



Fraunhofer

**TESTED[®]
DEVICE**

ECOLAB

Washed & sterilised x 25

Report No. EC 1805-1041

DUPLICATE

Statement of
Qualification

Particle Emission

Statement of Qualification

Customer
 ECOLAB
 BRUNEL WAY, BAGLAN ENERGY PARK
 NEATH, SA11 2GA
 United Kingdom

Component tested

Category: Working Place and Operator

Subcategory: Equipment Parts

Product name: rasanTEC Mono Star – Washed & sterilised x 25
 (manufacturing date: 3/2016, 3/2017; color: white/blue stripes;
 article number: 10103172)

Test result / Classification

When dry and under the specified test conditions, the rasanTEC Mono Star – Washed & sterilised x 25 fulfills the requirements up to the following Air Cleanliness Class according to ISO 14644 Part 1:

Test parameter(s)	Air Cleanliness Class
Linear compression = 120 mm Torsion = 180° Cycle time t = 1 s	7
Overall result	7

This is equivalent with ISO ACPC class 7 according to VDI 2083 Part 9.2.

Random sampling of particle emissions (airborne) at representative sites

Standards/Guidelines: ISO 14644-1; VDI 2083 Part 9.2
 The norms stated generally refer to the version valid at the time of the tests.

Test devices: Optical particle counter:
 LasAir II 110 and LasAir III 110 with measuring ranges $\geq 0.1 \mu\text{m}$, $\geq 0.2 \mu\text{m}$, $\geq 0.3 \mu\text{m}$, $\geq 0.5 \mu\text{m}$, $\geq 1.0 \mu\text{m}$ and $\geq 5.0 \mu\text{m}$

Test environment parameters:

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

Test procedure parameters:

Test bench (according to ISO 9073-10):

- Geometry of sample:..... flat
- Sample length: l = 240 mm
- Motion cycle:
 - Linear compression: s = 120 mm
 - Torsion: 180°
- Cycle time t: 1 s

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

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EC 1805-1041
 Report No. first document

Stuttgart, November 5, 2018
 Place, date of first document issued

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 Report No. current document

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 Place, current date

on behalf of 
 Dr.-Ing. Frank Bürger, Project Manager Fraunhofer IPA