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**MATERIAL
SAFETY
DATA SHEET**
No. 4

SECTION 1. PRODUCT INFORMATION

NAME: Ammonia

TRADE NAME AND SYNONYMS: Ammonia, Anhydrous (D.O.T.)

APPEARANCE AND ODOR: Colorless gas with strong pungent odor

CHEMICAL NAME AND SYNONYMS: Ammonia

CAS #: 7664-41-7

DOT I.D. No: UN 1005 RQ 100 (45.4)

DOT HAZARD CLASS: Division 2.2; (for domestic transportation only)

CHEMICAL FORMULA: NH₃

CHEMICAL FAMILY: Nitrogen Hydride

ISSUE DATE AND REVISIONS: Revised July 2006

SECTION 2. HEALTH HAZARD DATA

EMERGENCY OVERVIEW: Ammonia is a flammable, pungent gas which is approximately 1/2 the weight of air. Inhalation and Contact: Corrosive and irritating to the skin, eyes, upper respiratory system and all mucosal tissue. Depending on the concentration inhaled, it may cause burning sensations, coughing, wheezing, shortness of breath, headache, nausea with eventual collapse. Mild concentrations of vapor will cause dermatitis or conjunctivitis. Higher concentrations of vapor or liquid contact will cause caustic-like dermal burns and inflammation and swelling of the eyes with possible loss of vision.

Contact with the rapidly evaporating liquid could cause frostbite or cryogenic "burns".

TIME WEIGHTED AVERAGE EXPOSURE LIMIT: TWA = 25 Molar PPM; STEL = 35 Molar PPM (ACGIH 2005). OSHA 2005 lists a PEL (8 hr. TWA) of 50 Molar PPM.

TOXICOLOGICAL PROPERTIES:

Inhalation: Affects the upper airway (larynx and bronchi) causing caustic-like burning resulting in edema and chemical pneumonitis. If it enters the deep lung, pulmonary edema will result.

Contact: Toxic level exposure to dermal tissue causes caustic-like burns and skin lesions resulting in early necrosis and scarring. Burns to the eye result in lesions and possible loss of vision.

Frostbite effects are the change in the color of the skin to gray or white possibly followed by blistering.

Ammonia is not listed in the IARC, NTP or by OSHA as a carcinogen or potential carcinogen.

Persons in ill health where such illness would be aggravated by exposure to Ammonia should not be allowed to work with or handle this product.

RECOMMENDED FIRST AID TREATMENT: PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO AMMONIA. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF CONTAINED BREATHING APPARATUS AND BE COGNIZANT OF FIRE AND EXPLOSION HAZARD.