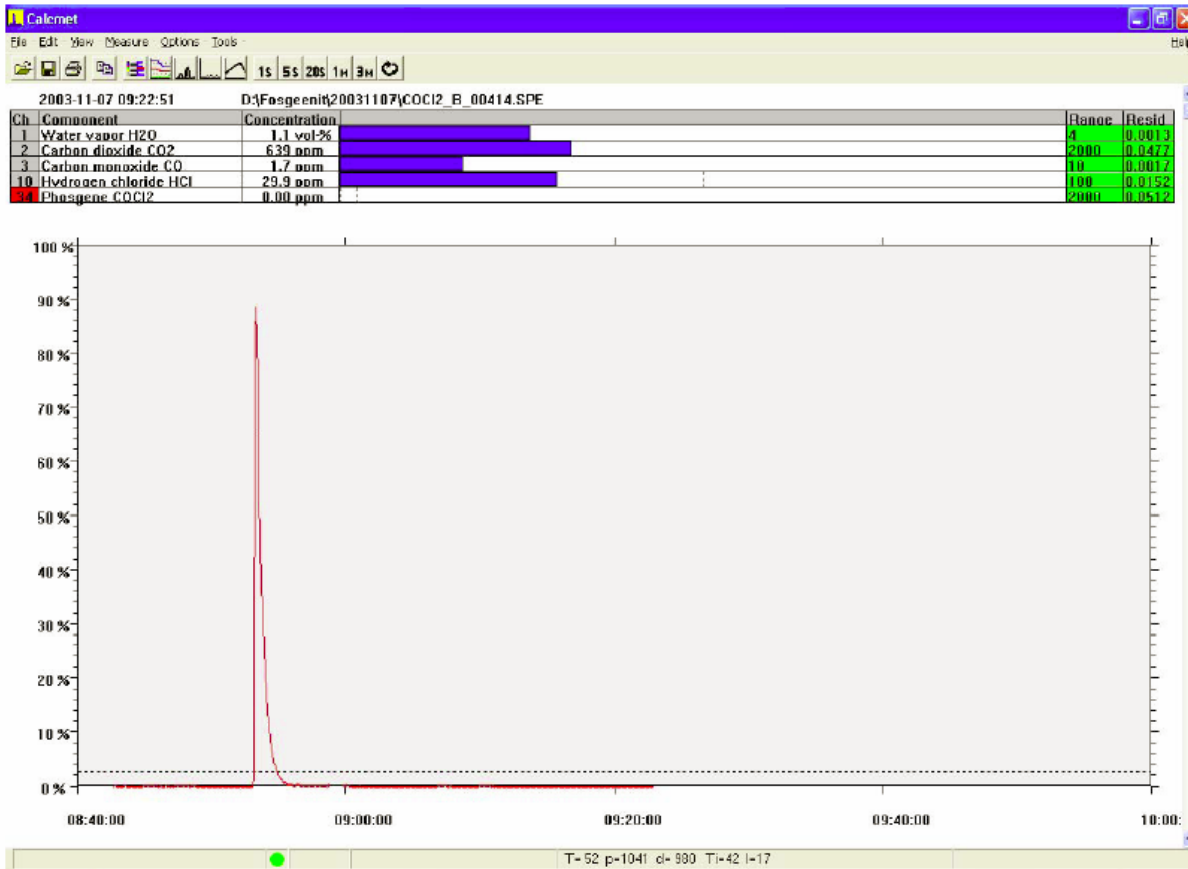
spectrum , 50
PPM, 50 °C, 10
Meter path, 8 cm-
1 resolution.
Detection limit in
ambient air:~ 0.2
ppm

Spectra measured
and saved with
Gasmeter DX-4015
FTIR and Caclmet
Software



Application example:

Phosgene monitoring during equipment service shut-down. The gas supply equipment was placed in an air-tight cabinet. During replacement of gas line parts, however, there is always a risk that some gas is still left inside the parts. The sampling line leading to Gasmeter™ DX-4015 was placed very close to potential leak points during operation. The concentrations of COCl₂ increased dramatically for a short period of time. The continuous concentration trend measured by Gasmeter™ DX4015 helps to determine when it is safe to continue service.



Gasmeter Dx-4015: Portable Analyzer is equipped with a closed loop sample pump and sample cell. Hazardous and toxic chemicals can be flown through the instrument and back to process without danger to the operator