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TESTED®
DEVICE

eltherm production GmbH
ELPH-Cleanroom ID 100 mm
Report No. EL 1603-812

DUPLICATE

Statement of
Qualification

Outgassing Behavior
VOC

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Statement of Qualification

Customer

eltherm production GmbH
Ernst-Heinkel-Strasse 6-10
57299 Burbach
Germany

Component tested

Category: Process Equipment

Subcategory: Heating and Cooling

Product name: Heating jacket ELPH-Cleanroom – ID 100 mm
(manufacturing date: 5/12/2015; color: gray;
serial number: 49/2016/01; charge number: JCF0151)

Emission chamber measurements with purge-and-trap thermodesorption method and gas chromatography combined with mass spectrometry (TD-GC/MS)

Standards/Guidelines: ISO 14644-8; ISO 16000-6, -9, -11, -25; VDI 2083-17
The norms stated generally refer to the version valid at the time of the tests.

Testing equipment:
- Measuring station: ..... PerkinElmer Clarus 600, Clarus 600T, ATD 650
- Sampling chamber: ..... delivered from customer

Sample storage: Age of sample: ..... about 2 months

Test procedure parameters:
- Retentionsbereich (VOC): ..... C6 bis C16
- Prüftemperaturen Ausgasungsverhalten: ..... 23 °C und 180 °C

Test result / Classification

The outgassing behavior of the heating jacket ELPH-Cleanroom – ID 100 mm at the stated temperatures was investigated according to VDI 2083-17. The surfaces exhibited the following outgassing rates for the corresponding contaminant group:

Test temperature	Contaminant group	Specific emission rate [g/m²s]
23 °C	VOC	2.0 x 10^{-9}
180 °C	Amines	not detectable
	Organophosphates	not detectable
	Siloxanes	1.5 x 10^{-7}
	Phthalates	not detectable

The detection limit of the specific emission rate at the time of the test was 2.8 x 10^{-10} g/m²s.

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.

For further information about the test environment and parameters, please refer to the Fraunhofer IPA test report.

Fraunhofer Institute for Manufacturing
Engineering and Automation IPA

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Stuttgart, May 31, 2016
Place, date of first document issued

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Place, current date

on behalf of
Frank Bürger, Project Manager Fraunhofer IPA

This document only applies to the named product in an unchanged state and is valid from the date of issue for a period of 5 years. The document can be verified under **www.tested-device.com**.

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