

Eurofins Umwelt Ost GmbH - Lößstedter Strasse 78 - D-07749 - Jena

**Eurofins Turkey Gıda Analizleri Ltd. Sti**  
**Karanfil cad. Bambu sok. No:5 Levent**  
**34330 Besiktas Istanbul**  
**TURKEY**

Title : **Test report for order 61714038**  
Test report number : **AR-17-JE-014673-01**

Project name : **water analysis**

Number of samples : **2**  
Sample type : **waste water and liquid**  
Sample Taker: **supplied by customer**  
Sample reception date : **2017-07-04**  
Sample processing time : **2017-07-04 - 2017-07-11**

The test results refer solely to the analysed test specimen. Unless the sampling was done by our laboratory or in our sub-order the responsibility for the correctness of the sampling is disclaimed. This test report is only valid with signature and may only be further published completely and unchanged. Extracts or changes require the authorisation of the EUROFINS UMWELT in each individual case.

Our General Terms & Conditions of Sale (GTCS) are applicable, as far as no specific agreements do exist. The GTCS are available on <http://www.eurofins.de/umwelt/avb.aspx>.

Accredited test laboratory according to DIN EN ISO/IEC 17025 notification under the DAkkS German Accreditation System for Testing. The laboratory is according (D-PL-14081-01-00) accredited.

#### Attachments

*report order 61714038*

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Digitally signed 16.08.2017  
Dr. Thomas Günther  
Prüfleitung



|                    |   |   |
|--------------------|---|---|
| <b>Description</b> | <b>Product Name:</b><br>industrial degreasers/<br><b>Batch Nuber:</b><br>green line series<br><b>6000/Receiving Date in</b><br><b>Bactochem:</b><br>28.06.2017/<br><b>Name of Sampler:</b><br>Hen Shenar//<br><b>Rotal Industries And Trade/</b><br>201703574 | <b>Product Name:</b><br>industrial degreasers/<br><b>Batch Nuber:</b><br>green line series<br><b>6000/Receiving Date in</b><br><b>Bactochem:</b><br>28.06.2017/<br><b>Name of Sampler:</b><br>Hen Shenar//<br><b>Rotal Industries And Trade/</b><br>201703574 |
|                    | <b>Sample type</b>  | waste water      liquid   |
|                    | <b>Sample number</b>  | 117060102      617056876  |
|                    |   |   |

| Parameter | Lab | Accr. | Method | LOQ | Unit |  |  |
|-----------|-----|-------|--------|-----|------|--|--|
|-----------|-----|-------|--------|-----|------|--|--|

**Physico-chemical parameters**

|                      |    |      |                               |     |       |      |   |
|----------------------|----|------|-------------------------------|-----|-------|------|---|
| pH                   | FR | JE02 | DIN 38404-C5/DIN EN ISO 10523 |     |       | 9,6  | - |
| Temperature of pH    | FR | JE02 | DIN 38404-C4                  |     | °C    | 17,8 | - |
| Conductivity at 25°C | FR | JE02 | DIN EN 27888                  | 5,0 | µS/cm | 8090 | - |

**Organic sum parameters**

|                                |    |      |             |     |      |      |   |
|--------------------------------|----|------|-------------|-----|------|------|---|
| TOC (total organic carbon)     | FR | JE02 | DIN EN 1484 | 1,0 | mg/l | 6200 | - |
| DOC (Dissolved Organic Carbon) | FR | JE02 | DIN EN 1484 | 1,0 | mg/l | 5890 | - |

**Other parameters**

|                  |    |      |                |  |  |   |                |
|------------------|----|------|----------------|--|--|---|----------------|
| Biodegradability | JE | JE02 | see attachment |  |  | - | see attachment |
|------------------|----|------|----------------|--|--|---|----------------|

## Explanations

LOQ: Limit of quantification

Lab: Abbreviation of the performing laboratory

Accr.: Abbreviation of the accreditation of the performing laboratory

The parameters identified by FR have been performed by the laboratory Eurofins Umwelt Ost GmbH (Bobritzsch-Hilbersdorf). The accreditation code JE02 identifies the parameters accredited according to DIN EN ISO/IEC 17025:2005 D-PL-14081-01-00 .

