

Test report No. S286-1/2019

DETERMINATION OF BACTERICIDAL (EN 13727:2012+A2:2015) AND FUNGICIDAL (EN 13624:2013, 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

Page: 1

From pages: 13

Incoming date:
11.9.2019

Delivery date:
20.11.2019

Hodonín, 20.11.2019



Ing. Jana Šlitrová, Head of Laboratory

The report may be reproduced only as a whole, in parts only upon written permission of the laboratory. The test results relate only to the samples stated in the Test Report. The Lab does not take any guarantee for the identity of samples not taken by the lab personnel.

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: 15.10. – 21.10.2019
Delivered amount: 2 x 500 g
Batch No: 6
Page: 2

Subject of testing:

Determination of bactericidal and fungicidal 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 by suspension method

SOP-M-19-00 (EN 13727:2012+A2:2015)

Period of analysis:	15.10. – 16.10.2019
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:	5 min
Interfering substances:	0.3 g/l BSA (clean conditions)
Test organisms:	<i>Pseudomonas aeruginosa</i> ATCC 15442 <i>Staphylococcus aureus</i> ATCC 6538 <i>Enterococcus hirae</i> ATCC 10541
Incubation conditions:	37 °C ± 1 °C, 24 hours

Test procedure:

1. Preparation of test suspension
2. Preparation of product test solutions
3. Quantitative suspension 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 under defined conditions by at least a 5 lg reduction (10^5).

$R = N_0 / N_a$ = the reduction in viability, or $\lg R = \lg N_0 - \lg N_a$

The standard:

EN 13727:2012+A2:2015 Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of bactericidal activity in the medical area – Test method and requirements (phase 2, step 1) October 2015

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: 15.10. – 21.10.2019
 Delivered amount: 2 x 500 g
 Batch No: 6
 Page: 3

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

1. Testing the efficacy of chemical disinfectant PASDEZ on *Pseudomonas aeruginosa* ATCC 15442

Tab No. 1.1 Verification of methodology, clean conditions

Validation of suspension (N_{V0})			Validation of selected experimental conditions (A)			Neutralizer toxicity control (B)			Method validation (C) Product conc.: 2 tabs/10 l		
V_{c1}	69	$\Phi_{N_{V0}} = 76$	V_{c1}	74	$\Phi_A = 69.5$	V_{c1}	76	$\Phi_B = 69.5$	V_{c1}	78	$\Phi_C = 74$
V_{c2}	83		V_{c2}	65		V_{c2}	63		V_{c2}	70	
$30 \leq \Phi_{N_{V0}} \leq 160$			$\Phi_A \geq 0.5 \Phi_{N_{V0}}$			$\Phi_B \geq 0.5 \Phi_{N_{V0}}$			$\Phi_C \geq 0.5 \Phi_{N_{V0}}$		
x	yes	no	x	Yes	no	x	yes	no	x	yes	no
Validation of suspension (N_{VB})											
V_{c1}	81	V_{c2}	73	$\Phi_{N_{VB}}$	77	$30 < \Phi_{N_{VB}} (N_{VB}/1000) < 160$			x	yes	no

Tab No. 1.2 Test suspension

Test suspension N	N	V_{c1}	V_{c2}	Test suspension N_0 (time = 0)		
$\Phi = 286 \times 10^6 = \lg 8.46$	10^{-6}	312	263	$\lg N_0 = \lg N/10 = \lg 7.46$		
$8.17 \leq \lg N \leq 8.70$	10^{-7}	25	29	$7.17 \leq \lg N_0 \leq 7.70$		
				x	yes	no

Tab No. 1.3 Testing the efficacy of chemical disinfectant PASDEZ on *Pseudomonas aeruginosa* ATCC 15442

Test concentration (%) / contact time (min) / conditions	Dilution after test procedure	V_{c1}	V_{c2}	$\lg N_a = \lg (\Phi_a \times 10)$	$\lg R$ ($\lg N_0 = \lg 7.46$)
2 tabs/10 l / 5 / clean	10^0	<14	<14	< 2.15	≥ 5.31

