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Standard Practice for Labeling Ceramic Art Materials for Chronic Adverse Health Hazards¹

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INTRODUCTION

Uninformed or careless use of some ceramic art material products can give rise to health hazards, either acute or chronic, or both. Specific and readily available warnings are needed to help protect users. One way to disseminate such information is to provide appropriate precautionary labeling on ceramic art material products.

Labeling for acute health hazards, including those associated with ceramic art materials, are presently being addressed by such requirements as the U.S. Consumer Product Safety Act, the Federal Hazardous Substances Act, and the like. There are presently no specific national standards for labeling ceramic art materials with respect to chronic adverse health hazards.

This practice is intended to provide a standard for developing precautionary labels concerning chronic adverse health hazards related to the use of ceramic art materials. It is further intended to have the adaptability necessary to keep labels current with existing scientific and medical knowledge, as well as in conformity with other precautionary labeling requirements, both acute and chronic, thereby avoiding unnecessary confusion by users with respect to other precautionary labeling.

1. Scope

1.1 This practice describes a procedure for developing precautionary labels for ceramic art materials and provides hazard and precautionary statements based upon knowledge that exists in the scientific and medical communities. This practice concerns those chronic adverse health hazards known to be associated with a product or product component(s), when the component(s) is present in a physical form, volume, or concentration that in the opinion of a toxicologist has the potential to produce a chronic adverse health effect(s).

1.2 This practice is intended to apply exclusively to ceramic art materials which are packaged in sizes intended for use by artists or crafts people, either individually, or in a small group or class.

1.3 This practice applies to developing precautionary labeling for ceramic art materials intended for adult usage. Conformance to this practice does not imply that ceramic art materials will necessarily be labeled adequately or safe for use by children. Labeling determinations should consider reasonably foreseeable use or misuse by children and include as appropriate, in such instances, warnings to keep out of reach, or other specific precautionary statements. The responsibility for precautionary labeling rests with the ceramic producer or repackager who markets the material for art or craft use.

1.4 This practice does not specify test methods for determining whether a substance or product presents chronic adverse health hazards.

1.5 This practice does not apply to products appropriately labeled for known chronic adverse health hazards according to chemical substances labeling standards and practices, such as another national consensus standard, existing labeling statutes, regulations, or guidelines.

1.6 Since knowledge about chronic adverse health hazards is incomplete and warning cannot cover all uses of any product, it is not possible for precautionary labeling to assure completely safe use of an art product.

1.7 Manufacturers or repackagers may wish to determine individually or collectively precautionary labeling for ceramic art materials in accordance with this practice. Compliance may be certified by a certifying organization. Guidelines for a certifying organization are given in Appendix X1.

¹ This practice is under the jurisdiction of ASTM Committee C21 on Ceramic Whitewares and Related Products and is the direct responsibility of Subcommittee C21.03 on Methods for Whitewares and Environmental Concerns.

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1.8 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Definitions of Terms Specific to This Standard

2.1 *analytical laboratory*—a laboratory having personnel and apparatus capable of performing quantitative or qualitative analysis of ceramic art materials, which may yield information that is used by a toxicologist for evaluation of potentially hazardous materials.

2.2 *artists or crafts people*—individuals who create, or recreate in a limited number, largely by hand, works that may or may not have a practical use, but in which aesthetic considerations are paramount.

2.3 *bioavailability*—the extent to which a substance can be absorbed in a biologically active form.

2.4 *ceramic art material or ceramic art material product*—any raw or processed material, or manufactured product, marketed or represented by a ceramic producer or repackager as intended for and suitable for use in a fired product produced by artists or crafts people.

2.5 *ceramic producer*—the person or entity who manufactures, processes, or imports a ceramic art material.

2.6 *chronic adverse health effect(s)*—a persistent toxic effect(s) that develops over time from a single, prolonged, or repeated exposure to a substance which can, in humans, cause sterility, birth defects, harm to a developing fetus or to a nursing infant, cancer, allergic sensitization, damage to the nervous system, or a persistent adverse effect to any other organ system.

2.7 *chronic adverse health hazard(s)*—hereafter referred to as “chronic hazard”—a health risk to humans, resultant from exposure to a substance that may cause a chronic adverse health effect.

2.8 *label*—a display of written, printed, or graphic matter upon the immediate container of any ceramic art material product. When the product is unpackaged, or is not packaged in an immediate container intended or suitable for delivery to artists or crafts people, the label can be a display of such matter directly upon the ceramic art material or upon a tag or other suitable labeling device attached to the ceramic art material.