The parameters identified by JE have been performed by the laboratory Eurofins Umwelt Ost GmbH (Jena). The accreditation code JE02 identifies the parameters accredited according to DIN EN ISO/IEC 17025:2005 D-PL-14081-01-00 .

|                            |  |
|----------------------------|--|
| <b>Sample designation:</b> | <b>Product Name: industrial degreasers/Batch Nuber: green line series 6000/Receiving Date in Bactochem:28.06.2017/Name of Sampler:Hen Shenar//Rotal Industries And Trade/201703574</b> |
| <b>Lab-ID#:</b>            | <b>617056876</b>   |

**Test method:** Biodegradability (DOC-Die-Away OECD 301A)

**Principle of the test:** Flasks with a buffered mineral salt medium containing the test material as the sole source of carbon and energy were inoculated with a mixed bacterial population derived from effluents of a domestic wastewater treatment plant. Blank flasks (inoculated medium without test material) and several controls and references flasks (positive control) run in parallel. Aerobic biodegradation is followed by measurements of dissolved organic carbon (DOC) over a period of 28 days. Percentage biodegradation is calculated from the DOC removal of the flasks with the test material between day zero und day 28 corrected by the blank flasks.

**Test material:**

Sample appearance: Clear liquid, pungent odour  
 Sample preparation: none  
 Sample dosing: 7 ml/L (equivalent to a DOC of 39 mg C/L)

**Toxicity of sample**

**to bacteria:** not tested

**Reference substance:**

|                |                    |                  |            |
|----------------|--------------------|------------------|------------|
|                | Sodium benzoate    | DOC (reference): | 583 mg C/g |
| Concentration: | per flask: 70 mg/L | DOC (per flask): | 40 mg C/L  |

**Inoculum:**

Source: Activated sludge of the municipal wastewater treatment plant Jena-Zwätzen (date: 2017-07-17). The  
 Treatment: The sludge was washed twice with water, resuspended in water and aerated until use.  
 Concentration of inoculum: 30 mg TSS/L  
 Pre-exposure of inoculum? No

**Test sep up:**

The duration of the Zahn-Wellens test is 28 days. The vessels contained 1000 ml of the inoculated buffered mineral salt medium and the test material (test substance or reference substance) as the sole The following set of flasks was used:

| Flask #: | Test type         | Comments  |
|----------|-------------------|---|
| 1 and 2  | Test substance    | Test substance and inoculum                             |
| 3 and 4  | Blank             | Inoculum blank  |
| 5        | Reference control | Reference substance and inoculum                        |
| 6        | Abiotic control   | Test substance and sterilizing agent (without inoculum) |

DOC-determination: Multi-N/C-Analyzer, Analytik Jena (LOQ: 1,0 mg/L)

# Attachment to report AR-17-JE-014673-01 : report order 61714038

|                            |  |
|----------------------------|--|
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| <b>Lab-ID#:</b>            | <b>617056876</b>   |

**Test method:** Biodegradability (DOC-Die-Away OECD 301A)

**Results:** Degradation test of the sample was completed in 22 days under the conditions of the DOC Die-Away test. The plateau phase was attained between day 14 and 18. The maximum biodegradation was 100 % at day 14. The ten-day window started at day 2 with a biodegradation of 52 %. Due to the given time frame of sampling the end of the ten-day window could not be exactly determined (between day 10 and 15). Non-biological (abiotic) elimination of the test substance was 26 %.

**Interpretation of results:** The sample is proved to be easily biodegradable in the DOC Die-Away test according OECD 301 A.