2. Testing the efficacy of chemical disinfectant PASDEZ on *Staphylococcus aureus* ATCC 6538

Tab No. 2.1 Verification of methodology, clean conditions

Validation of suspension (N_{V0})			Validation of selected experimental conditions (A)			Neutralizer toxicity control (B)			Method validation (C) Product conc.: 2 tabs/10 l		
V_{c1}	53	$\Phi_{N_{V0}} = 69$	V_{c1}	67	$\Phi_A = 68.5$	V_{c1}	79	$\Phi_B = 65$	V_{c1}	79	$\Phi_C = 67$
V_{c2}	85		V_{c2}	70		V_{c2}	51		V_{c2}	55	
$30 \leq \Phi_{N_{V0}} \leq 160$			$\Phi_A \geq 0.5 \Phi_{N_{V0}}$			$\Phi_B \geq 0.5 \Phi_{N_{V0}}$			$\Phi_C \geq 0.5 \Phi_{N_{V0}}$		
x	yes	no	x	Yes	no	x	yes	no	x	yes	no
Validation of suspension (N_{VB})											
V_{c1}	77	V_{c2}	67	$\Phi_{N_{VB}}$	72	$30 < \Phi_{N_{VB}} (N_{VB}/1000) < 160$			x	yes	no

Tab No. 2.2 Test suspension

Test suspension N	N	V_{c1}	V_{c2}	Test suspension N_0 (time = 0)		
$\Phi = 285 \times 10^6 = \lg 8.45$	10^{-6}	251	319	$\lg N_0 = \lg N/10 = \lg 7.45$		
$8.17 \leq \lg N \leq 8.70$	10^{-7}	30	27	$7.17 \leq \lg N_0 \leq 7.70$		
				x	yes	no

Tab No. 2.3 Testing the efficacy of chemical disinfectant PASDEZ on *Staphylococcus aureus* ATCC 6538

Test concentration (%) / contact time (min) / conditions	Dilution after test procedure	V_{c1}	V_{c2}	$\lg N_a = \lg (\Phi_a \times 10)$	$\lg R$ ($\lg N_0 = \lg 7.45$)
2 tabs/10 l / 5 / clean	10^0	<14	<14	< 2.15	≥ 5.30

Note: V_c = value is the number of cfu per ml, Φ = average V_{c1} + V_{c2} (1. + 2. duplicate V_c values), N = the number of cfu/ml of the bacterial test suspension, N_0 = the number of cfu/ml of the bacterial test suspension at the beginning of the contact time = 0, N_V = the number of cfu/ml of the bacterial test suspension for validation, N_{V0} (A,C), N_{VB} (B) = the number of cfu/ml of the bacterial test suspensions for validation in the test mixture A, B, C at the beginning of the contact time = 0, N_a = the number of viable bacterial cells per ml in the test mixture, A, B, C = the number of viable bacterial cells per ml in control tests (A – experimental conditions control, B – neutralizer toxicity validation, C – method validation), $R = N_0 / N_a$ = the reduction in viability, or $\lg R = \lg N_0 - \lg N_a$

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: 15.10. – 21.10.2019
 Delivered amount: 2 x 500 g
 Batch No: 6
 Page: 4

3. Testing the efficacy of chemical disinfectant **PASDEZ** on *Enterococcus hirae* ATCC 10541

Tab No. 3.1 Verification of methodology, clean conditions

Validation of suspension (N _{V0})				Validation of selected experimental conditions (A)				Neutralizer toxicity control (B)				Method validation (C) Product conc.: 2 tabs/10 l			
V _{c1}	43	Φ _{NV0} = 46.5	Φ _A = 43.5	V _{c1}	46	Φ _B = 45	Φ _C = 42	V _{c1}	43	Φ _B = 45	Φ _C = 42	V _{c1}	36	Φ _C = 42	Φ _C = 42
V _{c2}	50			V _{c2}	41			V _{c2}	47			V _{c2}	48		
30 ≤ Φ _{NV0} ≤ 160				Φ _A ≥ 0.5 Φ _{NV0}				Φ _B ≥ 0.5 Φ _{NV0}				Φ _C ≥ 0.5 Φ _{NV0}			
x	yes	no	no	x	Yes	no	no	x	yes	no	no	x	yes	no	no
Validation of suspension (N _{VB})															
V _{c1}		47		V _{c2}		47		Φ _{NVB}		47		30 ≤ Φ _{NVB} (N _{VB} /1000) ≤ 160			
x		yes		x		yes		x		yes		x		no	

