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DEVICE

DENSO WAVE Inc.
SUS316L (Cutting)
Report No. DE 2006-1161

Statement of
Qualification

Single product
Hydrogen Peroxide
Absorption/Desorption

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Statement of Qualification · Single product

Customer

DENSO WAVE Inc.
1, Yoshiike, Kusaki, Agui-cho, Chita-gun
470-2297 Aichi
Japan

Component tested

Category: Materials

Subcategory: Metals

Product name: SUS316L (Cutting)
(manufacturing date: 4/2020; serial number: PLATE_2020-04)

Hydrogen peroxide absorption / desorption

Methodics: VDI 2083 Part 20
The norms stated generally refer to the version valid at the time of the tests.

Air-conditioned laboratory environment: Temperature: ..... 22 °C ± 0.5 °C

Test procedure parameters:

- Emission test cell volume: ..... 16.5 cm^3
- Exposed surface area: ..... 33 cm^2
- H_2O_2 vapor concentration: ..... 50 ± 20 ppm (V)
- Exposure duration: ..... 60 min
- Air exchange rate during aeration: ..... 50 min^{-1}

Test result / Classification

The hydrogen peroxide absorption / desorption of SUS316L (Cutting) was investigated with the stated test parameters. Using the procedure laid down in VDI 2083 Part 20, the following test result was obtained:

Ø k-value [min]	Standard deviation [min]	Classification
0	0	**non-absorptive**

The k-value represents the required decay time to reduce the hydrogen peroxide vapor concentration measured at the beginning of the aeration phase to one tenth of the original concentration. The material classification is based on three separate measurements. The blank value of the test setup is subtracted from each measurement value. The medium k-value is transferred to the following classification:

- ≤ 5 min: ..... non-absorptive
- > 5 - ≤ 15 min: ..... fast
- > 15 - ≤ 60 min: ..... medium
- > 60 min: ..... slow
- Not determinable: ..... catalytic activity

The k-value can only be used to make a comparative material assessment. Provided the maximum hydrogen peroxide vapor concentration during material exposure is within the defined limit, it does not affect the calculated k-values.

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

Department of Ultraclean Technology and Micromanufacturing

Nobelstrasse 12
70569 Stuttgart
Germany

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

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