Material Safety Data Sheet
Nitric acid, 20-70%

Section 1 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear to yellow liquid.

Danger! May be fatal if inhaled. Causes severe eye and skin burns. Causes severe respiratory and digestive tract burns. Strong oxidizer. Contact with other material may cause a fire. Acute pulmonary edema or chronic obstructive lung disease may occur from inhalation of the vapors of nitric acid. Corrosive to metal.

Target Organs: Lungs, eyes, skin, mucous membranes.

Potential Health Effects
Eye: Causes severe eye burns. Direct contact with liquid may cause blindness or permanent eye damage.

Skin: Causes skin burns. May cause deep, penetrating ulcers of the skin. Concentrated nitric acid dyes human skin yellow on contact.

Ingestion: May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns. May cause perforation of the digestive tract. May cause systemic effects.

Inhalation: Effects may be delayed. Causes chemical burns to the respiratory tract. Inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Aspiration may lead to pulmonary edema. May cause systemic effects. May cause acute pulmonary edema, asphyxia, chemical pneumonitis, and upper airway obstruction caused by edema. Depending on the conditions, the vapor or fumes of nitric acid may actually be a mixture of nitric acid and various oxides of nitrogen. The composition may vary with temperature, humidity, and contact with other organic materials.

Chronic: Exposure to high concentrations of nitric acid vapor may cause pneumonitis and pulmonary edema which may be fatal. Symptoms may or may not be delayed. Continued exposure to the vapor & mist of nitric acid may result in a chronic bronchitis, & more severe exposure results in a chemical pneumonitis. The vapor & mists of nitric acid may erode the teeth, particularly affecting the canines & incisors.

Section 2 - First Aid Measures

Eyes: Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

**Notes to Physician:** Treat symptomatically and supportively.

### Section 3 - Personal Protection

**Personal Protective Equipment**
- **Eyes:** Wear chemical splash goggles and face shield.
- **Skin:** Wear appropriate gloves to prevent skin exposure.
- **Clothing:** Wear appropriate clothing to prevent skin exposure.
- **Respirators:** Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

### Section 4 - Physical and Chemical Properties

**Physical State:** Liquid  
**Appearance:** clear to yellow  
**Odor:** strong odor - acrid odor - suffocating odor  
**pH:** 1.0 (0.1M soln)  
**Boiling Point:** 86 deg C  
**Freezing/Melting Point:** -42 deg C  
**Decomposition Temperature:** Not available.  
**Solubility:** Soluble in water.

### Section 5 - Stability and Reactivity

**Chemical Stability:** Stable. Decomposes when in contact with air, light, or organic matter. The yellow color is due to release of nitrogen dioxide on exposure to light.  
**Conditions to Avoid:** High temperatures, light, confined spaces.  
**Incompatibilities with Other Materials:** Metals, reducing agents, strong bases, acetic acid, alcohols, acetone, aniline, hydrogen sulfide, metal powders, carbides, aldehydes, organic solvents, combustible materials, chromic acid, flammable liquids, cyanides, sulfides, incompatible with many substances.  
**Hazardous Decomposition Products:** Nitrogen oxides.  
**Hazardous Polymerization:** Has not been reported.