**Validity of results:** *The procedural control reached a removal of the reference substance of 99 % within 7 days (required threshold pass value: Percentage degradation of the reference compound has reached the pass levels by day 14.) The test is valid.*

|                     |   |
|---------------------|---|
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| Lab-ID#:            | 617056876   |

Test method: Biodegradability (DOC-Die-Away OECD 301A)

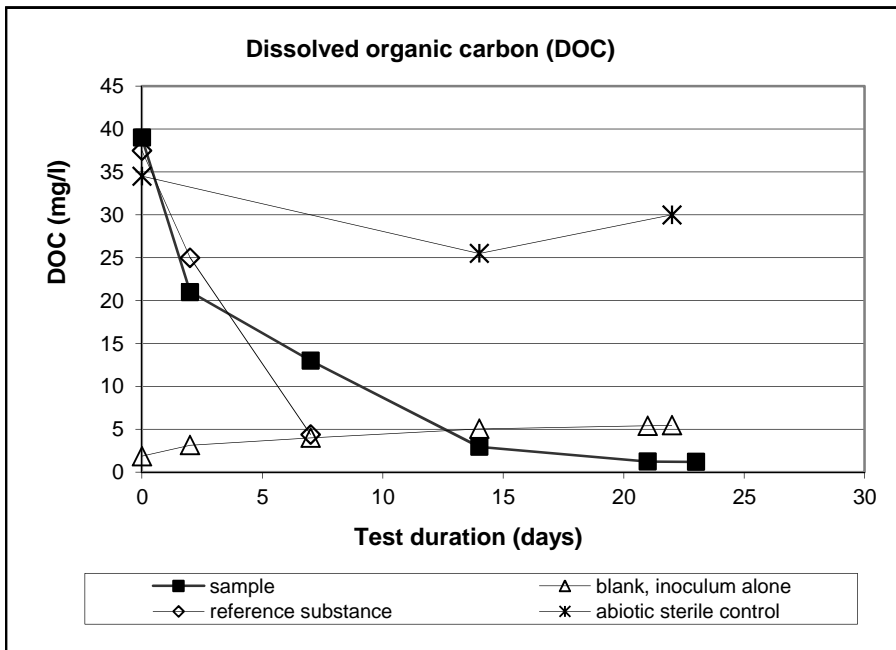


Fig. 1. Degradation of the sample, reference, abiotic control and the blank (means of duplicate determinations).

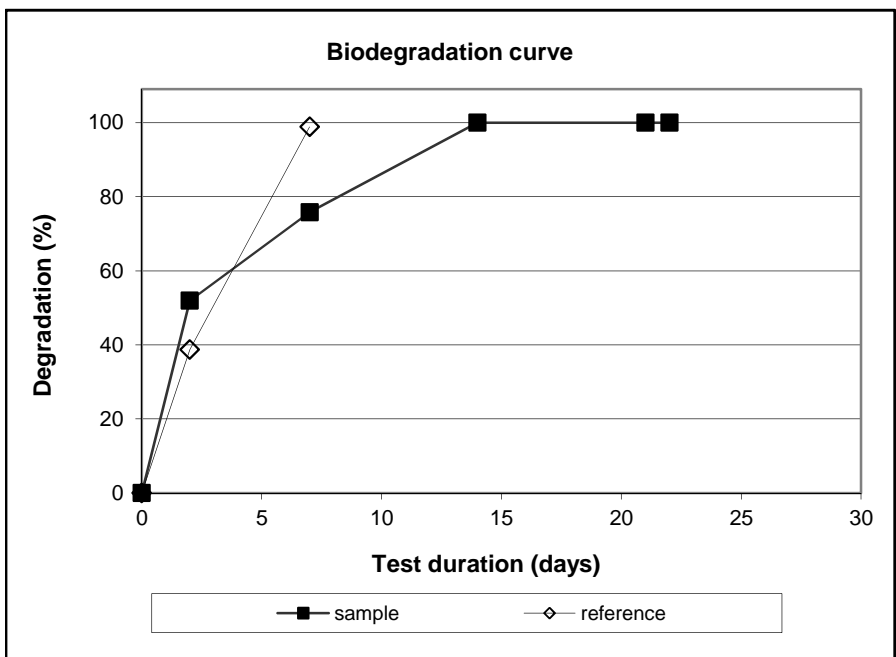


Fig. 2. Biodegradation curve of sample and reference substance.

