

Copy No.: 1  
Issue No.: 1

Test report No. S286-3/2019  
DRAFT  
DETERMINATION OF BACTERICIDAL (EN 13697:2015+A1:2019)  
ACTIVITY OF THE PRODUCT **PASDEZ**

Sample ID: S286/2019

Sample name: **PASDEZ**

Client: DEZFARMTEH S.R.L., Mihai Eminescu 30 ap. 3, Chisinau, Republica Moldova

Producer: DEZFARMTEH S.R.L., Mihai Eminescu 30 ap. 3, Chisinau, Republica Moldova

Sampling point: DEZFARMTEH S.R.L., Mihai Eminescu 30 ap. 3, Chisinau, Republica Moldova

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From pages: 5

Incoming date:  
11.9.2019

Delivery date:  
12.12.2019

Hodonín, 12.12.2019

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Ing. Jana Šlitrová, Head of Laboratory

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Description: *Testing the efficacy of chemical disinfectants and antiseptics*

Sample ID: S286/2019

Rep No: 133

Sample name: **PASDEZ**

Sampled: by client

Sampling point: DEZFARMTEH S.R.L., Chisinau, Republica Moldova

Client: DEZFARMTEH S.R.L., Chisinau, Republica Moldova

Sampling date: 6.9.2019

Sample delivered: 11.9.2019

Testing date: 10.12. – 11.12.2019

Delivered amount: 2 x 500 g

Batch No: 6

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Subject of testing:

Determination of bactericidal activity of the product.

Identification of the sample:

Name of the product:

**PASDEZ**

Batch number:

6

Date of manufacture:

20.08.2019

Expiry date:

20.08.2022

Manufacturer:

DEZFARMTEH S.R.L., Mihai Eminescu 30 ap. 3, Chisinau, Republica Moldova

Incoming date:

11.9.2019

Storage conditions:

stated by the manufacturer

Active ingredients:

CAS 51580-86-0 Sodium dichloro izocyanurate >99%

Experimental conditions:

**Testing of disinfecting efficiency of chemical disinfecting and antiseptic agents on carriers**

SOP-M-22-12 (EN 13697:2015+A1:2019)

Period of analysis:

10.12. – 11.12.2019

Test temperature:

23 °C ± 1 °C

Test method:

dilution neutralization method

Neutralization medium:

Dey-Engley Neutralizing Broth M 1062

Appearance of the product:

white tablets

Product diluent:

hard water

Test concentration:

2 tabs/10 l (colourless liquid)

Contact time:

30 min

Interfering substances:

0.3 g/l BSA (clean conditions)

Test organisms:

*Escherichia coli*

ATCC 10536

*Pseudomonas aeruginosa*

ATCC 15442

*Staphylococcus aureus*

ATCC 6538

*Enterococcus hirae*

ATCC 10541

Incubation conditions:

37 °C ± 1 °C, 24 hours

Test procedure:

1. Preparation of the test suspension
2. Preparation of product test solutions
3. Quantitative carrier test
4. Incubation and calculation
5. Expression and interpretation of results

Note:

Bactericidal activity – the capability of a product to produce a reduction in the number of viable bacterial cells of relevant organisms on carriers under defined conditions by at least a 4 lg reduction (10<sup>4</sup>).

The drying time: 35 – 50 min

The standard:

EN 13697:2015+A1:2019 Chemical disinfectants and antiseptics – Quantitative non-porous surface test for the evaluation of bactericidal and/or fungicidal activity of chemical disinfectants used in food, industrial, domestic and institutional areas – Test method and requirements without mechanical action (phase 2, step 2) April 2015 + August 2019

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The Number of CFU in the tested product: <math>10^1</math> CFU/g

1. Testing the efficacy of chemical disinfectant **PASDEZ** on carriers – bactericidal activity, clean conditions

Tab No. 1.1 Verification of methodology, clean conditions

| Test organisms                              | Test suspension N   | Validation test   |   |
|---|---|---|---|
|   |   | NT (Product conc.: 2 tabs/10 l)<br>Neutralization test                  | NC<br>Neutralization control  |
| <i>Escherichia coli</i><br>ATCC 10536       | 10 <sup>-6</sup> : 149, 196<br>10 <sup>-7</sup> : 15, 29<br>N: 6.65 | 10 <sup>-3</sup> : >330, >330<br>10 <sup>-4</sup> : 37, 45<br>NT: 6.61  | 10 <sup>-3</sup> : >330, >330<br>10 <sup>-4</sup> : 41, 43<br>NC: 6.62  |
| <i>Staphylococcus aureus</i><br>ATCC 6538   | 10 <sup>-6</sup> : 173, 167<br>10 <sup>-7</sup> : 18, 17<br>N: 6.63 | 10 <sup>-3</sup> : >330, >330<br>10 <sup>-4</sup> : 33, 39<br>NT: 6.56  | 10 <sup>-3</sup> : >330, >330<br>10 <sup>-4</sup> : 46, 33<br>NC: 6.60  |
| <i>Enterococcus hirae</i><br>ATCC 10541     | 10 <sup>-6</sup> : 158, 163<br>10 <sup>-7</sup> : 43, 40<br>N: 7.01 | 10 <sup>-3</sup> : >330, >330<br>10 <sup>-4</sup> : 86, 122<br>NT: 7.02 | 10 <sup>-3</sup> : >330, >330<br>10 <sup>-4</sup> : 136, 81<br>NC: 7.04 |
| Limit                                       | 6.57 ≤ lg N ≤ 7.10  | NT - Nc ≤ ± 0.3 lg  | NC - Nc ≤ ± 0.3 lg  |
|   |   | Validation test   |   |
|   |   | NT (Product conc.: 2 tabs/10 l)<br>Neutralization test                  | NC<br>Neutralization control  |
| <i>Pseudomonas aeruginosa</i><br>ATCC 15442 | 10 <sup>-7</sup> : 195, 161<br>10 <sup>-8</sup> : 17, 19<br>N: 7.65 | 10 <sup>-3</sup> : >330, >330<br>10 <sup>-4</sup> : 42, 40<br>NT: 6.61  | 10 <sup>-3</sup> : >330, >330<br>10 <sup>-4</sup> : 40, 45<br>NC: 6.63  |
| Limit                                       | 7.57 ≤ lg N ≤ 8.10  | NT - Nc ≤ ± 0.3 lg  | NC - Nc ≤ ± 0.3 lg  |