Tab No. 3.2 Test suspension

Test suspension N	N	V _{c1}	V _{c1}	Test suspension N ₀ (time = 0) lg N ₀ = lg N/10 = lg 7.66 7.17 ≤ lg N ₀ ≤ 7.70		
Φ = 45.5 x 10 ⁷ = lg 8.66	10 ⁻⁶	> 330	> 330			
8.17 ≤ lg N ≤ 8.70	10 ⁻⁷	48	43			
				x	yes	no

Tab No. 3.3 Testing the efficacy of chemical disinfectant **PASDEZ** on *Enterococcus hirae* ATCC 10541

Test concentration (%) / contact time (min) / conditions	Dilution after test procedure	V _{c1}	V _{c2}	lg N _a = lg (Φ _a x 10)	lg R (lg N ₀ = lg 7.66)
2 tabs/10 l / 5 / clean	10 ⁰	<14	<14	< 2.15	≥ 5.51

4. Evaluation of bactericidal activity of the product **PASDEZ**

Tab No. 4.1 The efficacy of chemical disinfectant **PASDEZ** on test strains – bactericidal activity

Strain	Bactericidal activity of the product (EN 13727:2012+A2:2015)					
	Test temperature [°C]	Contact time [min]	Product test concentrations	Interfering substances - conditions	lg R EN 13727:2012 +A2:2015	lg R
<i>Pseudomonas aeruginosa</i> ATCC 15442	23	5	2 tabs/10 l	clean	≥ 5	> 5
<i>Staphylococcus aureus</i> ATCC 6538	23	5	2 tabs/10 l	clean	≥ 5	> 5
<i>Enterococcus hirae</i> ATCC 10541	23	5	2 tabs/10 l	clean	≥ 5	> 5

Note: V_c = value is the number of cfu per ml, Φ = average V_{c1} a V_{c2} (1. + 2. duplicate V_c values), N = the number of cfu/ml of the bacterial test suspension, N₀ = the number of cfu/ml of the bacterial test suspension at the beginning of the contact time = 0, N_v = the number of cfu/ml of the bacterial test suspension for validation, N_{v0} (A,C), N_{vB} (B) = the number of cfu/ml of the bacterial test suspensions for validation in the test mixture A, B, C at the beginning of the contact time = 0, N_a = the number of viable bacterial cells per ml in the test mixture, A, B, C = the number of viable bacterial cells per ml in control tests (A – experimental conditions control, B – neutralizer toxicity validation, C – method validation), R = N₀/ N_a = the reduction in viability, or lg R = lg N₀ – lg N_a

Prepared by: Mgr. Karolína Světlíková, Lab Technician

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: 15.10. – 21.10.2019
Delivered amount: 2 x 500 g
Batch No: 6
Page: 5

Experimental conditions:

Testing of disinfecting efficiency of chemical disinfecting and antiseptic agents by suspension method

SOP-M-19-00 (EN 13624:2013)

Period of analysis:	18.10. – 21.10.2019
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:	<i>Candida albicans</i> ATCC 10231 <i>Aspergillus brasiliensis (niger)</i> ATCC 16404
Incubation conditions:	30 °C ± 1 °C, 48 hours and additional period of 24 or 48 hours

Test procedure:

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

Note:

Presence of a high concentration (at least 75%) of *Aspergillus brasiliensis* spiny spores in the test suspension – yes.

Fungicidal activity – the capability of a product to produce a reduction in the number of viable fungi belonging to reference strains under defined conditions by at least a 4 lg reduction (10^4).

Yeasticidal activity – the capability of a product to produce a reduction in the number of viable yeast cells of relevant test organisms under defined conditions by at least a 4 lg reduction (10^4).

$R = N_0 / N_a$ = the reduction in viability, or $\lg R = \lg N_0 - \lg N_a$

The standard:

EN 13624:2013 Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity in the medical area - Test method and requirements (phase 2, step 1) September 2013

