

Assessing the biodegradation of chemicals using QSARs, read-across and expert judgement

Clients: Confidential

The Offshore Chemicals Notification Scheme (OCNS) requires that all chemicals used in the North Sea are assessed for their likely environmental impact if released to the marine environment. For any oil field chemical used in the Norwegian sector of the North Sea, the Norwegian SKIM recommendations must be followed if the chemical only achieves a BOD₂₈ of 20% to 60% in biodegradation tests. Such chemicals require an assessment to be made of their potential biodegradation by-products, so a tiered expert judgment approach has been developed to achieve this objective. Likely biodegradation by-products are identified based on the chemical structure of the substance and this assessment is supported by available literature on biodegradation of the substance or substances of similar structure. The biodegradation of the primary biodegradation products is also assessed using literature data, read-across and QSARs to determine whether any persistent chemicals are likely to be formed.