

ChemFree – safe, efficient and environmentally friendly oil spill technology

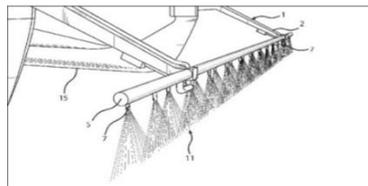
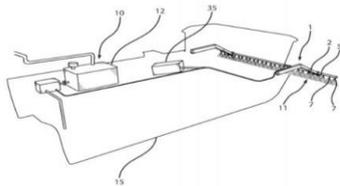
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From 2003 to 2008 there occurred **2442** oil spills around the world. The largest marine oil spill in history was BP's Macondo accident in the Gulf of Mexico in 2010, which had a cleanup cost of **USD 40 billions**. An oil spill has adverse environmental consequences, both in the short and long term. Oil spill response (OSR) technology has not kept up with the rapid growth in the oil and shipping industries, with few innovations since the 1970's. This has caused an urgent need for effective OSR technology that can ensure the safety of shipping and oil production.

ChemFree is a new chemical free concept for dispersing marine oil spills, called **mechanical dispersion**. The patented technology is based upon nature's own way of degrading oil. Naturally occurring bacteria in the sea have no problem decomposing oil particles, but they are dependent on the dispersion of oil spills into tiny particles in order to perform this degradation. The same way you are able to cut metals by using water jets, it is possible to crush the oil into tiny particles using water. This is exactly what the ChemFree system performs by applying seawater with such a high pressure on the oil slick that it is dissolved to a proper format for natural biodegradation.



Today, marine oil spills are treated by pouring chemicals that dissolve the oil into the environment. This application of chemicals affects the environment, as well as having a limited window of opportunity ranging from a few hours to a couple of days before the oil is too weathered to treat. ChemFree is not limited by weathering of the oil, and this infinite window of opportunity allows our solution to treat more oil before it hits shore, which is extraordinary as the environmental damage and the cost of a cleanup operation is increased by **hundredfolds** if it does.

Inventor Stein Erik Sørstrøm, researcher at SINTEF who has over 30 years of experience from the OSR industry, leads the development of ChemFree. He is joined by three students from NTNU School of Entrepreneurship in commercializing the technology. The team has also established an experienced board of advisors with substantial knowledge from research, technology and business.

The development of ChemFree is based on four different R&D projects conducted by SINTEF, which has led to a proof of principle of the technology and a small-scale prototype. The current results show that ChemFree is able to effectively disperse all types of fresh and weathered oils. The way forward is to scale the concept into an operational prototype, for which the team already has secured funding. The ChemFree technology have gotten customer funding through the Norwegian Clean Seas Association for Operating Companies (NOFO) programme *Oljevern 2015*, with a financial frame of **370.000 USD**.