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: 15.10. – 21.10.2019

Delivered amount: 2 x 500 g

Batch No: 6

Page: 6

5. Testing the efficacy of chemical disinfectant PASDEZ on *Candida albicans* ATCC 10231

Tab No. 5.1 Verification of methodology, clean conditions

Validation of suspension (N_{V0})			Validation of selected experimental conditions (A)			Neutralizer toxicity control (B)			Method validation (C) Product conc. 2 tabs/10 l		
V_{c1}	71	$\Phi_{N_{V0}} = 85$	V_{c1}	83	$\Phi_A = 79.5$	V_{c1}	94	$\Phi_B = 79.5$	V_{c1}	76	$\Phi_C = 72.5$
V_{c2}	99		V_{c2}	76		V_{c2}	65		V_{c2}	69	
$30 \leq \Phi_{N_{V0}} \leq 160$			$\Phi_A \geq 0.5 \Phi_{N_{V0}}$			$\Phi_B \geq 0.5 \Phi_{N_{V0}}$			$\Phi_C \geq 0.5 \Phi_{N_{V0}}$		
x	yes	no	x	yes	no	x	yes	no	x	yes	no
Validation of suspension (N_{VB})											
V_{c1}	88	V_{c2}	81	$\Phi_{N_{VB}}$	84.5	$30 < \Phi_{N_{VB}} (N_{VB}/1000) \leq 160$					
									x	yes	no

Tab No. 5.2 Test suspension

Test suspension N	N	V_{c1}	V_{c2}	Test suspension N_0 (time = 0)
$\Phi = 183 \times 10^5 = \lg 7.26$	10^{-5}	174	194	$\lg N_0 = \lg N/10 = \lg 6.26$
$7.17 \leq \lg N \leq 7.70$	10^{-6}	20	15	$6.17 \leq \lg N_0 \leq 6.70$
				x
				yes
				no

Tab No. 5.3 Testing the efficacy of chemical disinfectant PASDEZ on *Candida albicans* ATCC 10231

Test concentration (%) / contact time (min) / conditions	Dilution after test procedure	V_{c1}	V_{c2}	$\lg N_a = \lg (\Phi_a \times 10)$	$\lg R$ ($\lg N_0 = \lg 6.26$)
2 tabs/10 l / 30 / clean	10^0	<14	<14	< 2.15	≥ 4.11

6. Testing the efficacy of chemical disinfectant PASDEZ on *Aspergillus brasiliensis* (niger) ATCC 16404

Tab No. 6.1 Verification of methodology, clean conditions

Validation of suspension (N_{V0})			Validation of selected experimental conditions (A)			Neutralizer toxicity control (B)			Method validation (C) Product conc. 2 tabs/10 l		
V_{c1}	59	$\Phi_{N_{V0}} = 61.5$	V_{c1}	60	$\Phi_A = 51.5$	V_{c1}	64	$\Phi_B = 50.5$	V_{c1}	47	$\Phi_C = 51$
V_{c2}	64		V_{c2}	43		V_{c2}	37		V_{c2}	55	
$30 \leq \Phi_{N_{V0}} \leq 160$			$\Phi_A \geq 0.5 \Phi_{N_{V0}}$			$\Phi_B \geq 0.5 \Phi_{N_{V0}}$			$\Phi_C \geq 0.5 \Phi_{N_{V0}}$		
x	yes	no	x	yes	no	x	yes	no	x	yes	no
Validation of suspension (N_{VB})											
V_{c1}	54	V_{c2}	67	$\Phi_{N_{VB}}$	60.5	$30 < \Phi_{N_{VB}} (N_{VB}/1000) \leq 160$					
									x	yes	no

Tab No. 6.2 Test suspension

Test suspension N	N	V_{c1}	V_{c2}	Test suspension N_0 (time = 0)
$\Phi = 49 \times 10^6 = \lg 7.69$	10^{-5}	> 165	> 165	$\lg N_0 = \lg N/10 = \lg 6.69$
$7.17 \leq \lg N \leq 7.70$	10^{-6}	55	43	$6.17 \leq \lg N_0 \leq 6.70$
				x
				yes
				no

Tab No. 6.3 Testing the efficacy of chemical disinfectant PASDEZ on *Aspergillus brasiliensis* (niger) ATCC 16404

Test concentration (%) / contact time (min) / conditions	Dilution after test procedure	V_{c1}	V_{c2}	$\lg N_a = \lg (\Phi_a \times 10)$	$\lg R$ ($\lg N_0 = \lg 6.69$)
2 tabs/10 l / 30 / clean	10^0	<14	<14	< 2.15	≥ 4.54

