



Test Report

Yeasticidal activity of the disinfectant

“TEGO 2000”

According to BS EN 1650 (2008) “TEGO 2000“ possesses yeasticidal activity at a concentration of 0.1 % for **obligatory** purposes at 20°C with a contact time of 15 min and under clean or dirty conditions (0.3 g/l or 3.0 g/l bovine albumin) for the referenced strain of *Candida albicans* ATCC 10231.

According to BS EN 1650 (2008) “TEGO 2000“ possesses yeasticidal activity at a concentration of 0.25 % or 0.5 % for additional purposes at 10°C with a contact time of 15 min and under clean or dirty conditions (0.3 g/l or 3.0 g/l bovine albumin) for the referenced strain of *Candida albicans* ATCC 10231.

Customer

Evonik Goldschmidt GmbH
Goldschmidtstr. 100
45127 Essen

Test laboratory

Technische Mikrobiologie
Dr. Jutta Höffler GmbH
Ahrensburger Str. 162
22045 Hamburg

Hamburg, 2009-06-10



DAC - PL - 0217 - 03
Accreditation according to
DIN EN ISO/IEC 17025

Bankverbindung · Hamburger Sparkasse · Konto Nr. 1208/115 319 · BLZ 200 505 50
IBAN DE 12 2005 0550 1208 1153 19 · BIC: HASPDEHH XXX · Geschäftsführerin: Dr. rer. nat. Jutta Höffler
Amtsgericht Hamburg Handelsregister B Nr. 58 682 · St.Nr.: 08/850/00703 · UST.IdNr. DE 171622643



A160+161/09 TEGO 2000 engl.
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Test report
BS EN 1650, yeasticidal activity
(obligatory and additional)

Customer

Evonik Goldschmidt GmbH
Goldschmidtstr. 100
45127 Essen

Test laboratory

Technische Mikrobiologie
Dr. Jutta Höffler GmbH
Ahrensburger Str. 162
22045 Hamburg

Disinfectant sample

Name of the product **TEGO 2000**
ID.No **ES 68757650**
Date of delivery..... **2009-04-30**
Manufacturer..... **Evonik Goldschmidt GmbH,**
Goldschmidtstr. 100
45127 Essen
Storage conditions..... **room temperature**
Appearance of the product..... **yellowish clear**
Active substance(s)..... **amphoteric surfactants**
Diluent recommended from manufacturer..... **town water**

Test method and its validation

Data..... **see "test results" (enclosed)**



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Experimental conditions

Diluent used for product test solutionshard water

Product test concentrationssee "test results" (enclosed)

Obligatory test conditions

Test organism.....Candida albicans ATCC 10231

Test temperature20°C

Contact time.....15 min

Interfering substance(s).....0.3 g/ l bovine albumin
= clean conditions
3.0 g/ l bovine albumin
= dirty conditions

Temperature of incubation.....30°C

Additional test conditions

Test organism.....Candida albicans ATCC 10231

Test temperature10°C

Contact time.....15 min

Interfering substance(s).....0.3 g/ l bovine albumin
= clean conditions
3.0 g/ l bovine albumin
= dirty conditions

Temperature of incubation.....30°C

Special remarks

All tests and validations were between the basic limits.

The product shows at least at one concentration a reduction of 4 lg and at one concentration less than 4 lg.

There was no precipitation during the test (the test suspensions were homogeneous).

Test results

s. enclosed sheets (p. 4-7)

Conclusion

The yeasticidal concentration for general purposes of the product **TEGO 2000**, batch ES 68757650, is
0.1 % (v/v)
according to BS EN 1650 (**obligatory** conditions) under clean conditions.

The yeasticidal concentration for general purposes of the product **TEGO 2000**, batch ES 68757650, is
0.1 % (v/v)
according to BS EN 1650 (**obligatory** conditions) under dirty conditions.

The yeasticidal concentration for specific purposes of the product **TEGO 2000**, batch ES 68757650, is
0.25 % (v/v)
according to BS EN 1650 at 10°C under clean conditions.

The yeasticidal concentration for specific purposes of the product **TEGO 2000**, batch ES 68757650, is
0.5 % (v/v)
according to BS EN 1650 at 10°C under dirty conditions.

