



Outgassing Measurement

with Residual Contamination Analysis

- Integral measurement of your components (in vacuum with mass spectrometer)
- Determination of molecular contamination of the test objects
- Report generation and interpretation of the measurement results

Service by VACOM:

- Qualitative and quantitative measurements of film contaminations
- Quantitative determination of residues such as manufacturing materials and determination of the components' outgassing behavior
- Mass specific partial pressures at a range of 1-300 m/z (mass/charge)
- Total outgassing rate of components or outgassing rate of a component's surface or amount of contamination
- Evaluation of water contamination, volatile and semi-volatile organic compounds as well as of the total molecular contamination of a component's surface
- Standard evaluation after a measuring time of 1, 2, 5, or 10 h
- Scientific evaluation of all results
- Accompanying conclusion on process optimization

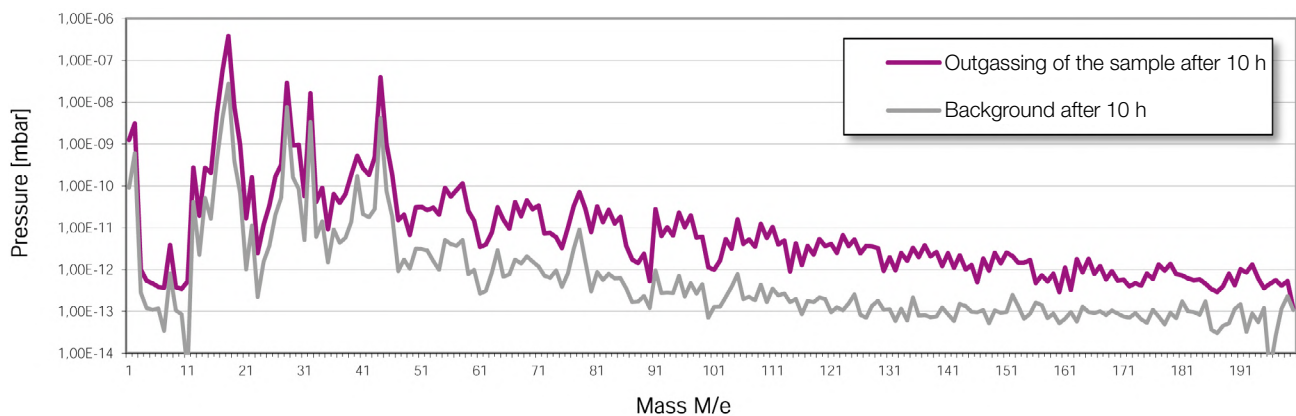
The following information is needed for an open-end measurement:

- Material and coating of the components
- Height and surface of the components (e.g., as technical drawing)
- Max. height of the components: 750 mm x Ø 1100 mm
- Max. weight of the components: 150 kg

Examples for outgassing rates of materials and cleaned components:

	Stainless steel	Aluminum	Fused silica	PE film
Required minimum surface	ca. 1000 cm ²	ca. 650 cm ²	–	–
Outgassing rate H₂O in mbar · l/(s · cm²)	< 4.0 · 10 ⁻¹⁰	< 1.0 · 10 ⁻⁹	< 1.7 · 10 ⁻⁹	< 2.9 · 10 ⁻⁸
Outgassing rate of volatile organic compounds in mbar · l/(s · cm²)	< 4.0 · 10 ⁻¹²	< 6.0 · 10 ⁻¹²	< 3.0 · 10 ⁻¹²	< 8.8 · 10 ⁻⁹
Outgassing rate of semi-volatile organic compounds in mbar · l/(s · cm²)	< 3.0 · 10 ⁻¹³	< 3.6 · 10 ⁻¹³	< 2.3 · 10 ⁻¹³	< 2.5 · 10 ⁻¹⁰
Total molecular contamination	< 100 ng/cm ²	< 300 ng/cm ²	< 500 ng/cm ²	< 20 µg/cm ²

Mass spectrum sample



Report protocol excerpt