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TESTED®
DEVICE

LAPP KOREA LLC
FD 8711 C MC 7x0.34
Report No. LA 2410-1570

DUPLICATE

Statement of
Qualification

Single product
Outgassing Behavior
Inorganic Acids

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Statement of Qualification · Single product

Customer

LAPP KOREA LLC
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Republic of Korea

Tested product

Category: Energy Supply

Subcategory: Cable Systems

Product name: CLEANROOM FD 8711 C MC 7 x 0.34 mm²
(manufacturing date: 9/9/2024; color: black; serial number: 85133400;
batch number: E/37; lenght: 1 m)

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

Standards/guidelines: ISO 14644-8, -15; ISO 16000-6, -9, -11, -25; VDI 2083 Part 17
The norms stated generally refer to the version valid at the time of the tests.

Test devices:
- Measuring station: ..... Metrohm Professional IC 850

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 the cable system CLEANROOM FD 8711 C MC 7 x 0.34 mm² at the stated temperatures was investigated according to ISO 14644-15. Based on the outgassing rates determined for the specific units, the following material classification was made for the corresponding Contaminant Category:

Contaminant Category (x)	SER_u [1] 23 °C [g/unit*s]	ISO-ACC_e Class(x) based on 23 °C
Fluroide (HF)	< 2.9 x 10^{-9}	**< -8.5**
Chloride (HCl)	< 2.9 x 10^{-9}	**< -8.5**
Bromide (HBr)	< 2.9 x 10^{-9}	**< -8.5**
Nitrate (HNO_3)	< 2.9 x 10^{-9}	**< -8.5**
Phosphate (H_3PO_4)	< 2.9 x 10^{-9}	**< -8.5**
Sulfate (H_2SO_4)	< 2.9 x 10^{-9}	**< -8.5**

[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

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

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