



valid until: October 1, 2030

Fraunhofer

**TESTED[®]
DEVICE**

PULS GmbH
CW1000

Report No. PU 2507-1644

DUPLICATE

Statement of
Qualification

Single product
Outgassing Behavior
Inorganic Acids

Customer

PULS GmbH
Elektrastrasse 6
81925 Munich
Germany

Tested product

Category:

Working Place and Operator

Subcategory:

Work Equipment

Product name:

CW1000
consisting of:

- CW1000.WALL (manufacturing date: 4/2025; article number: 101528; serial number: 01154890)
- CW1000.SEPA (manufacturing date: 7/2025; serial number: 1100238432)
- CW1000.MOCHA (manufacturing date: 7/2025; serial number: 1100230353)

Emission chamber measurements with gas impingement in combination with ion chromatography (IC)

Standards/guidelines:

ISO 14644-8, -15
The norms stated generally refer to the version valid at the time of the tests.

Test equipment:

- Measuring station:.....Metrohm Professional IC 850
- Sampling chamber:..... stainless steel emission cell with V = 100l

Sample storage:

- Pre-conditioning
 - Cleanroom Air Cleanliness Class (according to ISO 14644-1):..... ISO 1
 - Airflow velocity:.....0.45 m/s
 - Airflow type:..... vertical laminar flow
 - Temperature:22 °C ± 0.5 °C
 - Relative humidity: 45 % ± 5 %
 - Purified air: VOC-filtered

Test procedure parameters:

Outgassing test temperature:..... 23 °C

Test result / Classification

The outgassing behavior of inductive charger system CW1000 consisting of CW1000.WALL, CW1000.SEPA and CW1000.MOCHA at the stated temperatures was investigated according to ISO 14644-15. Based on the outgassing rates determined for the specific units, the following classification was made for the corresponding Contaminant Category:

Contaminant Category (x)	SER _u ¹⁾ 23 °C [g/unit · s]	ISO-ACC _u Class (x) based on 23 °C
Fluoride (HF)	< 2.9 x 10 ⁻¹¹	< - 10.5
Chloride (HCl)	< 2.9 x 10 ⁻¹¹	< - 10.5
Bromide (HBr)	< 2.9 x 10 ⁻¹¹	< - 10.5
Nitrate (HNO ₃)	< 2.9 x 10 ⁻¹¹	< - 10.5
Phosphate (H ₃ PO ₄)	< 2.9 x 10 ⁻¹¹	< - 10.5
Sulfate (H ₂ SO ₄)	< 2.9 x 10 ⁻¹¹	< - 10.5

¹⁾SER_u: Unit-specific emission rate

The measuring devices used for the qualification tests are calibrated at regular intervals; their results can be traced back to national and international standards. In cases where no national standards exist, the test procedure implemented complies with the technical regulations and norms applicable at the time of the test. The relevant documentation can be viewed on request at any time.

Detailed information and parameters of the test environment can be found in the Fraunhofer IPA test report.

Fraunhofer Institute for Manufacturing Engineering and Automation IPA

Business unit Testing and Certification

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PU 2507-1644

Report No. first document

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Report No. current document

on behalf of

Dr.-Ing. Frank Bürger, head of business unit Testing and Certification

Stuttgart, October 1, 2025

Place, date of first document issued

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Place, current date

