BIO RISK

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RISK ASSESSMENT FOR ART MATERIALS

(LHAMA AND CALIFORNIA PROPOSITION 65)

ART MATERIAL: Low Fire Clays, Earthenware (see list below) from New Mexico Clay, its Franchisees, Distributors and Dealers

INGREDIENTS:

MAJOR:

Water - CAS# 7732-18-5
Clay/Kaolin - CAS# 1332-58-7
Silica (Quartz)- CAS# 14808-60-7
Silica, Amorphous - CAS# 7631-86-9
Talc – CAS# 14807-96-6
Carboxymethylcellulose - CAS# 9004-32-4
Frit (Leadless) - CAS# 65997-18-4
Kyanite - CAS# 1302-76-7
Mullite - CAS# 1302-93-8
Cristobalite - CAS# 14464-46-1
Mica – CAS# 12001-26-2
Nylon Fiber - CAS# 25038-54-4
Nepheline Syenite - CAS# 37244-96-5

MINOR

Barium Carbonate - CAS# 517-77-9
Bentonite - CAS# 1302-78-9
Lignosulfanate - CAS# 8061-52-7

OVERALL EVALUATION

TOXICITY

Water makes up to 29% on these low fire clays and is considered non-hazardous in this application.

Clay/Kaolin normally contains 10-30% quartz (a form of silica), which is an animal carcinogen. Silicosis, a chronic lung disease can also result from quartz exposure. Clay is not a genotoxic or developmental hazard. The TLV for quartz (0.05 mg/m^3) has been established to prevent lung effects and cancer.

Silica can cause silicosis (a chronic lung disease) and cancer but is not a mutagenic or reproductive hazard. The TLV for quartz, a form of silica, (0.05 mg/m^3) has been established to prevent lung effects and cancer.

Silica, Amorphous, is used in pharmaceutical preparations and is considered less toxic than the crystalline form of silica (quartz).

Frit is a fused silicate glass substance made from a mixture of inorganic chemicals produced by rapid quenching of a molten mixture of materials yielding a glassy solid flake or granules. Some frit contains lead compounds (30-67% as PbO). Frit is a fused silicate glass substance made from a mixture of inorganic chemicals (sodium, potassium, calcium, aluminum, fluoride) produced by rapid quenching of a molten mixture of materials yielding a glassy solid flake or granules. Some frits contain lead compounds (30-67% as PbO). Lead and its inorganic salts are very hazardous chemicals. Different lead contains compounds that have been shown to cause immunological and serious hematological effects as well as permanent neurological and kidney damage. Lead is also considered a potential carcinogen and reproductive hazard. Frit is not considered hazardous if it is lead or cadmium free. Lead frits are not used in clay bodies.

Talc is a mixture of several minerals. It is used in ceramics and paints. Some talc may contain asbestos. Talc is not a mutagenic, developmental or a carcinogenic hazard (unless it contains high levels of asbestos). Long-term exposure can result in permanent lung damage. The talc used in this product has no asbestos, but does contain non-abestiform materials such as tremolite, anthophylite as well as serpentine. The TLV of 2 mg/m^3 has been established to prevent long-term lung effects.

Kyanite is a form of aluminum silicate and may contain a high level of quartz. Inhalation exposure to dust may cause lung damage similar to quartz. Kyanite decomposes at about 1550C to form muillite and cristobalite. It has no TLV.

Mullite is also a form of aluminum silicate. Inhalation exposure to dust may cause lung damage similar to quartz. It has no TLV

Cristobalite is crystalline silica. It is used in commercial paints. The TLV for quartz, a form of silica, (0.05 mg/m^3) has been established to prevent lung effects and cancer.

Nylon Fiber is a polymer. Polymers are generally thought to be biologically inactive. Residual monomers may be present in very low amounts in any polymer. It has no TLV.

Carboxymethylcellulose is essentially nontoxic. It is approved for use in foods and drugs. It has no TLV.

Nepheline syenite is considered a nuisance dusts and is not expected to cause any chronic health effects

Mica does not appear to have any long-term toxicity. It is a silicate and is frequently found with other particles. Mica may cause pneumoconiosis when present in a mixture, but is non-toxic via the oral route. It may be an irritant under some conditions.

The minor ingredients are present at levels of 1% or below. These materials are surfactants, emulsifiers, biocides and other additives. These materials are not carcinogenic, mutagenic, reproductive or developmental hazards based on a review of the MSDS, Toxline and use conditions.

EXPOSURE

Low Fire Clays, Earthenware contains water so it will not produce dust and therefore inhalation exposure is unlikely during use.

Oral exposure would be possible if contaminated materials are placed in the mouth. Handling of this product could result in short periods of potential skin exposure.

No estimated dermal exposure was attempted.

CONCLUSION

Low Fire Clays, Earthenware contains ingredients that have potential long-term health effects.(quartz) Inhalation exposure is unlikely as water is added to this low fire clays before it is sold. . Exposure to skin is possible.

The statement **"conforms to ASTM D 4236"** for chronic toxicity is required. The use of this art material under normal conditions should not produce any acute health effect. No labeling is required under the FHSA or California Prop 65.

Signed_____ Date _____

Clays = WLO, WLO with Sand, WES, Sheepdog, Storyteller, RAM, Raku 2000, Red Earthenware RL6, APSR, Jonies, TC, Mica White, White School Clay, Red School Clay, Self Hardening Clay, Shell's Sculpture

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STATEMENT OF CONFORMANCE FOR ART MATERIALS
(LHAMA AND CALIFORNIA PROPOSITION 65)

January 15, 2009

TO: Brant Palley
New Mexico Clay
3300 Girard NE
Albuquerque, NM 87107

FROM: JOHN J. CLARY, PH.D, FELLOW, A.T.S.

ART MATERIAL: Low Fire Clays, Earthenwares (see list below) from New Mexico Clay, its Franchisees, Distributors and Dealers

I have reviewed the toxicity of the current chemical composition of the above named material. The review is based on specific information on acute and chronic toxicity, physical form, bioavailability, concentration used, standard practices and related information. The risk assessment on the material itself is attached. This material must be re-evaluated at least every five years.

In my professional judgment, based on this evaluation, your art material listed above conforms to ASTM D 4236. The statement "conforms to **ASTM D 4236**" is required for chronic Based on a review of all available information provided to date, it is my opinion that this material under reasonable handling or use (includes reasonable foreseeable accidental handling or use) should not cause personal injury or substantial illness nor would not be expected to be toxic, corrosive, flammable or combustible, an irritant or a strong sensitizer by the oral, dermal or inhalation routes of exposure as defined in the FHSA Regulations (16 CFR 1500.3 (b) (5), (8), (9) . No labeling is required under the provisions of **FHSA (16 CFR 1500.3) or** under the provisions of The California Safe Drinking Water and Toxic Enforcement Act of 1986 (Prop 65).

This material is determined to be non-toxic under proposed use conditions

John J. Clary, Ph.D
Certified in General Toxicology
Fellow, A.T.S

Clays = WLO, WLO with Sand, WES, Sheepdog, Storyteller, TRAM, Raku 2000, Eed Earthenware RL6, APSR, Joines, Mica White, White School Clay wlo APS, Self Hardening Clay, Shel Sculpture