Note: V_c = value is the number of cfu per ml, Φ = average V_{c1} + V_{c2} (1. + 2. duplicate V_c values), N = the number of cfu/ml of the test suspension, N_0 = the number of cfu/ml of the test suspension at the beginning of the contact time = 0, N_V = the number of cfu/ml of the test suspension for validation, N_{V0} (A,C), N_{VB} (B) = the number of cfu/ml of the test suspensions for validation in the test mixture A, B, C at the beginning of the contact time = 0, N_a = the number of surviving fungi per ml in the test mixture, A, B, C = the number of surviving fungi per ml in control tests (A – experimental conditions control, B – neutralizer toxicity validation, C – method validation), R = N_0/N_a = the reduction in viability, or $\lg R = \lg N_0 - \lg N_a$

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: 15.10. – 21.10.2019

Delivered amount: 2 x 500 g

Batch No: 6

Page: 7

7. Evaluation of fungicidal activity of the product **PASDEZ**

Tab No. 7.1 The efficacy of chemical disinfectant **PASDEZ** on test strains – fungicidal activity

Fungicidal activity of the product (EN 13624:2013)						
Strain	Test temperature [°C]	Contact time [min]	Product test concentrations	Interfering substances - conditions	lg R EN 13624:2013	lg R
<i>Candida albicans</i> ATCC 10231	23	30	2 tabs/10 l	clean	≥ 4	> 4
<i>Aspergillus brasiliensis</i> (<i>niger</i>) ATCC 16404	23	30	2 tabs/10 l	clean	≥ 4	> 4

Note: V_c = value is the number of cfu per ml, Φ = average V_{c1} a V_{c2} (1. + 2. duplicate V_c values), N = the number of cfu/ml of the test suspension, N_0 = the number of cfu/ml of the test suspension at the beginning of the contact time = 0, N_V = the number of cfu/ml of the test suspension for validation, N_{V0} (A,C), N_{VB} (B) = the number of cfu/ml of the test suspensions for validation in the test mixture A, B, C at the beginning of the contact time = 0, N_a = the number of surviving fungi per ml in the test mixture, A, B, C = the number of surviving fungi per ml in control tests (A – experimental conditions control, B – neutralizer toxicity validation, C – method validation), $R = N_0 / N_a$ = the reduction in viability, or $\lg R = \lg N_0 - \lg N_a$

Prepared by: Mgr. Karolína Světlíková, Lab Technician

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: 15.10. – 21.10.2019
Delivered amount: 2 x 500 g
Batch No: 6
Page: 8

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: 18.10. – 21.10.2019
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: *Candida albicans* ATCC 10231
Aspergillus brasiliensis (niger) ATCC 16404
Incubation conditions: 30 °C ± 1 °C, 48 hours and additional period of 24 or 48 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:

Presence of a high concentration (at least 75%) of *Aspergillus brasiliensis* spiny spores in the test suspension – yes.

Fungicidal activity – the capability of a product to produce a reduction in the number of viable fungi of relevant organisms on carriers under defined conditions by at least 3 orders (10^3).

Yeasticidal activity – the capability of a product to produce a reduction in the number of viable fungi belonging to reference strain *Candida albicans* on carriers under defined conditions by at least a 3 lg reduction (10^3).

The drying time: 30 – 35 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

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: 15.10. – 21.10.2019
 Delivered amount: 2 x 500 g
 Batch No: 6
 Page: 9

8. Testing the efficacy of chemical disinfectant **PASDEZ** on carriers – fungicidal activity

Tab No. 8.1 Verification of methodology, clean conditions

Test organisms	Test suspension N	Validation test	
		NT (Product conc.: 2 tabs/10 l) Neutralization test	NC Neutralization control
<i>Candida albicans</i> ATCC 10231	10 ⁻⁵ : >330, >330 10 ⁻⁶ : 55, 39 N : 6.07	10 ⁻³ : 152, 163 10 ⁻⁴ : 16, 17 NT : 6.20	10 ⁻³ : 167, 172 10 ⁻⁴ : 17, 17 NC : 6.23
<i>Aspergillus brasiliensis (niger)</i> ATCC 16404	10 ⁻⁵ : >165, >165 10 ⁻⁶ : 47, 41 N : 6.04	10 ⁻² : >165, >165 10 ⁻³ : 82, 70 NT : 5.88	10 ⁻² : >165, >165 10 ⁻³ : 90, 69 NC : 5.90
Limit	5.57 ≤ lg N ≤ 6.10	NT ≥ 0.5 x Nc	NC ≥ 0.5 x Nc

$$N = \log_{10} [\{0.025 \cdot (x + x')\} / 2 \cdot d]$$

where x and x' are paired values for which the mean of the value falls between 14 and 330 colonies for yeast and 14 and 165 colonies for mould, 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 for yeast and 14 and 165 colonies for mould, d is the dilution factor for the dilution taken into account

