STATEMENT

Marine biodegradability and ecotoxicity of Cerdia DE-Tow

On December 20th 2016 OWS nv started a marine aerobic biodegradation test according to ASTM D6691 *Standard Test Method for Determining Aerobic Biodegradation of Plastic Materials in the Marine Environment by a Defined Microbial Consortium or Natural Sea Water Inoculum* (2009) on Cerdia DE-Tow produced by Cerdia Produktions GmbH, Engesserstr. 8, 79108 Freiburg, GERMANY. On November 13th 2017 an aquatic invertebrate acute toxicity test with *Daphnia magna* was started on the degradation residuals of Cerdia DE-Tow, obtained after incubation in a biological active aquatic environment for 124 days at 30°C ± 2°C in a concentration of 0.1%. The toxicity test was executed in line with OPPTS 850.1010 *Aquatic Invertebrae Acute Toxicity Test, Freshwater Daphnids* (1996) and OECD 202 *Daphnia sp., Acute Immobiliation Test* (2004) taking into account the modifications on concentration and incubation as mentioned in the OK biodegradable MARINE certification scheme of TÜV AUSTRIA Belgium.

The biodegradation of Cerdia DE-Tow started almost immediately and proceeded at a moderate rate. After 154 days an average biodegradation of 78.3% ± 12.5% was measured, or 91.2% on a relative basis compared to suitable reference substrate cellulose. At the end of the test (181 days) a plateau was reached at a level of 82.2% ± 8.2%, or 95.3% relative biodegradation. According to the OK Biodegradable MARINE certification scheme of TÜV AUSTRIA Belgium, the percentage of biodegradation of a test material shall be at least 90% in total or 90% of the maximum degradation of a suitable reference substrate after a plateau has been reached for both test material and reference substance. The maximum allowed test duration is 6 months. From the results it can be concluded that Cerdia DE-Tow fulfilled the 90% biodegradability requirement.

In the toxicity test on Cerdia DE-Tow mobility was observed for 95% of the Daphnia neonates after 48 hours. The OK biodegradable MARINE certification scheme of TÜV AUSTRIA Belgium prescribes that at least 90% of the tested organisms should remain mobile. From the result it can be concluded that Cerdia DE-Tow does not exert a negative effect on the mobility of *Daphnia magna*. The environmental safety requirement of the OK biodegradable MARINE certification scheme of TÜV AUSTRIA Belgium was fulfilled.

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