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Jung Gummitechnik GmbH
Jugitec Pharma
Report No. JU 1504-756

Statement of
Qualification

Hydrogen Peroxide
Absorption/Desorption

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Statement of Qualification

Customer:

Jung Gummitechnik GmbH
Robert-Bosch-Straße 12
64683 Einhausen
Germany

Component tested

Category: Materials

Subcategory: Consumables

Product name: Jugitec Pharma
(manufacturing date: 3/2015; color: black/white; type: 17BL06 180F;
charge number: 19884)

Hydrogen peroxide absorption/desorption:

Methodics:

- Material exposure to vaporized hydrogen peroxide for a defined duration using an emission test cell
- Aeration (with ambient air) of the test setup with continuous monitoring of the decreasing hydrogen peroxide concentration
- Calculation of the k-value as time needed to reach 1/10 of the maximum hydrogen peroxide concentration measured at start of the aeration

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

Test procedure parameters:

- Chamber diameter: ..... 65 mm
- Chamber height: ..... 5 mm
- Exposed surface area: ..... 33 cm^2
- H_2O_2 vapor concentration: ..... 50 ± 20 ppm (V)
- Purge flow rate: ..... 150 l/h
- Measurement flow rate: ..... 100 l/h
- Excess air flow rate: ..... 50 l/h

Test result / Classification:

Ø k-value [min]	Standard deviation [min]	Classification
0.5	0.6	non-absorptive

The k-value (expressed in minutes) 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 average k-value is transferred to the following classification:

- < 5 min: ..... non-absorptive
- 5-15 min: ..... fast
- 15-60 min: ..... average
- > 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.

Remark: Only the side of the glove that will face chemicals during the use has been analyzed.

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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and Micromanufacturing

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Stuttgart, May 26, 2015
Place, date of first document issued

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Place, current date

i. A.
Frank Bürger, Project Manager Fraunhofer IPA

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