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Life Cycle Assessment of Oil Sorbent

Masaki Saito, Suguru Ogura, Hiroyuki Kimoto and Katashi Nagamizu

Summary: This paper describes the life cycle assessment of sorbent (oil absorbent) in estimation of CO_2 emissions produced throughout the life cycle for each scenario of sorbent ; Sugi Bark Product and Anaerobic/Aerobic Biodegradation Disposal (Scenario A/B), Sugi Bark Product and Incineration Disposal (Scenario C) and Polypropylene Product and Incineration Disposal (Scenario D). CO_2 emission is the highest in disposal stage in all scenarios. In comparison of LCA of SBS (Sugi Bark Sorbent; scenario A, B, C), CO_2 emission is lower in biodegradation disposal than in incineration disposal. Biodegradation disposal has more advantage in CO_2 emission than incineration disposal, when the oil content of recovered substance is lower. The ratio of total CO_2 emission of SBS and Polypropylene is 1:3 at most; the replacement of Polypropylene sorbent with SBS can reduce 8.3t-CO_2 emission in recovering 1t of Bunker C oil.

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To cite this article:

Masaki Saito, Suguru Ogura, Hiroyuki Kimoto and Katashi Nagamizu: Life Cycle Assessment of Oil Sorbent , Journal of the Japan Society of Naval Architects and Ocean Engineers, (2006), Vol. 4, pp.1-8 .

Japan Science and Technology Information Aggregator, Electronic