

## Test Report

### Aerobic Ready Biodegradability

Manometric Respirometry according to OECD 301 F

Report number : 15/033/0170A Customer : Guard KG  
Date received : 2015-02-09 Address : Geisbergweg 10b  
Test report : 3 pages 65205 Wiesbaden  
Appendices : Test report no. 1802-15 (subcontractor)  
Sampling : customer Study director : Dipl. Biol. R. Kruspe  
Subcontractor : Analysen Service GmbH Umwelt- und Öllabor Leipzig  
Remarks : Abiotic elimination was not considered.

Test item : Remover BLUE  
Characteristics : pH-value = 3,5 (21,7°C)  
theor. BOD-value (theor. biological oxygen demand) = 1,62 g/g

Test conditions : test conduction at 21°C, pH-value had been controlled  
Conc. of test substance  
batch A : 60,5 mg/l - equivalent to 115,6 mg/l oxygen demand  
batch B : 137,8 mg/l - equivalent to 240,8 mg/l oxygen demand  
Addition of an emulsifier : none  
Reference substance : sodium acetate theor. BOD (derived from structure formula) = 0,47 g/g O<sub>2</sub>  
Inoculum - origin : sewage effluent of treatment plant "Ottendorf-Okrilla"  
- concentr. : 10 ml/l conditioning: washed, homogenised

analysed values	Start	End	Change	Oxygen equivalent
Nitrate-N	0,47 mg/l	5,29 mg/l	4,82 mg/l	22,04 mg/l
Nitrite-N	0,003 mg/l	0,016 mg/l	0,01 mg/l	0,04 mg/l
The oxygen demand by nitrification in the blank has to be subtracted:				4,57 mg/l
The remaining oxygen demand by nitrification:				17,51 mg/l

The oxygen demand by nitrification has to be added to the theor. BOD-value to get the 100% level.

### Results

The total elimination of the test substance in the batches amounted to 92 % after 28 days.

The examined test substance was biological degradable in accordance with the requirements of the Detergents Regulation EG/648/2004 (degradation > 60% within 28 d).

The examined test substance was biological degradable in accordance to OECD 301F (degradation > 60% at the end of the 10-day-window.).

#### Validity of the test:

The differences between the batches at the end of the test didn't exceed 20 %.

The degree of degradation of the reference substance amounted to 96 % after 14 days (criterium of validity).

Therefore the test is valid.

The test had been carried out from 28-04-2015 to 26-05-2015

Examiner: Dipl. Biol. G. Pötschke

IDUS GmbH, Ottendorf-Okrilla, 03-06-2015

  
Dipl. Biol. R. Kruspe, principal investigator



All statements made here are related exclusively to the test item.

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The error limits given in the method are in the accepted range.

Test methods signed with a star (\*) are not accredited.

**Test Report - Continuation**

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Results : degree of degradation [%] at a theor. BOD of: 1,62 g/g O<sub>2</sub>

date	d	batch A	batch B	batch C	reference
28.04.2015	0	0%	0%	-	0%
29.04.2015	1	1%	1%	-	33%
30.04.2015	2	13%	12%	-	46%
01.05.2015	3	30%	29%	-	58%
02.05.2015	4	39%	33%	-	70%
03.05.2015	5	46%	35%	-	82%
04.05.2015	6	51%	38%	-	87%
05.05.2015	7	58%	52%	-	87%
06.05.2015	8	62%	57%	-	91%
07.05.2015	9	66%	62%	-	91%
08.05.2015	10	67%	66%	-	91%
09.05.2015	11	74%	71%	-	91%
10.05.2015	12	78%	76%	-	91%
11.05.2015	13	79%	77%	-	96%
12.05.2015	14	81%	79%	-	96%
13.05.2015	15	83%	81%	-	96%
14.05.2015	16	84%	84%	-	96%
15.05.2015	17	86%	84%	-	100%
16.05.2015	18	86%	86%	-	100%
17.05.2015	19	86%	88%	-	100%
18.05.2015	20	87%	88%	-	100%
19.05.2015	21	87%	89%	-	100%
20.05.2015	22	89%	90%	-	99%
21.05.2015	23	89%	90%	-	99%
22.05.2015	24	90%	91%	-	97%
23.05.2015	25	92%	91%	-	97%
24.05.2015	26	92%	91%	-	97%
25.05.2015	27	92%	91%	-	97%
26.05.2015	28	92%	91%	-	97%

**Oxygen demand in test batches [mg/l]**

date	blank	batch A	batch B	batch C	reference
28.04.15	0	0	0	-	0
29.04.15	1	2	4	-	12
30.04.15	1	16	30	-	16
01.05.15	1	36	72	-	20
02.05.15	1	46	80	-	24
03.05.15	1	54	86	-	28
04.05.15	1	60	94	-	30
05.05.15	1	68	126	-	30
06.05.15	1	74	140	-	32
07.05.15	1	78	152	-	32
08.05.15	1	80	160	-	32
09.05.15	1	88	172	-	32
10.05.15	1	92	184	-	32
11.05.15	1	94	188	-	34
12.05.15	1	96	192	-	34
13.05.15	1	98	198	-	34
14.05.15	1	100	204	-	34
15.05.15	1	102	206	-	36
16.05.15	1	102	210	-	36
17.05.15	1	102	214	-	36
18.05.15	1	104	216	-	36
19.05.15	1	104	218	-	36
20.05.15	1	106	220	-	36
21.05.15	1	106	220	-	36
22.05.15	1	108	222	-	36
23.05.15	1	110	224	-	36
24.05.15	1	110	224	-	36
25.05.15	1	110	224	-	36
26.05.15	1	110	224	-	36

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**Diagram**