Technische Mikrobiologie
Dr. Jutta Höffler GmbH

Hamburg, 2009-06-10


Dr. Jutta Höffler

Test results (Yeasticidal suspension test)

BS EN 1650 (phase 2/step 1) Name of the product: TEGO 2000 ID number: ES 68757650
 Laboratory number: 30.04.09-671

remarks: none

Dilution-neutralisation-method: ☒ Pour plate technique: ☒ Spread plate technique: ☐ Number of plates: 1/ml
 Neutralizer: polysorbate 80 (30 g/l) + saponin (30 g/l) + lecithin (3.0 g/l) + histidine (1.0 g/l) in diluent

Test temperature: 20°C Interfering substance: bovine albumin: 0.3 g/l
 Test organism: **Candida albicans ATCC 10231** Temperature of incubation: 30°C

Date of test: 2009-05-20 Responsible person: Ludwig sign: Ludwig

Diluent for product test solutions: hard water Appearance of the product dilutions: colourless clear

Validations and controls

Validation suspension (N _{v0})			Experimental conditions control (A)			Neutralizer toxicity control (B)			Dilution-neutralization control (C) Product conc.: 10 ml/l		
Vc1	120	Σ =	Vc1	84	Σ =	Vc1	122	Σ =	Vc1	120	Σ =
Vc2	172	146	Vc2	98	91	Vc2	118	120	Vc2	126	123
30 ≤ Σ of N _{v0} ≤ 160? yes ☒ no ☐			Σ of A is ≥ 0.5 x Σ of N _{v0} ? yes ☒ no ☐			Σ of B is ≥ 0.5 x Σ of N _{v0} ? yes ☒ no ☐			Σ of C is ≥ 0.5 x Σ of N _{v0} ? yes ☒ no ☐		

Test suspension and test

Test suspension (N and N ₀)	N	Vc1	Vc2	Σ = 285 x 10 ⁵ =	lg N = 7.46
	10 ⁻⁵	>330	>330	N ₀ = N/10 =	lg N ₀ = 6.46
	10 ⁻⁶	33	24	6,17 ≤ lg N ₀ ≤ 6,70 ? yes ☒ no ☐	

Product concentration (%)	Vc1	Vc2	Na = Σ x 10	lg Na	lg R	Contact time (min)
0.01	>330	>330	>3300	>3.52	<2.94	15
0.10	0	0	<140	<2.15	>4.31	15
0.25	0	0	<140	<2.15	>4.31	15

Explanation:

Vc = counting per ml (one plate or more)

Σ = mean of Vc1 and Vc2 (1. + 2. double determination)

R = reduction (lg R = lg N₀ - lg Na)

Test results (Yeasticidal suspension test)

BS EN 1650 (phase 2/step 1) Name of the product: TEGO 2000 ID number: ES 68757650

Laboratory number: 30.04.09-671

remarks: none

Dilution-neutralisation-method: ☒ Pour plate technique: ☒ Spread plate technique: ☐ Number of plates: 1/ml
 Neutralizer: polysorbate 80 (30 g/l) + saponin (30 g/l) + lecithin (3.0 g/l) + histidine (1.0 g/l) in diluent

Test temperature: 20°C Interfering substance: bovine albumin: 3.0 g/l

Test organism: **Candida albicans ATCC 10231** Temperature of incubation: 30°C

Date of test: 2009-05-20

Responsible person: Ludwig

sign: Ludwig

Diluent for product test solutions: hard water

Appearance of the product dilutions: colourless clear

Validations and controls

Validation suspension (N _{v0})			Experimental conditions control (A)			Neutralizer toxicity control (B)			Dilution-neutralization control (C) Product conc.: 10 ml/l		
Vc1	120	Σ =	Vc1	100	Σ =	Vc1	122	Σ =	Vc1	128	Σ =
Vc2	172	146	Vc2	105	103	Vc2	118	90	Vc2	132	130
30 ≤ Σ of N _{v0} ≤ 160? yes ☒ no ☐			Σ of A is ≥ 0.5 x Σ of N _{v0} ? yes ☒ no ☐			Σ of B is ≥ 0.5 x Σ of N _{v0} ? yes ☒ no ☐			Σ of C is ≥ 0.5 x Σ of N _{v0} ? yes ☒ no ☐		

Test suspension and test

Test suspension (N and N ₀)	N	Vc1	Vc2	Σ = 285 x 10 ⁵ =	lg N = 7.46
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	10 ⁻⁶	33	24	6,17 ≤ lg N ₀ ≤ 6,70 ? yes ☒ no ☐	

Product concentration (%)	Vc1	Vc2	Na = Σ x 10	lg Na	lg R	Contact time (min)
0.01	>330	>330	>3300	>3.52	<2.94	15
0.10	0	4	<140	<2.15	>4.31	15
0.25	0	0	<140	<2.15	>4.31	15

Explanation:

Vc = counting per ml (one plate or more)

Σ = mean of Vc1 and Vc2 (1. + 2. double determination)

R = reduction (lg R = lg N₀ - lg Na)

Test results (Yeasticidal suspension test)

BS EN 1650 (phase 2/step 1) Name of the product: TEGO 2000 ID number: ES 68757650

