



LABTECH[®] s.r.o. ☐ Polní 23/340, 639 00 Brno

Mr Jaroslav Nechutný
Klenovice 13
330 35 Všeruby

Subject: Assessment of Product BIO Bee Magic Powder (BBMP)

Based on your order we assessed the BBMP product used to clean up petroleum products in waters. According to the manufacturer's data, it is a bee-wax-based biological product. In contact with an oil slick, the latter gets adsorbed on the product's hydrophobic surface. Then, the resulting suspension can be separated easily or left for microbiological decomposition.

The purpose of the assessment was to find out whether the environment (surface water at most) where the product is applied is not subject to secondary contamination. Protocol No. B2758/2015 providing the test results forms an integral part of the analysis.

The base test consisted in identification of the supplied sample. The infrared spectroscopy method (FTIR) was used to find the identity of the genuine bee wax and BBPM product spectra (see Exhibit No. 2). No other organic substances were found in the spectrum.

The test for release of BBMP product organic substances into water proved very low solubility of the sample in the aqueous environment. For this purpose, a sample and water suspension was prepared (in a proportion of 5 g of sample per litre of water) and agitated for 24 hours so as to saturate the water with the organic substances of the sample. The settled aqueous phase was then analysed for the potential presence of dissolved hydrocarbons, again using the FTIR method - test for the content of non-polar extractable substances. The result proved that virtually no hydrocarbons get released from the BBMP product into water and thus into the aqueous environment. This was confirmed by analysing the suspense using the combustion method for TOC establishment; the results proved a minimum content of organically fixed carbon (TOC parameter), which is insignificant in terms of impact on a surface water course. One has also to take into account the biodegradability of these substances.

Conclusion:

The tests proved the identity of the product containing bee wax and that the application of the BBMP product does not affect the aqueous environment into which it was applied.

In Klatovy, on 15 March 2015

RNDr. Svatopluk Krýsl, CSc.
LABTECH s.r.o.
Hygienic Laboratory Klatovy
Tel. No.: +420 725449422

Exhibits: Test Protocol B2758/2015

FTIR Record of Product and Bee Wax Spectra

