



Dental Mercury Capture Device (20150218, Dr. Sandra Myers)

Technology No. 20150218

Dental Mercury Recovery During Cremation

An intra-cremator device captures dental mercury (DHgS) from dental amalgam fillings during cremation. The device uses nanometer-scale particles and ceramic substrates in a strategically placed filter system that incorporates nanoparticle sorbent agglomerates that capture vapor phase mercury contaminants at high temperatures. The porous filter allows body combustion to proceed and provides pathways for exiting combustion products, including mercury vapor, to contact and flow in association with the nanoparticle system. The filter is part of a recoverable mercury sorbent packet containing selenium nanoparticles and a nanoparticle refractory material. The recoverable sorbent packets are placed within the casket or primary combustion chamber during cremation. Mercury laden packets may be removed from the ashen remains after cremation, and the mercury may be recovered and provided to a recycling facility for reclamation, and the sorbent packet may then reprocessed for reuse.

Note: This technology has been exclusively licensed to MerTron Inc, a University of Minnesota start-up company.

More Feasible than Smokestack Scrubbers and Resomators

Dental amalgam is the main source of mercury emitted by cremation of human remains, and current methods for addressing these emissions are not feasible for the majority of small crematoria. Smokestack scrubbers and resomators are expensive, and extracting teeth prior to cremation is difficult as rigor mortis and/or embalming restrict access to the back teeth where most fillings are located. This easy-to-use device is cost effective, environmentally friendly and requires no special training.

BENEFITS AND FEATURES:

- More cost effective for small crematoria than smokestack filters
- Easy to use; no special training required
- Environmentally friendly
- Can be sold as an add-on, "green" option

APPLICATIONS:

- Cremation
- Preventing mercury vapors from crematoria

Phase of Development - Prototype developed and testing underway.

Researchers

Sandra Myers, DMD

Associate Professor, Department of Diagnostic and Biological Sciences

[External Link](http://www.dentistry.umn.edu) (www.dentistry.umn.edu)

<https://license.umn.edu/product/dental-mercury-capture-device>