Laboratory number: 30.04.09-671

remarks: none

Dilution-neutralisation-method: ☒ Pour plate technique: ☒ Spread plate technique: ☐ Number of plates: 1/ml
 Neutralizer: polysorbate 80 (30 g/l) + saponin (30 g/l) + lecithin (3.0 g/l) + histidine (1.0 g/l) in diluent

Test temperature: 10°C Interfering substance: bovine albumin: 0.3 g/l

Test organism: **Candida albicans ATCC 10231** Temperature of incubation: 30°C

Date of test: 2009-05-20

Responsible person: Ludwig

sign: Ludwig

Diluent for product test solutions: hard water

Appearance of the product dilutions: colourless clear

Validations and controls

Validation suspension (N _{v0})			Experimental conditions control (A)			Neutralizer toxicity control (B)			Dilution-neutralization control (C) Product conc.: 10 ml/l		
Vc1	120	Σ =	Vc1	120	Σ =	Vc1	122	Σ =	Vc1	148	Σ =
Vc2	172	146	Vc2	90	155	Vc2	118	120	Vc2	152	150
30 ≤ Σ of N _{v0} ≤ 160? yes ☒ no ☐			Σ of A is ≥ 0.5 x Σ of N _{v0} ? yes ☒ no ☐			Σ of B is ≥ 0.5 x Σ of N _{v0} ? yes ☒ no ☐			Σ of C is ≥ 0.5 x Σ of N _{v0} ? yes ☒ no ☐		

Test suspension and test

Test suspension (N and N ₀)	N	Vc1	Vc2	Σ = 285 x 10 ⁵ =	lg N = 7.46
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	10 ⁻⁶	33	24	6,17 ≤ lg N ₀ ≤ 6,70 ? yes ☒ no ☐	

Product concentration (%)	Vc1	Vc2	Na = Σ x 10	lg Na	lg R	Contact time (min)
0.01	>330	>330	>3300	>3.52	<2.94	15
0.10	>330	>330	>3300	>3.52	<2.94	15
0.25	0	0	<140	<2.15	>4.31	15

Explanation:

Vc = counting per ml (one plate or more)

Σ = mean of Vc1 and Vc2 (1. + 2. double determination)

R = reduction (lg R = lg N₀ - lg Na)

Test results (Yeasticidal suspension test)

BS EN 1650 (phase 2/step 1) Name of the product: TEGO 2000 ID number: ES 68757650
 Laboratory number: 30.04.09-671

remarks: none

Dilution-neutralisation-method: ☒ Pour plate technique: ☒ Spread plate technique: ☐ Number of plates: 1/ml
 Neutralizer: polysorbate 80 (30 g/l) + saponin (30 g/l) + lecithin (3.0 g/l) + histidine (1.0 g/l) in diluent

Test temperature: 10°C Interfering substance: bovine albumin: 3.0 g/l
 Test organism: **Candida albicans ATCC 10231** Temperature of incubation: 30°C

Date of test: 2009-05-20 Responsible person: Ludwig sign: Ludwig

Diluent for product test solutions: hard water Appearance of the product dilutions: colourless clear

Validations and controls

Validation suspension (N _{v0})			Experimental conditions control (A)			Neutralizer toxicity control (B)			Dilution-neutralization control (C) Product conc.: 10 ml/l		
Vc1	120	Σ =	Vc1	104	Σ =	Vc1	122	Σ =	Vc1	152	Σ =
Vc2	172	146	Vc2	100	120	Vc2	118	120	Vc2	167	160
30 ≤ Σ of N _{v0} ≤ 160? yes ☒ no ☐			Σ of A is ≥ 0.5 x Σ of N _{v0} ? yes ☒ no ☐			Σ of B is ≥ 0.5 x Σ of N _{v0} ? yes ☒ no ☐			Σ of C is ≥ 0.5 x Σ of N _{v0} ? yes ☒ no ☐		

Test suspension and test

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	10 ⁻⁶	33	24	6,17 ≤ lg N ₀ ≤ 6,70 ? yes ☒ no ☐	

Product concentration (%)	Vc1	Vc2	Na = Σ x 10	lg Na	lg R	Contact time (min)
0.01	>330	>330	>3300	>3.52	<2.94	15
0.10	>330	>330	>3300	>3.52	<2.94	15
0.25	>330	>330	>3300	>3.52	<2.94	15
0.50	6	10	<140	<2.15	>4.31	15
1.00	0	0	<140	<2.15	>4.31	15

Explanation:

Vc = counting per ml (one plate or more)

Σ = mean of Vc1 and Vc2 (1. + 2. double determination)

R = reduction (lg R = lg N₀ - lg Na)