APPENDIX C

NFPA definition of a HEALTH HAZARD

Hazard	Exposure	LD_{50}	LC_{50}
4	**Health Hazard 4 usually includes: Materials that, under emergency conditions, can be lethal.**	Materials whose LD_{50} for acute dermal toxicity is ≤ 40 mg/kg. Materials whose LD_{50} for acute oral toxicity ≤ 5 mg/kg.	Gases whose LC_{50} for acute inhalation toxicity is ≤ 1000 ppm. Any liquid whose saturated vapor concentration at 20°C is equal to or 10 times its LC_{50} for acute inhalation toxicity, if its LC_{50} is ≤ 1000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is ≤ 0.5 mg/L.
3	**Health Hazard 3 usually includes: Materials that,under emergency conditions, can cause serious or permanent injury.** Materials that are corrosive to the respiratory tract; Materials that are corrosive to the eye or cause irreversible corneal opacity; Materials that are severely irritating and/or corrosive to the skin.	Materials whose LD_{50} for acute dermal toxicity is > 40 mg/kg but ≤ 200 mg/kg. Materials whose LD_{50} for acute oral toxicity is > 5 mg/kg but ≤ 50 mg/kg.	Gases whose LC_{50} for acute inhalation toxicity is > 1000 ppm but ≤ 3000 ppm. Any liquid whose saturated vapor concentration at 20°C is equal to or greater than its LC_{50} for acute inhalation toxicity, if its LC_{50} is ≤ 3000 ppm and that does not meet the criteria for degree of hazard 4. Dusts and mists whose LC_{50} for acute inhalation toxicity is > 0.5 mg/L but ≤ 2 mg/L.
2	**Health Hazard 2 usually includes: Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.** Materials that are respiratory irritants; Materials that cause irritating by reversible injury to the eyes; Materials that are primary skin irritants or sensitizers.	Materials whose LD_{50} for acute dermal toxicity is > 200 mg/kg but ≤ 1000 mg/kg. Materials whose LD_{50} for acute oral toxicity is > 50 mg/kg but ≤ 500 mg/kg.	Gases whose LC_{50} for acute inhalation toxicity is > 3000 ppm but ≤ 5000 ppm. Any liquid whose saturated vapor concentration at 20°C is equal to or greater than 1/5 its LC_{50} for acute inhalation toxicity, if its LC_{50} is ≤ 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Dusts and mists whose LC_{50} for acute inhalation toxicity is > 2 mg/L but ≤ 10 mg/L.
1	**Health Hazard 1 usually includes: Materials that, under emergency conditions, can cause significant irritation.** Materials that are slightly irritating to the respiratory tract, eyes and skin.	Materials whose LD_{50} for acute dermal toxicity is > 1000 mg/kg but ≤ 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is > 500 mg/kg but ≤ 2000 mg/kg.	Gases and vapors whose LC_{50} for acute inhalation toxicity is > 5000 ppm but ≤ 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is > 10 mg/L but ≤ 200 mg/L.
0	**Health Hazard 0 usually includes: Materials that, under emergency conditions, would offer no hazard beyond ordinary combustible materials.** Essentially nonirritating to the respiratory tract, eyes and skin.	Materials whose LD_{50} for acute dermal toxicity is > 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is > 2000 mg/kg.	Gases and vapors whose LC_{50} for acute inhalation toxicity is > 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is > 200 mg/L.

LD_{50} Quantity of toxic material necessary to cause death in 50% of test subjects (usually mouse or rat). This value is usually associated with a dose received through injection, ingestion or dermal contact and is quantified by body weight of a specific animal.

LC_{50} Quantity of toxic material in air which is necessary to cause death in 50% of the test subjects (usually mouse or rat). This value is associated with inhalation risks.