

**COMPUTER TECHNOLOGY FOR CONSERVATORS—THE 2ND WAVE:** The IIC-CG annual conference and workshop will be held in Halifax, Nova Scotia, Canada in May 1993. The annual workshop may be thought of as version 2.0 of the 1985 Computer Technology for Conservators workshop, which led to the book by the same name. The first wave of implementation of any new technology is to put it to work doing familiar things. The second wave is to revise tasks and invent new tasks to fully utilize the capabilities of the new technology. Examples from the field of conservation might be: change the format of our data input and output to streamline procedures; explore the unused power of our computer systems in relation to computer use in other fields; find or invent ways to use computers in aspects of our work not yet computerized. The 1993 workshop will attempt to address these issues with innovative presentations and sessions showing various ways in which computers are being used in a second-wave way. Specific subjects such as digital imaging technology, data collection tools and methodology, and risk management for conservators will be addressed in focused sessions. Contact: Rob Stevenson, Workshop Coordinator, IIC-CG Conference '93, 50 Raddall Ave., Unit 1, Dartmouth, Nova Scotia, B3B 1T2, Canada; (902) 426-3880; fax: (902) 426-8627 or CIN e-mail: PARKS.A.

**IF YOU HAVE INFORMATION** you would like to share in this column or have any questions or comments, please contact: Katharine Untch, Conservation Department, Asian Art Museum, Golden Gate Park, San Francisco, CA 94118; (415) 668-8921; fax: (415) 668-8928.

## 1993 Membership Deadlines for Fellows and PAs

The deadlines for submitting Professional Associate and Fellow applications to the AIC office are **January 15, May 3, July 15, and October 15**. Application forms are available from the AIC office.

# From the Editor

*Carol Christensen*

I have been very busy during the last few months discovering how little I know about evaluating toxicity, following the publication of the Materials and Health and Safety columns in the September 1992 *AIC News*. I made a big mistake in calling propylene glycol monomethyl ether (PGME) nontoxic. I should have said that although PGME is less toxic than cellosolve, it is still classified as a toxic substance. The TLV-TWA for PGME is 100; the TLV-TWA for cellosolve is 5. Any substance with a TLV-TWA of 100 or lower should be used with caution, and incidentally, turpentine and Stoddard solvent, which also have TLV-TWA's of 100, fall into this category as well. Please be sure to read the correction in the Health and Safety News column, which contains accurate data supplied by industrial hygienist Monona Rossol. I also want to note that Chris Maines and Susanna Griswold, who gave me the data on PGME, did not see my article after it was written, and so they were unable to point out to me that the term "nontoxic" was incorrect.

My recent experience has shown me that evaluating the safety of solvents is not always a straightforward matter and that it is not wise to rely on manufacturers' claims. Assuming that there may be readers out there as unclear on these matters as I was until recently, *AIC News* has asked Monona Rossol, president of ACTS, Inc., to contribute an article to an upcoming issue of *AIC News* on the significance of TLVs in assessing laboratory hazards. This subject is vitally important to all of us, especially since many of the materials we use have had threshold limit values lowered in recent years. I am sure readers will look forward as much as I do to becoming better informed on this subject.

I would like to note that this issue of *AIC News* marks my first anniversary as editor. I think we have come a long way during the past year in making this publication more responsive to readers' needs, but I realize things haven't been perfect. We regret that there have been occasional inaccuracies as we try to report on a broader spectrum of sub-

jects for you. Please bear in mind that we are trying both to expand and to improve our newsletter with no increase in staff, resources, or time. Especially time—all submissions received for each deadline must be processed, reviewed by the editor, copyedited, produced, and printed within four weeks in order for you to have the issue in hand at the beginning of each publication month, six times a year. The number of weeks in a month are beyond our control. In any case, we are still anxious to know what subjects you would like to read about. If you have suggestions, please call the AIC office at: (202) 232-6636. And to those of you who have called or written to say how much you like the new *AIC News*, thanks for your support.

## Health & Safety News

### CORRECTION

The Materials column of the September 1992 *AIC News* contained misleading toxicity information on propylene glycol monomethyl ether based on data supplied by the manufacturer. Intended as an editor's note, a reference to the column also appeared in the Health and Safety News column (this column was erroneously credited to chair Sandra Blackard, when in fact the entire committee contributes to the column). Monona Rossol, the industrial hygienist who is an adviser to the Health and Safety committee, was not consulted before the information was printed. In the future, Rossol and the committee will review information in this column before it is published.

