



Industrie Service

**Attestation for laboratory degradation of 2 different hydrocarbons by the innovative AFA- and SOA-method, based on the following patent numbers:**

- **AFA: US 62 / 731,911**
- **SOA: WO 2013 / 093903 and WO 2015 / 170317**

The TÜV SÜD Industrie Service GmbH testifies hereby the proper execution of hydrocarbon-degradation tests by the innovative AFA- and SOA-method in the accredited laboratory of „görtler analytical services gmbh“ in Vaterstetten, Germany (see laboratory report from 29<sup>th</sup> March 2019, 33 pages).

The degradation tests, which have been executed under ideal conditions in laboratory scale, were made with the following hydrocarbons, at which in each case different soil types (pure sand, homogenized sand-clay mixture (1:1), agricultural soil/rich in humus) have been tested.

- Diesel fuel
- Dichloromethane

The test attendant quantitative laboratory analytics on following measurement parameters (material respectively material classes):

- HC-Index (C10 - C40)
- Dichloromethane
- CO<sub>2</sub> and O<sub>2</sub> (measurements by TÜV SÜD)

In summary it is hereby testified from an expertise-technical prospective, that the novel and forward-looking AFA- and SOA-method is basically suitable for the fast and partly very effective decomposition of hydrocarbons (polar and nonpolar hydrocarbons) on various soil types without an explicit increased content of clay minerals.

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