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|                            |  |
|----------------------------|--|
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| <b>Lab-ID#:</b>            | <b>617056876</b>   |

**Test method:** Biodegradability (DOC-DIE-AWAY OECD 301 A)

Tab. 1. DOC- concentration (mg C/L) in the test substance flasks and in the blank-, reference and abiotic control flasks (measured values and means).

| Date       | day | Test substance |       |       |      | Reference substance |       |      | Abiotic sterile control |       |      | Blank, inoculum alone |       |       |      |
|------------|-----|----------------|-------|-------|------|---------------------|-------|------|-------------------------|-------|------|-----------------------|-------|-------|------|
|            |     | No. 1          | No. 2 | No. 3 | mean | No. 1               | No. 2 | mean | No. 1                   | No. 2 | mean | No. 1                 | No. 2 | No. 3 | mean |
| 2017-07-19 | 0 * | 34             | 34    | -     | 34   | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-07-19 | 0 # | 39             | 39    | -     | 39   | 37                  | 38    | 38   | 34                      | 35    | 35   | 1,8                   | 1,9   | -     | 1,9  |
| 2017-07-20 | 1   | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-07-21 | 2   | 22             | 20    | -     | 21   | 25                  | 25    | 25   | -                       | -     | -    | 3,1                   | 3,2   | -     | 3,2  |
| 2017-07-22 | 3   | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-07-23 | 4   | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-07-24 | 5   | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-07-25 | 6   | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-07-26 | 7   | 13             | 13    | -     | 13   | 4,4                 | 4,4   | 4,4  | -                       | -     | -    | 4,0                   | 4,0   | -     | 4,0  |
| 2017-07-27 | 8   | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-07-28 | 9   | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-07-29 | 10  | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-07-30 | 11  | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-07-31 | 12  | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-08-01 | 13  | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-08-02 | 14  | 3,1            | 2,8   | -     | 3,0  | -                   | -     | -    | 26                      | 25    | 26   | 5,1                   | 5,0   | -     | 5,1  |
| 2017-08-03 | 15  | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-08-04 | 16  | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-08-05 | 17  | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-08-06 | 18  | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-08-07 | 19  | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-08-08 | 20  | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-08-09 | 21  | 1,3            | 1,2   | -     | 1,3  | -                   | -     | -    | -                       | -     | -    | 5,3                   | 5,5   | -     | 5,4  |
| 2017-08-10 | 22  | 1,2            | 1,2   | -     | 1,2  | -                   | -     | -    | 30                      | 30    | 30   | 5,4                   | 5,5   | -     | 5,5  |
| 2017-08-11 | 23  | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-08-12 | 24  | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-08-13 | 25  | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-08-14 | 26  | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-08-15 | 27  | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |
| 2017-08-16 | 28  | -              | -     | -     | -    | -                   | -     | -    | -                       | -     | -    | -                     | -     | -     | -    |

\* Test substance flasks before addition of inoculum

# Sampling 3 hours after start of incubation

Tab. 2. Calculated degradation of the test sample, of the reference sample and of abiotic sterile control. The percentage degradation is expressed as % DOC removal. The degradation rates are rounded to the nearest full percent.

| Date       | day | Test substance |       |       |            | Reference substance |       |           | Abiotic sterile control |
|------------|-----|----------------|-------|-------|------------|---------------------|-------|-----------|-------------------------|
|            |     | Nr. 1          | Nr. 2 | Nr. 3 | mean       | Nr. 1               | Nr. 2 | mean      |                         |
| 2017-07-19 | 0 # | 0              | 0     | -     | <b>0</b>   | 0                   | 0     | <b>0</b>  | <b>0</b>                |
| 2017-07-21 | 2   | 49             | 55    | -     | <b>52</b>  | 38                  | 40    | <b>39</b> | -                       |
| 2017-07-26 | 7   | 76             | 76    | -     | <b>76</b>  | 99                  | 99    | <b>99</b> | -                       |
| 2017-08-02 | 14  | 100            | 100   | -     | <b>100</b> | -                   | -     | -         | <b>26</b>               |
| 2017-08-09 | 21  | 100            | 100   | -     | <b>100</b> | -                   | -     | -         | -                       |
| 2017-08-10 | 22  | 100            | 100   | -     | <b>100</b> | -                   | -     | -         | <b>13</b>               |

# Sampling 3 hours after start of incubation