

Test Report

Aerobic Ready Biodegradability

Manometric Respirometry according to OECD 301 F

Report number	: 15/033/0168A	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 G Plus

Characteristics : dark orange liquid, pH-value = 13,4 (19,9°C)
 theor. BOD-value (theor. biological oxygen demand) = 2,46 g/g

Test conditions : test conduction at 21°C, pH-value had been controlled

Conc. of test substance

batch A	: 50,1 mg/l	- equivalent to	126,8 mg/l oxygen demand
batch B	: 34,2 mg/l	- equivalent to	87,5 mg/l oxygen demand
batch C	: 41,6 mg/l	- equivalent to	105,9 mg/l oxygen demand

Addition of an emulsifier : none

Reference substance : sodium acetate theor. BOD (derived from structure formula) = 0,47 g/g O₂

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	0,19 mg/l	1,95 mg/l	1,76 mg/l	8,04 mg/l
Nitrite-N	0,014 mg/l	0,005 mg/l	-0,01 mg/l	-0,03 mg/l
The oxygen demand by nitrification in the blank has to be subtracted:				4,57 mg/l
The remaining oxygen demand by nitrification:				3,44 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 76 % 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). The degradation at the end of the 10-day-window amounted to 70 %.

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 97 % after 14 days (criterium of validity).

Therefore the test is valid.

The test had been carried out from 26-03-2015 to 23-04-2015

Examiner: Dipl. Biol. G. Pötschke

IDUS GmbH, Ottendorf-Okrilla, 27-04-2015



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.

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Results : degree of degradation [%] at a theor. BOD of: 2,46 g/g O₂

date	d	batch A	batch B	batch C	reference
26.03.2015	0	0%	0%	0%	0%
27.03.2015	1	10%	10%	10%	56%
28.03.2015	2	21%	23%	25%	62%
29.03.2015	3	26%	31%	34%	77%
30.03.2015	4	32%	40%	42%	82%
31.03.2015	5	41%	55%	53%	91%
01.04.2015	6	47%	59%	59%	97%
02.04.2015	7	55%	64%	62%	97%
03.04.2015	8	61%	67%	69%	100%
04.04.2015	9	63%	69%	70%	99%
05.04.2015	10	65%	71%	72%	99%
06.04.2015	11	68%	71%	74%	97%
07.04.2015	12	68%	73%	74%	97%
08.04.2015	13	69%	74%	76%	94%
09.04.2015	14	68%	75%	77%	97%
10.04.2015	15	69%	78%	77%	97%
11.04.2015	16	69%	78%	77%	97%
12.04.2015	17	71%	78%	77%	97%
13.04.2015	18	71%	78%	79%	97%
14.04.2015	19	70%	79%	80%	100%
15.04.2015	20	71%	78%	79%	97%
16.04.2015	21	71%	78%	81%	97%
17.04.2015	22	71%	80%	81%	97%
18.04.2015	23	71%	79%	81%	96%
19.04.2015	24	71%	79%	81%	96%
20.04.2015	25	71%	79%	81%	96%
21.04.2015	26	70%	78%	82%	99%
22.04.2015	27	70%	81%	84%	99%
23.04.2015	28	69%	80%	83%	97%

Oxygen demand in test batches [mg/l]

date	blank	batch A	batch B	batch C	reference
26.03.15	0	0	0	0	0
27.03.15	2	14	10	12	20
28.03.15	2	28	22	28	22
29.03.15	3	36	30	38	28
30.03.15	3	44	38	48	30
31.03.15	4	56	52	60	34
01.04.15	4	64	56	66	36
02.04.15	4	74	60	70	36
03.04.15	5	82	64	78	38
04.04.15	6	86	66	80	38
05.04.15	6	88	68	82	38
06.04.15	6	92	68	84	38
07.04.15	6	92	70	84	38
08.04.15	7	94	72	88	38
09.04.15	8	94	74	90	40
10.04.15	8	96	76	90	40
11.04.15	8	96	76	90	40
12.04.15	8	98	76	90	40
13.04.15	8	98	76	92	40
14.04.15	9	98	78	94	42
15.04.15	9	100	78	94	42
16.04.15	9	100	78	96	42
17.04.15	9	100	80	96	42
18.04.15	10	100	80	96	42
19.04.15	10	100	80	96	42
20.04.15	10	100	80	96	42
21.04.15	11	100	80	98	44
22.04.15	11	100	82	100	44
23.04.15	12	100	82	100	44

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Diagram

