

US Coast Guard Request for Comments

Degussa Corporation welcomes the opportunity to respond to the US Coast Guard's request for comments.

Degussa has conducted extensive research, development and ship-scale testing and evaluation in the field of ballast water treatment using Peraclean® Ocean. Peraclean Ocean is a peroxygen based liquid product designed to kill organisms that may be transported in ballast water. Peraclean Ocean exhibits good efficacy in controlling organisms found in the ballast water of their respective harbors, but also exhibits the benefit of low residual toxicity. Peraclean Ocean degrades into environmentally benign products (acetic acid, oxygen and water).

We believe that regulatory agencies need to set an interim treatment standard for ballast water. However, we recognize that there are no absolutes when managing the risk of introducing aquatic nuisance species (ANS). Clearly, the absolutes of stopping commerce or a mandate of completely sterile ballast tanks are unreasonable and economically unattainable.

Open ocean ballast water exchange (BWE) provides some reduction of risk, but it is not 100% effective. Under poor weather conditions BWE may not be possible since crew safety must take priority. The effectiveness of BWE is zero if it is not practiced. Therefore the net effectiveness of BWE equals its base effectiveness multiplied by its probability of being carried out. Although we do not know the net effectiveness of BWE, we believe chemical biocides - and specifically peracetic acid and peroxygen based chemistries which exhibit a very short half life - can be dosed at sufficient concentrations so that they are technically at least as effective as BWE.

Peraclean Ocean can be used as a stand-alone treatment or after separation of solids. Following separation of solids and an application of Peraclean Ocean (200 ppm/24 hour exposure time) was 100% effective (killed or separated) against the following identified species: Foraminifera*, Cladocera*, Larval Polychaetes*, Nemathodes*, Ciliates*, Rotifiers*, Copepode nauplii*, Daphnia*, Cyclops*, Artemia eggs** and Artemia nauplii**. At a dosage rate of 100 ppm all the identified species in the tested water (Ciliates*, Rotifiers*, Copepode nauplii*, Cyclops*, Artemia eggs**, Artemia nauplii**) were killed or separated. [* = incoming brackish water with natural plankton density] [** = system was spiked with Artemia nauplii (200 - 250 / liter) and Artemia eggs (500 / liter)].

We believe Peraclean Ocean used alone or in combination with an effective separation of solids can be dosed at sufficiently low concentrations to achieve an effective, environmentally friendly, practical and economically feasible treatment.

Degussa Corporation believes a treatment standard should achieve at least 95% removal, kill or inactivation of selected species from each of the representative taxonomic groups: vertebrates, invertebrates (hard-shelled, soft shelled, soft-bodied), phytoplankton, and macro-algae.

Degussa is an entirely newly formed, globally active corporation consistently aligned to high-yield specialty chemistry. Its activities are led by the vision that everybody benefits from a Degussa product - every day and everywhere. With a workforce of some 63,000 employees, the corporation generated sales of €16.9 billion and earnings before interest, tax and amortization (EBITA) of €1.2

billion in fiscal 2000. Degussa's strength lies in high-impact system solutions tailored to the requirements of customers in over 100 countries of the world.