Rossol has provided the following correction: The information published in the September 1992 *AIC News* stated that propylene glycol monomethyl ether (PGME) is a "nontoxic" substitute for cellosolve. This is not the case. The editor made the "nontoxic" claims on the basis of information provided by the manufacturer, ARCO Chemical Company. Included were data showing only minor effects in various animals by inhalation at 3,000 ppm. In addition, ARCO cited human data from the 1970s when human volunteers were commonly exposed to new chemicals and their reactions noted. The data (a

TCLO) were supposedly obtained at 3,000 ppm. However, a 1970 study described in a NIOSH publication (see reference list below) implies that it is unlikely that the 3,000 ppm human data are correct. Tests with human volunteers exposed to 231-249 ppm showed that after 45 to 60 minutes, 20 of the 23 male subjects had developed eye irritation and increased blinking, two complained of throat irritation, and one had a headache. As the concentration of PGME in the chamber increased, men began dropping out. After 1,000 ppm only one man remained, and he stayed until 2,050 ppm was reached. At this point, he experienced severe lacrimation, eye spasms, and throat irritation, and he was unwilling to breathe through his nose because of pain. Far from being of "low toxicity" as ARCO claims, PGME has been assigned a TLV-TWA of 100 ppm. This puts PGME in the same range of toxicity as other solvents with a 100 ppm TLV, such as turpentine, xylene, and Stoddard solvent. However, it is still wise to substitute PGME for cellosolve, whose TLV is 5 ppm.

PGME also has other hazards, some of which are summarized below:

- "CAS #107-98-2 (for the alpha isomer)
- "ACGIH TLV-TWA = 100 ppm; TLV-STEL = 150 ppm; OSHA (PEL) and NIOSH (REL) exposure limits are the same.
- "Skin absorption of PGME is expected to be a significant source of exposure, but it has never been studied or quantified.
- "Reproductive/cancer hazards: Assumptions about the metabolism of PGME in animals and extrapolation from short-term tests and very few studies indicate it is probably not a reproductive hazard. Cancer tests have not been done.

A discussion of reproductive toxicity must also consider the two isomeric forms of PGME. The data above are for the more common alpha isomer. The beta isomer of PGME (2-methoxy-1-propanol, CAS #1589-47-5) is expected on the basis of preliminary studies to be a reproductive hazard. AIC members should ask about the presence of this isomer in any commercial PGME they purchase. For example, ARCO's Materials Safety Data Sheet indicates that ARCOSOLV PM™ contains 2 percent 2-methoxy-1-propanol.

For additional information, see "NEG and NIOSH Basis for an Occupational Health Standard: Propylene Glycol Ethers and Their Acetates" (U.S. Department of Health and Human Services, Centers for Disease Control, 1991). Write to: Publications Dissemination, DSDTT, National Institute for Occupational Safety and Health, 4676 Columbia Pkwy., Cincinnati, OH 45226. Ask for a free copy of DHHS (NIOSH) publication no. 91-103.

## REVIEWS

**COURT STRIKES DOWN OSHA'S PELs:** On July 7, the 11th Circuit Court of Appeals in Atlanta voided OSHA's 1989 broad-based permissible exposure limit (PEL) standard for general industry. "If the court's decision stands, the effect of the ruling would be to abolish health standards for nearly half the substances previously covered and return the exposure limits for the other substances to the levels adopted by OSHA in 1971." Although the court struck down the standard, OSHA may appeal, so for the time being the 1989 standard remains in effect. *Occupational Hazards*, August 1992, 11.

**NEW PEL FOR METHYLENEDIANILINE (MDA),** a component of some epoxies: The new PEL-TWA is 0.01 ppm with PEL-STEL (15 minute limit) of 0.1 ppm. The PEL reflects only the inhalation hazard, but cancer in rats and mice can be induced through ingestion and skin absorption as well as inhalation. MDA is also extremely toxic to the liver of animals at very low doses. (This new standard for MDA will not be affected by the court ruling described above.) Anyone who uses the chemical MDA in significant amounts should request a copy of new standards for MDA from the local OSHA office. However, **exposure to MDA should be eliminated whenever possible.** MDA can be found in two-part polyurethane systems, some epoxy systems, dyes, and some organic pigments; check the Material Safety Data Sheet (MSDS). All of these substances, even without MDA, warrant use with local exhaust ventilation. When MDA is identified in an epoxy hardener, an alternative epoxy system should be used. (Along with those containing MDA, other epoxy chemicals that should be avoided completely include: 2-nitropropane and 4-vinyl-1-

cyclohexane diepoxide; whenever possible, avoid glycidyl ethers and glycol ethers.) *ACTS FACTS* 6, no. 9 (September 1992). Monona Rossol, editor, [redacted], New York, NY 10012.

