APPENDIX C

HAZARDOUS MATERIAL RATINGS

A. Determination of Degree of Health Hazard

The health hazard rating of a material shall be determined by evaluating the potential for harm and the relative toxicity of the material or mixture of materials as a whole. Table A-1 applies to human effects data. In the absence of human exposure data, Table A-2 shall be used as a guideline. Where both acute and chronic exposure data are available, the data for the worst effect shall be used to develop the rating.

Table A-1

RELATIVE TOXICITY RATING FOR HAZARDOUS MATERIALS
(Human Exposure by Any Route)

* Includes substances which bear a significant relationship to the development of cancer in man, but excluding the common varieties of skin cancer.

** Allergens are rated according to their sensitizing potential rather than the severity of an allergic reaction upon re-exposure to a substance by a sensitized worker.

Table A-2

RELATIVE ACUTE TOXICITY CRITERIA

B. Determination of Degree of Fire Hazard

The fire hazard rating of a product shall be determined by evaluating the potential for harm and the relative flammability of the material or mixture of materials as a whole, using the criteria which follows:

The fire hazard rating of a liquid shall be determined from the criteria contained in Table A-3 and based on data using the final product formulation. The test procedures as found in 29 CFR 1910.106 and 107 are mandatory liquids.

EXTREMELY FLAMMABLE: Rating 4

Materials which on account of their physical form or environmental conditions can form explosive mixture with air which are readily dispersed in air, such as dusts of combustible solids and mists or flammable or combustible liquid droplets.

HIGHLY FLAMMABLE: Rating 3

Liquids and solids that can be ignited under almost all ambient temperature conditions. This rating shall include:

Solid materials in the form of coarse dusts which may burn rapidly but which generally do not form explosive atmospheres with air.

Solid materials in a fibrous or shredded from which may burn rapidly and create flash fire hazards, such as cotton, sisal and hemp.

Materials which burn with extreme rapidity, usually by reason of self-contained oxygen (e.g., dry nitrocellulose and many organic peroxides).

Materials which ignite spontaneously when exposed to air or to other substance.

MODERATELY COMBUSTIBLE: Rating 2

Materials that must be moderately heated or exposed to relatively highly ambient temperatures before ignition can occur. Materials with this rating would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or ander moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres with air. This rating shall include solids and semisolids which readily give off flammable vapors.

SLIGHTLY COMBUSTIBLE: Rating 1

Materials that must be preheated before ignition can occur.

Materials with this rating require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. This rating shall include: Materials which will burn in air when exposed to a temperature of 1,500 F (815 C) for a period of five (5) minutes or less.

NONCOMBUSTIBLE: Rating 0

This group should include any material which will not burn in air when exposed to a temperature of 1,500 F (815 C) for a period of five (5) minutes.

The relative ratings are taken from NFPA 704M booklet, with changes in flash point to reflect current IOTA regulations.

TABLE A-3

RELATIVE FLAMMABILITY CRITERIA

C. Determination of Degree of Reactivity

The reactivity hazard rating of a material shall be determined by evaluating the potential for harm and the relative reactivity of the material or mixture of materials as a whole, using the criteria which follow.

Materials in this category may be self-reative by polymerization, decomposition or condensation and/or reactive with other materials commonly encountered in the work place. The reactivity in this category often involves the rapid release of highly hazardous products. The assessment of relative reactivity requires specific knowledge of what materials may be encountered in the work place.

EXTREMELY REACTIVE: Rating 4

Materials which in themselves are readily capable of detonation or of explosive decomposition or explosive reaction at normal temperatures and pressures. This rating would include materials which are sensitive to mechanical or localized thermal shock at normal temperatures and pressures.

HIGHLY REACTIVE: Rating 3

Materials which in themselves are capable of detonation or of explosive decomposition or explosive reaction, but which require a strong initiating source or which must be heated under confinement before initiation. This rating should include materials which are sensitive to thermal or mechanical shock at elevated temperatures and pressures or

which react explosively with water without requiring heat or confinement.

MODERATELY REACTIVE: Rating 2

Materials which in themselves are normally unstable and readily undergo rapid chemical change but do not detonate. This rating should include materials which can undergo chemical change with rapid release of energy at normal temperatures and pressure. It should also include those materials which may react violently with water or which may form potentially explosive mixtures with water.

SLIGHTLY REACTIVE: Rating 1

Materials which in themselves are normally stable but which can become unstable at elevated temperatures and pressures or which may react violently with water with some release of energy but not violently.

NONREACTIVE: Rating 0

Materials which in themselves are normally stable, even under fire exposure conditions and which are not reactive with water.