2.9 *repackager*—the person or entity who obtains materials from ceramic producers and, without making changes in such materials, puts them in containers intended for sale as ceramic art materials to artists or crafts people.

2.10 *sensitizer*—a substance that is known to cause, through an allergic process, a chronic adverse health effect which becomes evident in a significant number of people on re-exposure to the same substance.

2.11 *toxic*—applies to any substance that is likely to produce personal injury or illness through ingestion, inhalation, or skin contact.

2.12 *toxicologist*—an individual who through education, training and experience has expertise in the field of toxicology, as it relates to human exposure, and is either a toxicologist or physician certified by a nationally recognized certification board.

3. Requirements

3.1 To conform to this voluntary practice, the ceramic producer or repackager of ceramic art materials shall submit ceramic art material product formulation(s) or reformulation(s) to a toxicologist for review, such review to be in accordance with Section 4 of this practice. The toxicologist shall be required to keep product formulation(s) confidential.

3.1.1 Unless otherwise agreed in writing by the ceramic producer or repackager, no one other than the toxicologist shall have access to the formulation(s); except that the toxicologist shall furnish a patient’s physician, on a confidential basis, the information necessary to diagnose or treat cases of exposure or accidental ingestion.

3.2 To conform to this practice, the ceramic producer or repackager, upon advice given by a toxicologist in accordance with Section 4 of this practice, shall adopt precautionary labeling in accordance with Section 5 of this practice and based upon generally accepted, well-established evidence that a component substance(s) is known to cause chronic adverse health effects.

3.3 To conform to this practice, labeling shall be parallel to, conform to, and minimally include any labeling practices prescribed by U.S. federal and state statutes or regulations and shall not diminish the effect of required acute toxicity warnings.

3.4 To conform to this practice, the ceramic producer or repackager shall supply a poison exposure management information source,² the generic formulation information required for dissemination to poison control centers or provide a 24-h cost-free number to poison control centers.

3.5 To conform to this practice, the ceramic producer or repackager shall have a toxicologist review as necessary, but at least every five years, ceramic art material product formulation(s) and associated label(s) based upon the then current, generally accepted, well-established scientific knowledge.

4. Determination of Labeling

4.1 A ceramic art material is considered to have the potential for producing chronic adverse health effects if any customary or reasonably foreseeable use can result in a chronic hazard.

² Two of the larger poison control centers are: The Rocky Mountain Poison Control Center, W. 8th and Cherokee, Denver, CO 80204; and the National Poison Control Center Network, 125 De Soto St., Pittsburgh, PA 15213.

4.2 In making his determination a toxicologist(s) shall take into account the following:

4.2.1 Current chemical composition of the ceramic art material, supplied by an analytical laboratory or by an industrial chemist on behalf of a manufacturer or repackager.

4.2.2 Current generally accepted, well-established scientific knowledge of the chronic toxic potential of each component(s) and the total formulation.

4.2.3 Specific physical and chemical form of the ceramic art material product, bioavailability, concentration, and the amount of each potential chronic toxic component found in the formulation.

4.2.4 Reasonably foreseeable uses of the ceramic art material product as determined by consultation with users and other individuals, who are experienced in use of the material(s), such as teachers, or by market studies, unless such use information has previously been determined with respect to the specific ceramic art material(s) under review.

4.2.5 Potential for known synergism and antagonism of the various components of the formulation.

4.2.6 Potential chronic adverse health effects of decomposition or combustion products, if known, from any reasonably foreseeable use of the hazardous ceramic art material product, and

4.2.7 Opinions of various medical, regulatory, and scientific bodies³ on the potential for chronic adverse health effects of the various components of the formulation.

4.3 Based upon the conclusion reached in conformance with review determinations set forth herein the toxicologist(s) shall recommend precautionary labeling consistent with Section 5 of this practice.

5. Labeling Practices

5.1 *Signal Word:*

5.1.1 When a signal word for an acute hazard(s) is mandated and a chronic hazard(s) exists, the signal word shall be that for the acute hazard.

5.1.2 When only a chronic hazard(s) exists, the signal word WARNING shall be used.

5.1.3 The signal word shall be prominently visible and set in bold capitals in a size *equal to* or *greater* than the statement of potential chronic hazards.

