IPA

Cleanroom (atmospheric)

valid until: November 26, 2030

Fraunhofer

TESTED® DEVICE

Ziehl-Abegg SE
PA6-GF30 blue
Report No. ZI 2507-1655

Statement of
Qualification

Single product
Outgassing Behavior
Inorganic Acids

Fraunhofer IPA

Statement of Qualification · Single product

Customer

Ziehl-Abegg SE
Heinz-Ziehl-Strasse
Künzelsau
Germany

Tested product

Category: Materials

Subcategory: Plastics

Product name: PA6-GF30 blue
(manufacturing date: 5/2025; color: blue; article number: 00412286)

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

Standards/guidelines: ISO 14644-8, -15; VDI 2083 Part 17
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:.....Markes International µCTE

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:
- Volume of micro emission chamber: ..... 45 cm^3
- Preconditioning time: ..... > 5 min
- Temperature during emission sampling: ..... 23 °C
- Duration of emission sampling:.....24 h
- Sampling flow rate: .....100 mL/min

Test result / Classification

The outgassing behavior of PA6-GF30 blue at the stated temperature was investigated according to ISO 14644-15 and VDI 2083 Part 17. Based on the outgassing rates determined for the specific surfaces, the following material classification was made for the corresponding Contaminant Category:

Contaminant Category (x)	SER_a [1] 23 °C [g/m^2s]	ISO-ACC_m Class (x)
Hydrofluoric acid (HF)	< 2.9 x 10^{-9}	**< -8.5**
Hydrochloric acid (HCl)	< 2.9 x 10^{-9}	**< -8.5**
Hydrobromic acid (HBr)	< 2.9 x 10^{-9}	**< -8.5**
Nirtric acid (HNO_3)	< 2.9 x 10^{-9}	**< -8.5**
Phosphoric acid (H_3PO_4)	< 2.9 x 10^{-9}	**< -8.5**
Sulfuric acid (H_2SO_4)	< 2.9 x 10^{-9}	**< -8.5**

[1] The emission rate is calculated using the detected concentration based on the external standard calibration, the analyzed sample surface area or number of samples, the volume of the impinge ment solution and the sampling duration.

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.

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

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