

**Measurement accuracy testing of SF<sub>6</sub>-IR-Monitor**

<b>BAM reference</b>	I.4/1017
<b>Copy</b>	1 <sup>st</sup> copy of 2 copies
<b>Customer</b>	G.A.S. Gesellschaft für analytische Sensorsysteme mbH Otto-Hahn-Straße 15 D-44227 Dortmund, Germany
<b>Order date</b>	05 December 2009
<b>Reference</b>	Projekt-Nr. 9000 / Bestell-Nr. RKB 0812015
<b>Receipt of order</b>	05 December 2009
<b>Test samples</b>	SF <sub>6</sub> -IR-Monitor Device-ID no. 28724, SF <sub>6</sub> -IR-Monitor Device-ID no. 28732 and SF <sub>6</sub> -IR-Monitor Device-ID no. 28727.
<b>Receipt of samples</b>	02 February 2009
<b>Test date</b>	13 February 2009
<b>Test location</b>	BAM Federal Institute for Materials Research and Testing, Unter den Eichen 87, D-12205 Berlin, Germany

**Test procedure and test results**

For verification of the measured reading, the three test units (Device-ID no. 28724, Device-ID no. 28732, and Device-ID no. 28727) were executed according to the manual.

The reference gas mixture for the testing of the self-suctioning devices was supplied at a flow rate of 600 ml/min and ambient pressure. To avoid any back diffusion of air components, a bubbler is used.

The primary standard C49210 (produced by BAM) in accordance to DIN EN ISO 6142:2006 „Gasanalyse – Herstellung von Prüfgasen – Wägetverfahren (ISO 6142:2001)“ was used as reference gas mixture.

Composition of the primary standard C49210:  $x(\text{SF}_6) = (951 \pm 2) \mu\text{mol/mol}$  in air.  
The internal calibration gas TA 416359 used was produced by Gase.de.  
Composition of the internal calibration gas TA 416359:  $x(\text{SF}_6) = (985 \pm 20) \mu\text{mol/mol}$  in air.

SF<sub>6</sub>-free ambient air was used as zero gas.

**PRÜFBERICHT**

**Device-ID. 28724**

No.	Time	Used testing gas			Reading
		Identification	Mole fraction $x_i^{1)}$ in ppm [ $\mu\text{mol/mol}$ ]	Volume fraction $\varphi_i^{1), 2)}$ in ppm [ $\mu\text{l/l}$ ]	Volume fraction I $\varphi_i^{1), 2)}$ in ppm [ $\mu\text{l/l}$ ]
1	9:00	C49210	951	937	970
2	9:10	TA416359	1000	985	1015
3	9:20	C49210	951	937	965
4	9:25	TA416359	1000	985	1022
5	9:40	C49210	951	937	960
6	9:35	TA416359	1000	985	1020

**Device-ID. 28732**

No.	Time	Used testing gas			Reading
		Identification	Mole fraction $x_i^{1)}$ in ppm [ $\mu\text{mol/mol}$ ]	Volume fraction $\varphi_i^{1), 2)}$ in ppm [ $\mu\text{l/l}$ ]	Volume fraction $\varphi_i^{1), 2)}$ in ppm [ $\mu\text{l/l}$ ]
1	9:25	C49210	951	937	940
2	9:35	TA416359	1000	985	985
3	9:45	C49210	951	937	935
4	9:50	TA416359	1000	985	985
5	9:55	C49210	951	937	935
6	10:00	TA416359	1000	985	980

**Device-ID. 28727**

No.	Time	Used testing gas			Reading
		Identification	Mole fraction $x_i^{1)}$ in ppm [ $\mu\text{mol/mol}$ ]	Volume fraction $\varphi_i^{1), 2)}$ in ppm [ $\mu\text{l/l}$ ]	Volume fraction $\varphi_i^{1), 2)}$ in ppm [ $\mu\text{l/l}$ ]
1	9:35	C49210	951	937	935
2	9:40	TA416359	1000	985	985
3	9:50	C49210	951	937	935
4	9:55	TA416359	1000	985	985
5	10:00	C49210	951	937	930
6	10:10	TA416359	1000	985	980

<sup>1)</sup> Expression in accordance to DIN 1310-1984

<sup>2)</sup> Based on 0 °C and 1013 mbar

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Division I.4: Process Analysis  
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by order

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