

New Publication on Disaster Funding

The Heritage Emergency National Task Force has published "Before and After Disasters: Federal Funding for Cultural Institutions." This booklet identifies available federal funding for making emergency plans, buying disaster supplies, and training staff for next year's hurricane season. The booklet also gives online resources for finding professional conservation expertise. Up to 50 copies can be ordered at no charge from the Federal Emergency Management Agency (FEMA). Call (800) 480-2520 and ask for FEMA publication #533 or download the 32-page booklet at www.heritagepreservation.org. More disaster resources can be found on the Task Force's website at www.heritageemergency.org.

Can You Help?

The Gulf Coast region suffered extensive loss of cultural property and associated records in the wake of Hurricane Katrina. Prior to the disaster, many conservators worked with cultural property from Gulf Coast institutions. Interactions could have been in the form of general or specific collection surveys, treatments, photographs, videotapes, and condition or examination reports for loan, purchase, or reproduction. This documentation might now be the only surviving record of an object, collection, or structure. Due to the devastation, many institutions have lost contact information and may not be able to reconstruct their records. If you have documentation of cultural property from the hurricane-affected region, please contact the owner institution and let them know about your information. Make arrangements to send copies of documentation to the institution when they are able to receive it. Do not send original material and do not send information until you have made contact. When returning documentation, please note that the AIC may be able to provide additional informational resources and would like to hear about your efforts.

Many conservators want to help in the aftermath of Katrina but are unable to respond for a variety of reasons. This is one opportunity. Please

take the time to review private practice, regional center, and museum records for relevant documentation and provide copies to aid institutions in their recovery.

—Meg Loew Craft, Secretary, AIC Board

Washington Watch

House Committee Approves "Year of the Museum" Resolution

On September 29, the House Committee on Government Reform approved H.R. 389, recognizing 2006 as the Year of the Museum. The American Association of Museums (AAM) worked with committee staff to ensure that H.R. 389 was included on the agenda as well as key members of Congress to make certain the bill was scheduled for consideration by the full House of Representatives by the end of 2005. Visit <http://thomas.loc.gov> and search for "Year of the Museum" or "H.R. 389" to view updates and a list of cosponsors.

Health and Safety

Some Chemical Things Considered: Cyclododecane

Characteristics [NML and DuPont]

Chemical formula: C₁₂H₂₄ CAS#: 294-62-2 Molecular wt.: 168.32

Boling Point °C: 247 Melting Point °: 60.7 Flash Point: >93

Vapor Pressure, mm. Hg, 100°C: 10

Synonyms: CDD

Cyclododecane is a solid cyclic hydrocarbon. It is white and waxy in texture. It is soluble in non-polar solvents and nearly insoluble in water and other polar solvents. One characteristic of cyclododecane that makes it an attractive material for use in art conservation is that it sublimates, changing from a solid to a gas over time. The half-life for the degradation process of the chemical's vapor in the atmosphere by reaction with photochemically-produced hydroxyl radicals and is estimated to be 23 hours [NML]. When cyclododecane is adsorbed by soil, or

Respirator Reminder

The AIC Health and Safety Committee would like to remind all conservators who wear respirators (and those who need one) that OSHA regulations stipulate specific requirements for respirator use:

- Respirators and filters must be certified by NIOSH.
- A medical evaluation is required prior to fit testing and use.
- Fit testing is required prior to initial use.
- Fit testing is required at least annually, thereafter.
- Training for use is required initially and annually, thereafter.

Both employers and employees are responsible for knowing these requirements. Protect your health and safety and that of your co-workers: Read OSHA's Respiratory

Protection Standard and familiarize yourself with the requirements.

Go to http://www.osha.gov/dcsp/ote/trng-materils/respirators/major_requirements.html to view the major requirements of OSHA's Respiratory Protection Standard, 29 CFR 1910.134. For the complete OSHA Standard refer to the Federal Register (63 FR 1152, January 8, 1998).

Watch for the announcement of AIC's Health and Safety Committee informational session and fit testing at the 2006 AIC Annual Meeting in Providence, Rhode Island.

—Cheryl Podsiki
Objects Conservator
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other surfaces, its rate of volatilization is dependent upon the rate of adsorption and the amount of moisture present (SRC). When suspended in an aqueous environment, cyclododecane is expected to adsorb suspended solids and sediments. In addition, its estimated volatilization half-lives in a model river and a model pond vary from 4 days to nine years, depending upon the rate of adsorption of other compounds. Bioaccumulation in aquatic organisms is expected to be high, based on data collected from carp and computer models for biodegradation (SRC).

