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To

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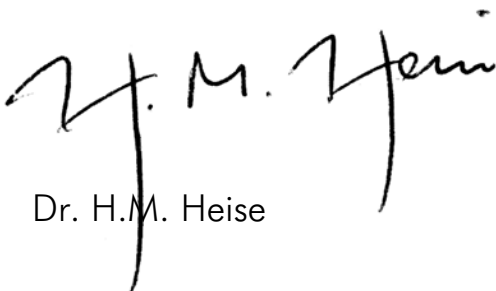
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To whom it may concern,

in the past, my working group has been much involved in trace gas analysis of complex gas mixtures and the atmosphere using infrared spectroscopy, which led to many publications in highly esteemed journals, a contribution on gas analysis by infrared spectroscopy to the famous Analytiker Taschenbuch and a monography on infrared spectroscopy.

During September 2006, measurements were carried out at ISAS - Institute of Analytical Sciences to assess the performance of the SF<sub>6</sub>-IR-Leak and the SF<sub>6</sub>-IR-Monitor fabricated by G.A.S. Gesellschaft für analytische Sensorsysteme, Germany. Substantial tests with regard to the influence of moisture and a multitude of volatile organic compounds (VOCs) proved that both instruments do not show cross-sensitivities that might change the measurement readings for the list of compounds given in the annex. For other compounds an estimate for the cross-sensitivities is provided. The performance of the SF<sub>6</sub>-IR-Leak and that of the SF<sub>6</sub>-IR-Monitor are in line with the typical characteristics based on the physical principle of infrared absorption spectroscopy.



Dr. H.M. Heise

Encl.

## Annex

# Cross-Sensitivities for the SF<sub>6</sub>-IR-Leak und SF<sub>6</sub>-IR-Monitor

Detection limit for Sulfurhexafluoride @ 10.7 μm: 1 ppm<sub>v</sub>

The following substances have zero cross-sensitivity with the sensor exposed to a 100 % saturated gas atmosphere with the pure organic compounds in air:

<b>Volatile organic compound</b>	<b>Vapour pressure* [hPa] (Temperature)</b>
o-Xylene	10 (27 °C)
p-Xylene	10 (22.4 °C)
Acetone	100 (1.3 °C)
2-Propanol	100 (33.6 °C)
n-Hexane	100 (9.8 °C)
Butyl methyl ether	100 (12 °C)
Benzyl alcohol	0.01 (28 °C)
n-Decane	1 (16.7 °C)
2,6-Dimethyl-4-heptanon	0.1 (14 °C)
2,4-Dimethyl-3-pentanon	10 (14 °C)
Bromobenzene	10 (34.9 °C)
Ethylbromide	1000 (38.0 °C)
4-Ethyltoluene	10 (41 °C)
Acetonitrile	100 (21.4 °C)
Cyclohexane	100 (19.3 °C)
Diesel fuel	

\* CRC Handbook of Chemistry and Physics, 79<sup>th</sup> Edition (1998)