

Deliverable B1-3

Technical report of characterization of various industrial minerals qualities (group B)

December 2018

This Deliverable constitutes product of the implementation Action B1 Collection of oil wastes and preparation of stabilizers.

The industrial minerals of group B are examined in this report. Industrial minerals are naturally occurring materials thus their chemistry, mineralogy and physical characteristic are varying among different mineral deposits, influencing their effectiveness. Hence, it is vital to characterize the chosen raw materials in order to evaluate their adequacy as absorbents and stabilizers.

The industrial minerals of group B that are used as stabilizers of oil sludges are either raw or processed. They are modified using different chemical techniques and thermal treatment and the appropriate processes are applied so as to develop nine different minerals grades that will be used as more effective stabilizers.

Wide range of characterization techniques is applied to determine the physicochemical properties of stabilizers, including chemical, mineralogical, particle size and differential thermal analysis, moisture and LOI content, surface topography and morphology examination, swelling index in water and in organic solvents, oil and water absorption, specific surface area, porosity, absorption, and desorption capacity, etc.

The analyses performed on the different types of industrial minerals are described thoroughly in the Deliverable. The results are discussed, and the industrial minerals are compared in order to find the most appropriate types in order to be used as potential stabilizers.