INDUSTRIAL HYGIENE

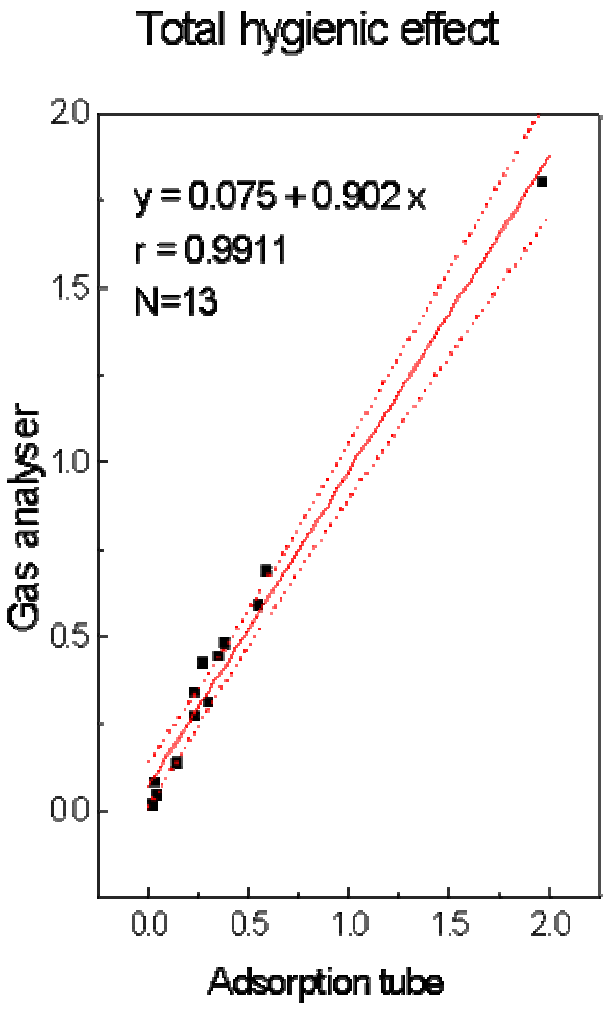


***FIGURE**: Total hygienic effect. GASMET is compared to adsorption tubes. The value 1.0 equals the exposure limit.*

The exceptional speed and sensitivity of FT-IR spectroscopy are well known. We bring this performance to the production environment. In the examples described in this application note, GASMET has been used to make industrial hygiene measurements in the production environment.

To prove the accuracy of GASMET, **Tampere Regional Institute of Occupational Health** made a comparison study between GASMET and established analysis methods. The Figure shows the results of 13 comparison measurements made at four different production sites. Based on the analysis results, the total hygienic effect was calculated.

TOWARDS A HEALTHIER WORKING ENVIRONMENT

Indoor air quality at the workplace has a decisive effect on the health and job satisfaction of the employees. Many companies are improving the air quality in order to make working conditions more comfortable and to raise performance.

Measuring hazardous components in the working environment is quite a demanding operation. The measurement requires in-depth knowledge of the industrial process and the measurement technique.

GASMET performs continuous field measurements. Simultaneously it defines the concentrations of up to 30 solvent vapors or gas components. Consequently, the profile of workplace air impurities is known as a function of time.

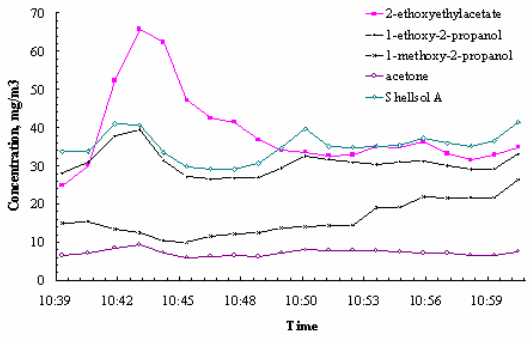
If the time-dependent information of air quality is not known, any improvements may not be effective. For example, an unnecessary change of ventilation or manufacturing process can increase production costs dramatically.

On the other hand, the information GASMET provides makes focused preventive measures possible. The source of the impurity may be eliminated, the solvents used may be changed, or the ventilation improved.

INDUSTRIAL HYGIENE

Silk-Screen Printing

GASMET results

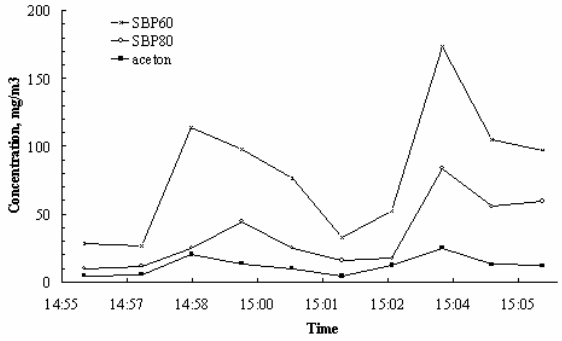


Comparison (averages)

	measured concentration mg/m³	
	adsorbent tube	GASMET
1-ethoxy-2-propanol	65	69
2-ethoxyethy-acetate	13	15
acetone	8.3	8.4
stoddard solvent, Shellsol A	14	16.2
1-methoxy-2-propanol	-	1.8
toluene	0.5	-

Manufacturing of Furniture: Gluing a Couch

GASMET results

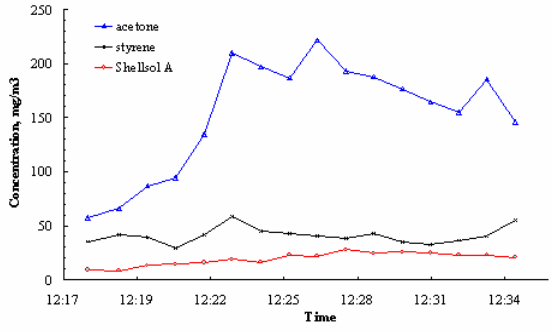


Comparison (averages)

	measured concentration mg/m³	
	adsorbent tube	GASMET
rubber solvent SBP 60/95, rubber solvent SBP 80/110	47	45
acetone	8	7.7

Fiberglass Lamination of Ice-Hockey Sticks

GASMET results



Comparison (averages)

	measured concentration mg/m³	
	adsorbent tube	GASMET
acetone	117	154
styrene	38	40.6
stoddard solvent, Shellsol A	6.2	19.4
1-methoxy-2-propanol	-	1.8
xylenes	10	**

** not calibrated

According to the field measurements, the results of the *GASMET Dx-9000* and an adsorption tube method are well comparable.

The adsorbent tubes were analyzed in laboratory with GC-FID after desorption.

Unlike established methods, the GASMET is able to provide real time quantitative analysis of selected VOC's in production environment.

As displayed, the GASMET is very well suitable for industrial hygiene measurements.[1]

[1]Ahonen, I, *et alii*. 1996. Portable FT-IR Gas Analyzer in Industrial Hygiene. The Analyst. Volume 121, September 1996.