Additionally, there have been suggestions among conservators that some residues remain *in situ* after the sublimation stage of a conservation treatment has concluded (Caspi and Kaplan).

Several articles in the conservation literature have been published in recent years describing the use of cyclododecane as a separator film or barrier in both conservation treatments and for use in casting and mold-making. It has also been described as a temporary consolidant for materials ranging from textiles, paper, wall paintings, ceramics and stone both in laboratory and archaeological settings. See sources below for references to a number of these articles.

Industrially, cyclododecane is used as a high purity solvent, in some mothproofing solutions, and in the production of chemicals used to make some synthetic fibers and lubricating oils.

Hazards

Cyclododecane has not been studied or classified for long-term health effects. To date there are no NIOSH, OSHA, ACGIH or IDLH exposure limits established for this chemical.

Occupational exposure to cyclododecane may occur through inhalation and dermal contact with this compound at workplaces where cyclododecane is produced or used (SRC). Environmental exposure to cyclododecane was recognized when it was detected in the expired air of 62 non-smokers in a study which characterized expired air for the presence of environmental pollutants and other chemical constituents (Krotoszynski et

al. 1982). The significance of these workplace and environmental exposures to cyclododecane is unknown because there are no published studies of the effects on these populations.

Because the volatility of cyclododecane is low (about half of that for naphthalene), and data suggests that it can take weeks to years for complete sublimation, air sampling is needed to determine what amount of ventilation is needed for a given substrate and method of application.

Exposure routes: inhalation, dermal absorption

Target organs and systems: skin, respiratory system

Acute Symptoms: unknown

Exposure Limits: [SIRI]

LD50(mice): > 10 gm/kg

Personal Protection: Since exposure limits have not yet been determined, it would be considered prudent to protect the skin from unnecessary exposure to cyclododecane by wearing personal protective clothing and gloves. In light of the lack of health and safety data, it is also prudent to protect against inhalation of subliming gasses by using fume hoods or other appropriate forms of ventilation. To prevent potential problems from inhalation or redeposition, use continually for the entire sublimation period and, for porous materials, some time beyond when all visible cyclododecane has sublimed away.

For eyes: prevent exposure by wearing protective eyewear such as goggles.

For ingestion: do not drink, eat, or smoke while working.

—Marilen Pool, *Objects Conservator*
AIC Health and Safety Committee,

Sources

National Library of Medicine,
Hazardous Substances Data Bank,
Toxnet

<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~gnWGtj:1>

DuPont Technical Information Sheet:
Cyclododecane.
<http://c12.invista.com/doc/files/261/CDD%20tech%20data%20sheet.pdf>

SIRI Vermont Safety Information Resources, MSDS.
<http://www2.siri.org/msds/tox/f/q44/q522.html>

Bruckle, I., Thornton, J., Nichols, K., and G. Strickler. 1999.
“Cyclododecane: technical note on some uses in paper and objects conservation.” *JAIC*. 38(2):162-175.

Caspi, Sara and Emily Kaplan. 2001.
“Dilemmas in transporting unstable ceramics: A look at cyclododecane.”, In *Objects Specialty Group Postprints*. Vol. 8. eds. V. Greene and L. Bruno. Washington, DC: American Institute for Conservation. pp. 116-135.

Keynan, Daria and Sigrid Eyb-Green. 2000.
“Cyclododecane and modern paper: a note on ongoing research.” *WAAC Newsletter*, 22(3):18-21.

Krotoszynski BK, O’Neill HJ, 1982,
“Involuntary bioaccumulation of environmental pollutants in nonsmoking heterogeneous human population” *Journal of Environmental Science and Health A17*, pp. 85583

Muros, Vanessa and John Hirx. 2004.
“The use of cyclododecane as a temporary barrier for water-sensitive ink on archaeological ceramics during desalination.” *JAIC*. 43(1): 75-89.

Syracuse Research Council (SRC), summarized on TOXNET, the Hazardous Substances Data base (HSDB), a site for the National Library of Medicine, toxnet.nlm.nih.gov. Search conducted on 12/15/00

Stein, Renee, Jocelyn Kimmel, Michele Marincola, Friederike Klemm. 2000.
“Observations on Cyclododecane as a temporary consolidant for stone,” *JAIC*. 39(3): 355-369.