5.2 *List of Potential Chronic Hazards*—Potential chronic hazards, as determined under the procedures of Section 4, shall be stated substantially in accordance with the statements listed in Annex A1 of this practice. Potential chronic hazards noted shall be those that are clinically significant and that might be expected with any reasonably foreseeable use of the ceramic art material. The hazards should be grouped in the order of relative descending severity.

5.3 *Name of Chronic Hazardous Component(s)*—All components and known decomposition products of the formulation with a potential for chronic hazards, as determined under the procedures of Section 4, shall be listed prominently. Generically equivalent names may be used.

5.4 *Safe Handling Instructions*—Appropriate precautionary statements as to work practices, personal protection, and ventilation requirements shall be used substantially conforming with those listed in Annex A2 of this practice.

5.5 *List of Sensitizing Components*—To protect artists or crafts people from known sensitizers found within ceramic art materials, each label shall contain a list of those sensitizers present in sufficient amounts to contribute significantly to a known skin or respiratory sensitization.

5.6 *Combined Statements*—If a ceramic art material contains more than one component capable of causing a chronic adverse health effect, or if a single chemical can cause several different chronic adverse effects, the potential effects may be combined into one statement.

5.7 *Information Sources*—The precautionary label shall contain a statement identifying a source for additional health information substantially in conformance with one of the phrases listed below:

FOR MORE HEALTH INFORMATION—(24-HOUR COST FREE NUMBER).

CONTACT A PHYSICIAN FOR MORE HEALTH INFORMATION.

CALL YOUR LOCAL POISON CONTROL CENTER FOR MORE HEALTH INFORMATION.

5.8 *Supplemental Information*—Where appropriate, more detailed technical information that relates to chronic hazard(s), such as physical properties, decomposition products, detailed safety instructions or disposal recommendations, shall be included in supplemental documents, such as Material Safety Data Sheets, technical brochures, technical data sheets, and the like.

6. Keywords

6.1 ceramic art materials; chronic adverse health hazards; labeling

³ Such as: International Agency for Research on Cancer, National Cancer Institute, World Health Organization, American Lung Association, and the International Lead Zinc Research Organization.

ANNEXES**(Mandatory Information)****A1. CHRONIC ADVERSE HAZARD STATEMENTS**

May cause sterility.
May be harmful by breathing vapors/dust.
May be harmful if swallowed.
May be harmful by skin contact.
May produce birth defects in the developing fetus.
May be excreted in human milk.
May cause harm to the nursing infant.
Cancer agent! Exposure may produce cancer.
Cancer agent based on tests with laboratory animals.
Possible cancer agent based on tests with laboratory animals.
May produce allergic reaction by ingestion/inhalation/skin contact.
May produce numbness or weakness in the extremities.
Exposure may cause (specify the organ(s)) damage.
Heating/combustion may cause hazardous decomposition products.

A2. PRECAUTIONARY STATEMENTS

Keep out of reach of children.
When using do not eat, drink or smoke.
Wash hands immediately after use.
Avoid inhalation/ingestion/skin contact.
Avoid fumes from combustion.
Keep container tightly closed when not in use.
Store in well-ventilated area.
Wear protective clothing (specify type).
Wear NIOSH⁴-certified mask for dusts/mists/fumes.
Wear NIOSH-certified respiratory with an appropriate cartridge for (specify).
Use window exhaust fan to remove vapors and assure adequate cross ventilation. (Specify explosion-proof if necessary.)
Do not heat above (specify degree) without adequate ventilation.
Use (specify type) local exhausting hood.
Do not use/mix with (specify material).
Wear NIOSH-certified supplied-air respirator.

APPENDIXES**(Nonmandatory Information)****X1. GUIDELINES FOR CERTIFYING ORGANIZATION**

X1.1 The term-certifying organization, as used in these guidelines, refers to an organization or an institute which, after assuring that all provisions are met, certifies that a ceramic art material does conform to the labeling requirements of this practice.

X1.2 The certifying body may be funded by member manufacturers, but should include users or their representatives, as well as company chemists, on its technical and certifying committees.

X1.3 Representative samples of ceramic art materials, labeled as conforming to this practice and bought at retail, should be analyzed at random and from time to time by an analytical laboratory to assure they are the same as the formulation used by the toxicologist(s) for determination of labeling requirements.

X1.4 The methods used by this toxicologist(s) in review and determination of the need and content of precautionary labeling for potential chronic adverse health effects should be periodically reviewed by an advisory board composed of not less than three or more than five toxicologists at least one of which is certified in toxicology by a nationally recognized certification board.

⁴ National Institute of Occupational Safety and Health.