Tab No. 8.2 Testing the efficacy of chemical disinfectant **PASDEZ** on test strain, clean conditions

Test organisms	Water control Nc	Test procedure Nd at concentrations / contact time (min)
		2 tabs/10 l / 30
<i>Candida albicans</i> ATCC 10231	10 ⁻³ : 184, 191 10 ⁻⁴ : 20, 18 Nc : 6.27 Nts: >100	10 ⁰ : <14, <14 Nd : < 2.15 Nts: 0 R : ≥ 4.12
<i>Aspergillus brasiliensis (niger)</i> ATCC 16404	10 ⁻² : >165, >165 10 ⁻³ : 72, 100 Nc : 5.93 Nts: >100	10 ⁰ : <14, <14 Nd : < 2.15 Nts: 0 R : ≥ 3.78
Limit	lg Nc ≥ lg 5.27	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 for yeast and 14 and 165 colonies for mould, d is the dilution factor for the dilution taken into account

$$\text{Reduction } R = Nc - Nd$$

9. Evaluation of fungicidal activity of the product **PASDEZ** on carriers

Tab No. 9.1 The efficacy of chemical disinfectant **PASDEZ** on test strains – fungicidal activity on carriers

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	R
<i>Candida albicans</i> ATCC 10231	23	30	2 tabs/10 l	clean	≥ 3	> 3
<i>Aspergillus brasiliensis (niger)</i> ATCC 16404	23	30	2 tabs/10 l	clean	≥ 3	> 3

$$\text{Reduction } R = Nc - Nd$$

Prepared by: Ing. Eva Kremlová, Lab Technician

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

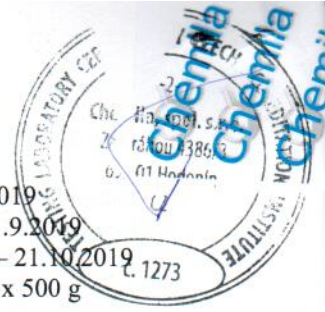
Sample delivered: 11.9.2019

Testing date: 15.10. – 21.10.2019

Delivered amount: 2 x 500 g

Batch No: 6

Page: 10



Interpretation:

Results of tests are in Tabs.

According to EN 13727:2012+A2:2015 the tested product **PASDEZ**, batch No. 6, in the concentration 2 tabs/10 l, diluted in hard water, and in the contact time 5 min under clean conditions at temperature $23\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ by the dilution neutralization method **decreased** the number of viable bacterial cells of *Pseudomonas aeruginosa* ATCC 15442, *Staphylococcus aureus* ATCC 6538, *Enterococcus hirae* ATCC 10541 by at least a 5 lg reduction.

According to EN 13624:2013 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** the number of viable yeast cells of *Candida albicans* ATCC 10231 and the number of mould spores of *Aspergillus brasiliensis (niger)* ATCC 16404 by at least a 4 lg reduction.

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 yeast cells of *Candida albicans* ATCC 10231 and the number of mould spores of *Aspergillus brasiliensis (niger)* ATCC 16404 by at least a 3 lg reduction.

Conclusion:

The product **PASDEZ** is capable of reducing the number of viable bacterial cells of the relevant organisms under defined conditions (EN 13727:2012+A2:20 – 2 tabs/10 l, 5 min, clean, $23\text{ }^{\circ}\text{C}$) to the declared values, and consequently, can be called bactericidal.

The product **PASDEZ** is capable of reducing the number of viable vegetative yeast cells and mould spores of the relevant organisms under defined conditions (EN 13624:2013 – 2 tabs/10 l, 30 min, clean, $23\text{ }^{\circ}\text{C}$) to the declared values, and consequently, can be called fungicidal.

The product **PASDEZ** is capable of reducing the number of viable yeast cells and the number of mould spores of the relevant organism 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 fungicidal.

20.11.2019, Hodonín

Ing. Barbora Stoklaskova, Leader of Study

