

C2



MATERIAL SAFETY DATA SHEET

IONOX[®] HC2

COMPANY NAME AND ADDRESS:

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NFPA Rating: H=2, F=1, R=0

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(24 HOUR) EMERGENCY PHONE: CHEMTREC (800) 424-9300

EFFECTIVE: February 12, 2001
SUPERSEDES: September 17, 1997

INGREDIENTS:

Regulatory Information:

All ingredients used in IONOX[®] HC2 are TSCA listed.

None of the ingredients are regulated under Section 313 of Title III of SARA of 1986, and 40 CFR 372.45.

None of the ingredients are regulated as a TTO (Total Toxic Organic under 40 CFR 413.02).

None of the ingredients are regulated as a Hazardous substance per 40 CFR 302 or 40 CFR 372.65.

Material or Component	OSHA PEL	ACGIH TLV	Approx. %
2-Amino ethanol	3 ppm	3 ppm	< 2 %
No other ingredients identified by OSHA as hazardous are known to be present, or the ingredients present are below levels specified as hazardous by OSHA (29 CFR 1910.1200).			

PHYSICAL DATA:

Boiling Point	110 - 112°C	Specific Gravity @ 60°F	1.060 - 1.080
Vapor Pressure (Calculated)	< 10 mm Hg at STP	Surface Tension (100% solution)	17 - 27 dynes/cm
Vapor Density (Calculated)	2.0 (Air = 1)	pH (100% solution)	9.6 - 10.8
Solubility in Water	Complete	Odor	Mild / Low
Appearance	Clear to light amber		

FIRE AND EXPLOSION HAZARD DATA:

Flash Point (Tag CC)	None to boiling	Flammable Limits in Air	None established
Extinguisher Media	Water spray, dry chemical, carbon dioxide, and/or foam.		
Special Fire Fighting Procedures	Fire fighter should have eye protection and wear self contained breathing apparatus.		
Unusual Fire and Explosion Hazards	Vapors are heavier than air and may travel to a source of ignition and flash back.		

PHYSICAL HAZARDS / REACTIVITY DATA:

Stability	Stable	Conditions to Avoid	High temperatures
Incompatibility	Strong acids and oxidizers	Hazardous Polymerization	Will not occur
Hazardous Decomposition	Combustion produces unidentified organics, oxides of carbon, carbon dioxide, carbon monoxide, ammonia, and nitrogen oxides.		
Other	Do not add nitrites due to possible formation of nitrosoamines.		

SPECIAL PRECAUTIONS FOR SAFE HANDLING AND USE:

Handling and Storage	Store in cool (60-80°F), ventilated area, out of direct sunlight, away from ignition sources. Keep containers tightly closed.
Other Precautions	Avoid acids and oxidizers. No smoking or eating in handling areas.
Material Release or Spill	Pick up spill on absorbent, non-combustible material. Wipe area with water to remove last traces.
Disposal of Material	Consult your local, federal, state, county, or city regulations on proper methods of disposal.

HEALTH HAZARD DATA:

Route of Entry Inhalation: Yes Skin: Yes Ingestion: Yes

Health Hazards (Acute and Subchronic)Proprietary Alcohol

Oral Animal feeding studies of this material at relatively high levels have demonstrated systemic toxicity and reproductive toxicity in males with no reproductive effects noted in females.

Dermal Animal studies of this material have shown no effects at typical (short term) exposure levels. These studies have shown that repeated, cumulative, high level dermal contact may cause decrease male fertility, with no reproductive effects noted in females.

Inhalation Animal studies of this material have shown that prolonged or repeated inhalation of extremely high (saturation) concentrations of the alcohol showed weight loss and lowered sperm production in male rats, with no significant weight loss and no reproductive effects noted on female rats at any level. These same studies have shown that at moderately high levels, spasms and "drunkenness-like" symptoms were noted.

To date, there is no indication of any adverse chronic health effects in humans from this material in over 40 years of industrial use. The significance of this data from laboratory animal studies may be highly speculative and may not be a good indicator for predicting a human health hazard.

Health Hazards (Chronic)2-Amino ethanol

Animal inhalation testing indicates exposure to high vapor or mist concentrations causes pulmonary liver, kidney and skin injury. At recommended usage concentrations, the 2-amino ethanol concentration will be less than 2%.

No other data available on remaining ingredients.

Chemical Ingredients Listed as a Carcinogen or Potential Carcinogen

National Toxicology Program: No

IARC Monographs: No

OSHA Regulated: No

Signs and Symptoms of Exposure

Moderately irritating to eyes. Slightly irritating to skin. Excessive exposure to vapor may cause dizziness, drunkenness, blurred vision, nausea, vomiting, or headaches. May be harmful if ingested.

Emergency and First Aid Procedures for Overexposure

Inhalation Remove person to fresh air. If necessary, restore and support breathing. If breathing is difficult, give oxygen. Get immediate medical attention.

Eyes Immediately flush with water for 15 minutes while lifting eyelids and rolling eyes. Get immediate medical attention.

Skin Wash promptly with soap and water. May dry out skin. Get medical attention if irritation occurs. Remove contaminated clothing. Launder clothing before reuse.

Ingestion Get immediate medical attention. If conscious and medical help is not readily available, give 1 to 2 glasses of water and keep at rest. Never attempt to give anything by mouth to an unconscious person. Induce vomiting only at the advice of a physician.

SPECIAL PROTECTION AND CONTROL MEASURES:

Respiratory Protection This product is normally used in self-contained, well ventilated industrial cleaning devices. Under these conditions, personal respiratory protection is not typically required. Should extended, direct exposure to misting or vapors occur, use of a NIOSH approved organic respirator is recommended.

Ventilation Provide general or local exhaust ventilation for areas of use.

Protective Gloves Use chemical resistant gloves.

Eye Protection Chemical goggles, safety glasses, or face shield should be worn when handling this material. Contact lenses should not be worn when handling this material.

Other Protective Equipment Eye fountain and/or safety shower should be readily available. Long sleeves, aprons, or other personal clothing protection is suggested to avoid skin exposure.

Work Hygiene Practices In case of skin contact, rinse with water as soon as possible. Do not eat, drink, or smoke when handling this material.

Note: Personal protection information given is based upon the general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

The data contained herein is based on information currently available to Kyzen Corporation and is believed to be factual. As a formulator, blender, and compounder, Kyzen Corporation does not manufacture the raw materials used in this product and correspondingly relies on information provided to Kyzen Corporation from material safety data sheets on the specific raw materials in the construction of this material safety data sheet. Such information is to the best of Kyzen Corporation's knowledge and belief to be accurate and reliable as of the date of this MSDS. HOWEVER, NO REPRESENTATION, WARRANTY OR GUARANTEE IS MADE AS TO THE ACCURACY, RELIABILITY, OR COMPLETENESS. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular application. This information is not intended to be all-inclusive as to the manner and conditions of use, handling and storage. Other factors may involve other or additional safety or performance considerations. This data is not to be taken as a warranty or representation of which Kyzen Corporation assumes legal responsibility.

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