**METHYL BROMIDE:** New information on methyl bromide insecticide fumigant encourages preventive approaches and nonchemical treatments. First, new regulations will make methyl bromide more difficult to use. "The EPA is developing regulations which would add methyl bromide to the list of class I ozone depleting substances under the Clean Air Act Amendments of 1990." Second, its long-term hazards have been studied by the National Toxicology Program (NTP). Although they found "no evidence (NTP cancer category) of carcinogenic activity in male and female mice," they did find "degenerative changes in the brain and heart, and damage to the nose." Conservators should already be aware of methyl bromide's potential to damage the central nervous system and its low PEL-TWA and TLV-TWA of 5 ppm. A certified applicator and approved fumigation chamber are required for its use. *ACTS FACTS* 6, no. 7 (July 1992). Monona Rossol, editor, [redacted] New York, NY 10012.

**TOLUIDINE RED PIGMENT:** The National Toxicology Program (NTP) tested this pigment, also known as hansa red. This is an example of a pigment with no TLV or PEL. "It was nominated for testing in part because of the lack of information on its toxicity . . . The two-year study showed some evidence (NTP cancer category) of carcinogenic activity in male and female rats, and in male mice. There was no evidence (NTP cancer category) of carcinogenic activity in female mice. There were also other effects such as kidney and thyroid damage." These tests also raise questions about the safety of other chemically related hansa pigments.

Toluidine and other pigments are hazardous only if they get into the body by inhalation, ingestion, or excessive skin contact. Most dangerous is inhalation of powdered pigments, dust from sanded or flaking paints, mists from spraying or airbrushing, or vapors from heating them. Ingestion and skin contact can be prevented by never eating, drinking, or storing food in work areas.

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and practicing good hygiene. As with all pigments in powdered form, exposure to hansa red should be avoided. Dry pigments should be used with gloves and local exhaust ventilation or a toxic dust mask. Wet clean-up of working surfaces is advised. Use this information to update your chosen artist's health and safety reference book. *ACTS FACTS* 6, no. 7 (July 1992). Monona Rossol, editor, [REDACTED], New York, NY 10012.

**MUSEUM EXHIBITION SAFETY GUIDELINES**, by Pat Kirschner, Operations Manager, New Museum for Contemporary Art, New York, NY. These exhibition safety guidelines "are intended to serve as an aid in establishing minimum standards for health and safety of the public and the staff of a contemporary art museum." The guidelines reflect the New York City Building Code, OSHA, and the National Fire Protection Association (NFPA) standards for public and workplace safety. Topics covered in approximately two pages are: fire protection, construction materials, electrical fire safety, exit requirements, and artists' installations. A practical questionnaire for artists under consideration for exhibition is included. The 30 questions are designed to assist artists in producing artworks safe for viewers and staff. Questions on six topics include: physical hazards like sharp edges and stability; the inclusion of toxic or unknown materials or chemicals and the availability of Material Safety Data Sheets (MSDS's); fire and electrical hazards; special effects used in performances; special problems like the use of materials that may attract pests; and special handling requirements. *Art Hazards News* 15, no. 1 (1992). Center for Safety in the Arts, 5 Beekman St., Ste. 1030, New York, NY 10038.

**HEALTH AND SAFETY IN METAL JEWELRY**, by Michael McCann, Angela Babin, and Edward Olmstead. This new four-page data sheet clearly presents the health and safety hazards involved in metal jewelry. Topics included are: silver soldering, soft soldering, lost wax casting, electroplating and electroforming, anodizing, surface working, polishing, and finishing. It provides excellent refresher and training information. A pagination error in the newsletter version of the data sheet is corrected in the version available from the CSA for \$2.

## FAIC Endowments

To meet the needs of students to attend the AIC annual meeting and other professional meetings and to respond to the ever-increasing demand for grant funds, the board has again determined that in 1993 applications for funds will be accepted only from students to attend annual meetings. The board is particularly grateful to the following Specialty Groups that have donated funds for this purpose: Book and Paper, CIPP, Photographic Materials, Textiles, Objects, Paintings, and Wooden Artifacts.

The deadline for submission of all endowment applications, including those to the Carolyn Horton fund, is **February 1, 1993**.

## FAIC Conservation Services Referral System

The number of requests for referrals has increased from 35 to 49 a week. The Conservation Services Referral task

force met in August and modified the form that is included in the membership renewal information mailed in mid-October. They devised a mechanism for determining user satisfaction with the system and discussed dissemination of information about the system and future needs. The next meeting of the task force will be held in January or February, 1993. If you have questions or suggestions about the system, please contact Christine Smith, task force chair, [REDACTED].

## Publications

AIC continues to sell publications of interest to members at a discount. The recent best sellers are *Caring for Your Collections* (Abrams), eds. National Committee to Save America's Cultural Collections, and *Guide to Environmental Protection of Collections*, by Barbara Appelbaum. To order, use the form in the 1993 *Directory* (p. 260), or call the AIC office.

## CHEVALIER CONSERVATION

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