COTTON NONWOVENS FOR OIL INDUSTRY

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Abstract

Engineers and scientists are developing the technology to prevent and cleanup oil spills. When oil spill happens not only cleaning up the spill is significant but also recovery of the oil is of prime importance. Numerous studies had shown sorbents to be one of the most economical and efficient means for oil spill cleanup from both land and sea. In a scenario of copiously available synthetic sorbents the merits of using environmental friendly natural sorbents had been suppressed in last four decades. The synthetic booms used very heavily as a remedial measure for oil spill cleanup soaks up only a third of what cotton absorbs and are not biodegradable. The chemistry of cotton makes it the ideal material for oil absorption with its waxiness, maturity ratio, wet strength, absorption capacity and ability to biodegrade. Cotton fiber contains 0.5 per cent wax, which enables it to soak up 40 times its weight. In contrast to the synthetic sorbents, self degradation of cotton and oil absorbed by cotton in the environment makes cotton most susceptible and environmental friendly remedial measure for oil spill cleanup. Additionally, cotton nonwovens sorbents can be wrung to recover the oil and then again used to absorb additional oil for several cycles. Less matured cotton which is not suitable for yarn spinning and fabric processing industry has less price value. Such type of cotton is perfect match for producing oil absorbing cotton nonwovens hence obtaining value added products from waste cotton.

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