

# Precision and ultrafine cleaning

EN

with residual gas analysis (RGA)



- Guaranteed cleaning results with VACOM® Purity Classes
- In-house examination of component cleanliness by residual gas analysis
- All processes in cleanrooms classes ISO-7, ISO-6 and ISO-5



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## Ultrafine cleaning with residual contamination analysis

- Industrial ultrafine cleaning for highest demands
- Elimination of film contaminations by wet and dry cleaning
- Flexible and order-optimized processes with various cleaning procedures
- Components of any geometric shapes with a maximum size of 1100x700x700 mm and a weight of 150 kg
- Examination of the cleaning results with highly sensitive methods for particulate and film contaminations
- Preservation of component cleanliness by cleanroom suitable packaging
- Scientific monitoring and optimization of processes
- Short lead times through efficient planning and logistics
- Processes are ISO 9001:2008 certified and have been awarded by the German Federal Ministry of Economics and Technology
- Optimized cleaning results for various materials like stainless steel, aluminum, non ferrous metals, titanium, viton, and elastomers

## VACOM® Purity Classes:

|   |   | Class S  | Purity Class 1     | Purity Class 2  | Purity Class 3                              | Purity Class 4             |
|---|---|--|--------------------|-----------------|---|----------------------------|
| Accumulated molecular contamination*      |   | g/cm <sup>2</sup>  | < 1E-5             | < 2E-8          | < 7E-9                                      | < 5E-9                     |
| Outgassing<br>(for simple geometries)     | Stainless steel,<br>Titanium,<br>Nickel | H <sub>2</sub> O<br>[mbar·l/(s·cm <sup>2</sup> )]                          | n/s                | n/s             | < 2E-9                                      | < 4E-10                    |
|   |   | C <sub>x</sub> H <sub>y</sub> (45...100)<br>[mbar·l/(s·cm <sup>2</sup> )]  | n/s                | n/s             | < 5E-12                                     | < 4E-12                    |
|   |   | C <sub>x</sub> H <sub>y</sub> (101...200)<br>[mbar·l/(s·cm <sup>2</sup> )] | n/s                | n/s             | < 6E-13                                     | < 3E-13                    |
|   | Aluminum,<br>Copper                     | H <sub>2</sub> O<br>[mbar·l/(s·cm <sup>2</sup> )]                          | n/s                | n/s             | < 2E-9                                      | < 1E-9                     |
|   |   | C <sub>x</sub> H <sub>y</sub> (45...100)<br>[mbar·l/(s·cm <sup>2</sup> )]  | n/s                | n/s             | < 7E-12                                     | < 6E-12                    |
|   |   | C <sub>x</sub> H <sub>y</sub> (101...200)<br>[mbar·l/(s·cm <sup>2</sup> )] | n/s                | n/s             | < 6E-13                                     | < 4,6E-13                  |
| RGA certificate                           |   | no   | no                 | Optional        | Optional                                    | yes                        |
| Heavy metals                              | [at% at surface]                        | n/s  | n/s                | n/s             | n/s   | < 0.1                      |
| Particles **                              | [Surface cleanliness class]             | SCC 100  | SCC 10             | SCC 1           | SCC 1                                       | SCC 1                      |
| Recommended for use in cleanroom class*** |   | -  | ISO 7              | ISO 5           | ISO 5                                       | ISO 5                      |
| Cleanroom suitable packed (twice)         |   | no   | yes                | yes             | yes   | yes                        |
| Note                                      |   | "free of oil and grease"   | cleanroom suitable | vacuum suitable | low out-gassing and low particle generation | Semiconductor Applications |

- \* hydrocarbons  
 \*\* Purity Class 1 – 4: SCC 1 or SCC 0.1 according to the customers request  
 \*\*\* Cleanroom compatibility better than ISO 5 according to the customers' request