$N = \log_{10} [ \{ 0.025 \cdot (x + x') \} / 2 \cdot d ]$  where x and x' are paired values for which the mean of the value falls between 14 and 330 colonies, d is the dilution factor for the dilution taken into account

$NC \text{ or } NT = \log_{10} [ \{ 10 \cdot (y + y') \} / 2 \cdot d ]$

where y and y' are paired values for which the mean of the value falls between 14 and 330 colonies, d is the dilution factor for the dilution taken into account

Tab No. 1.2 Testing the efficacy of chemical disinfectant **PASDEZ** on test strain, clean conditions

| Test organisms                              | Water control Nc  | Test procedure Nd at concentrations /<br>contact time (min)              |
|---|---|--|
|   |   | 2 tabs/10 l / 30   |
| <i>Escherichia coli</i><br>ATCC 10536       | 10 <sup>-3</sup> : >330, >330<br>10 <sup>-4</sup> : 43, 45<br>Nc: 6.64<br>Nts: >100   | 10 <sup>0</sup> : <14, <14<br>Nd : < 2.15<br>Nts: 0<br><b>R : ≥ 4.49</b> |
| <i>Pseudomonas aeruginosa</i><br>ATCC 15442 | 10 <sup>-3</sup> : >330, >330<br>10 <sup>-4</sup> : 42, 47<br>Nc: 6.65<br>Nts: >100   | 10 <sup>0</sup> : <14, <14<br>Nd : < 2.15<br>Nts: 0<br><b>R : ≥ 4.50</b> |
| <i>Staphylococcus aureus</i><br>ATCC 6538   | 10 <sup>-3</sup> : >330, >330<br>10 <sup>-4</sup> : 48, 31<br>Nc: 6.60<br>Nts: >100   | 10 <sup>0</sup> : <14, <14<br>Nd : < 2.15<br>Nts: 0<br><b>R : ≥ 4.45</b> |
| <i>Enterococcus hirae</i><br>ATCC 10541     | 10 <sup>-3</sup> : >330, >330<br>10 <sup>-4</sup> : 122, 101<br>Nc: 7.05<br>Nts: >100 | 10 <sup>0</sup> : <14, <14<br>Nd : < 2.15<br>Nts: 0<br><b>R : ≥ 4.90</b> |
| Limit                                       | Nts: <100 CFU/ml for active concentration   |  |

$Nc \text{ or } Nd = \log_{10} [ \{ 10 \cdot (a + a') \} / 2 \cdot d ]$

where a and a' are paired values for which the mean of the value falls between 14 and 330 colonies, d is the dilution factor for the dilution taken into account

Reduction R = Nc – Nd

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2. Evaluation of bactericidal activity of the product **PASDEZ** on carriers

Tab No. 2.1 The efficacy of chemical disinfectant **PASDEZ** on test strains – bactericidal activity on carriers

| Bactericidal and fungicidal activity of the product on carriers (EN 13697:2015+A1:2019) |                       |                    |                             |                                     |                         |            |
|---|-----------------------|--------------------|-----------------------------|-------------------------------------|-------------------------|------------|
| Strain  | Test temperature [°C] | Contact time [min] | Product test concentrations | Interfering substances - conditions | R EN 13697:2015+A1:2019 | <b>R</b>   |
| <i>Escherichia coli</i> ATCC 10536  | 23                    | 30                 | 2 tabs/10 l                 | clean                               | ≥ 4                     | > <b>4</b> |
| <i>Pseudomonas aeruginosa</i> ATCC 15442  | 23                    | 30                 | 2 tabs/10 l                 | clean                               | ≥ 4                     | > <b>4</b> |
| <i>Staphylococcus aureus</i> ATCC 6538  | 23                    | 30                 | 2 tabs/10 l                 | clean                               | ≥ 4                     | > <b>4</b> |
| <i>Enterococcus hirae</i> ATCC 10541  | 23                    | 30                 | 2 tabs/10 l                 | clean                               | ≥ 4                     | > <b>4</b> |

Reduction R= Nc – Nd

Prepared by: Ing. Barbora Stoklásková, Lab Technician

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Interpretation:

Results of tests are in Tabs.

According to EN 13697:2015+A1:2019 the tested product **PASDEZ**, batch No. 6, in the concentration 2 tabs/10 l, diluted in hard water, and in the contact time 30 min under clean conditions at temperature  $23\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$  by the dilution neutralization method **decreased** on carriers (stainless steel discs) the number of viable bacterial cells of *Pseudomonas aeruginosa* ATCC 15442, *Staphylococcus aureus* ATCC 6538, *Enterococcus hirae* ATCC 10541 by at least a 4 lg reduction.

Conclusion:

The product **PASDEZ** is capable of reducing the number of viable bacterial cells of the relevant organisms under defined conditions (EN 13697:2015+A1:2019 – carriers – stainless steel discs, 2 tabs/10 l, 30 min, clean,  $23\text{ }^{\circ}\text{C}$ ) to the declared values, and consequently, can be called bactericidal on carriers.

12.12.2019, Hodonín

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Ing. Eva Kremlová, Leader of Study