

## Conference Abstract

# Bone Degreasing - Finding a New Solution to an Old Problem

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Received: 03 May 2018 | Published: 13 Jun 2018

Citation: Stemmer D, Kehagias O (2018) Bone Degreasing – Finding a New Solution to an Old Problem. Biodiversity Information Science and Standards 2: e26392. <https://doi.org/10.3897/biss.2.26392>

## Abstract

The South Australian Museum boasts the largest and most comprehensive cetacean collection in Australia, including various large cetacean skeletons. The preparation of these skeletons was done at various locations throughout the history of the Museum until the state government funded a purpose-built preparation facility which opened in 1983.

The well-equipped centre was fitted with a large (2800 L) custom-built liquid-vapour degreaser that used trichloroethylene (TCE) as solvent. Many beautifully degreased skeletons, including a 22 m pygmy blue whale, were prepared during its 15-year operation. An accidental spill of TCE in 1999 led to the decommissioning of the unit.

The decision to abandon the use of the toxic and dangerous TCE has led to a series of experiments to find a benign replacement process that will work either with the existing degreaser or heated maceration vats. Numerous chemicals and treatment methods have been trialled with limited success. However, one particular group of chemicals, glycol ether surfactant compounds, has shown promise and has been the main focus for our ongoing studies.

Glycol ethers are broad-spectrum active solvents characterised by high dilution ratios, low evaporation rates and wide solubility range. Their unique solubility characteristics also allow them to be used as a coupling solvent in more complex situations containing both hydrophilic and hydrophobic components, and because of their compatibility with non-ionic

surfactants, blended formulations with glycol ether solvents may provide a new solution to an old problem.

## **Keywords**

Bone degreasing, skeleton preparation

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