

Test Report

Aerobic Ready Biodegradability

Manometric Respirometry according to OECD 301 F

Report number	: 15/033/0171A	Customer	: Guard KG
Date received	: 2015-02-09	Address	: Geisbergweg 10b 65205 Wiesbaden
Test report	: 3 pages		
Appendices	: Test report - 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 : Plastic G

Characteristics : pH-value = 11,5 (21,9°C); colourless liquid
 theor. BOD-value (theor. biological oxygen demand) = 1,64 g/g

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

Conc. of test substance

batch A	: 63,0 mg/l	- equivalent to	96,5 mg/l oxygen demand
batch B	: 68,5 mg/l	- equivalent to	105,5 mg/l oxygen demand
batch C	: 43,3 mg/l	- equivalent to	64,1 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	: 0,52 mg/l	0,01 mg/l	-0,51 mg/l	-2,34 mg/l
Nitrite-N	: 0,003 mg/l	0,016 mg/l	0,01 mg/l	0,05 mg/l
The oxygen demand by nitrification in the blank has to be subtracted:				4,57 mg/l
The remaining oxygen demand by nitrification:				-6,86 mg/l

The oxygen demand by nitrification has to be added to the theor. BOD-value to get the 100% level.
 Anaerobic microcosms might be the result of the negativ remaining oxygen demand.
 Bacteria used nitrate to produce nitrogen.

Results

The total elimination of the test substance in the batches amounted to 98 % 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
 IDUS GmbH, Ottendorf-Okrilla, 04-06-2015

Examiner: Dipl. Biol. G. Pötschke



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: 1,64 g/g O₂

date	d	batch A	batch B	batch C	reference
28.04.2015	0	0%	0%	0%	0%
29.04.2015	1	1%	3%	2%	33%
30.04.2015	2	3%	7%	5%	46%
01.05.2015	3	5%	12%	11%	58%
02.05.2015	4	7%	16%	14%	70%
03.05.2015	5	9%	18%	17%	82%
04.05.2015	6	15%	19%	16%	87%
05.05.2015	7	25%	27%	23%	87%
06.05.2015	8	44%	40%	41%	91%
07.05.2015	9	54%	46%	44%	91%
08.05.2015	10	58%	51%	36%	91%
09.05.2015	11	64%	61%	59%	91%
10.05.2015	12	68%	64%	69%	91%
11.05.2015	13	70%	66%	71%	96%
12.05.2015	14	74%	72%	80%	96%
13.05.2015	15	76%	75%	80%	96%
14.05.2015	16	82%	81%	80%	96%
15.05.2015	17	84%	84%	83%	100%
16.05.2015	18	84%	88%	83%	100%
17.05.2015	19	84%	90%	86%	100%
18.05.2015	20	86%	92%	89%	100%
19.05.2015	21	88%	94%	92%	100%
20.05.2015	22	92%	93%	94%	99%
21.05.2015	23	92%	93%	94%	99%
22.05.2015	24	93%	95%	97%	97%
23.05.2015	25	93%	97%	97%	97%
24.05.2015	26	95%	97%	100%	97%
25.05.2015	27	95%	99%	100%	97%
26.05.2015	28	97%	99%	100%	97%

Oxygen demand in test batches [mg/l]

date	blank	batch A	batch B	batch C	reference
28.04.15	0	0	0	0	0
29.04.15	1	2	4	2	12
30.04.15	1	4	8	4	16
01.05.15	1	6	14	8	20
02.05.15	1	8	18	10	24
03.05.15	1	10	20	12	28
04.05.15	1	16	22	12	30
05.05.15	1	26	30	16	30
06.05.15	1	44	44	28	32
07.05.15	1	54	50	30	32
08.05.15	1	58	56	38	32
09.05.15	1	64	66	40	32
10.05.15	1	68	70	46	32
11.05.15	1	70	72	48	34
12.05.15	1	74	78	54	34
13.05.15	1	76	82	54	34
14.05.15	1	82	88	54	34
15.05.15	1	84	92	56	36
16.05.15	1	84	96	56	36
17.05.15	1	84	98	58	36
18.05.15	1	86	100	60	36
19.05.15	1	88	102	62	36
20.05.15	1	92	102	64	36
21.05.15	1	92	102	64	36
22.05.15	1	94	104	66	36
23.05.15	1	94	106	66	36
24.05.15	1	96	106	68	36
25.05.15	1	96	108	68	36
26.05.15	1	98	108	68	36

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Diagram

