

QUANTUM CHEMICAL CORPORATION

USI Division

MATERIAL SAFETY DATA SHEETALCOHOL, USPMSDS NO. 1100/1105
ISSUE DATE: 4/28/92

EMERGENCY NUMBERS:

QUANTUM (713) 479-2873
CHEMTREC (800) 424-9300

PRODUCT INFORMATION:

QUANTUM (800) 543-5900

WARNING! FLAMMABLE. KEEP AWAY FROM HEAT, SPARKS, FLAME AND ALL OTHER IGNITION SOURCES. VAPOR MAY FORM FLAMMABLE MIXTURES WITH AIR. MAY BE HARMFUL OR FATAL IF SWALLOWED. May irritate body tissues. Use with adequate ventilation. Avoid breathing vapor. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

SECTION I - IDENTIFICATIONPRODUCT: Alcohol, USP, Ethyl Alcohol, 190 Proof Punctilious^R

SYNONYMS: Ethyl Alcohol - 190 Proof; Ethanol

CHEMICAL FAMILY: Alcohol

CAS RN: Mixture, no single CAS number applies

SECTION II - INGREDIENTS

COMPOSITION	NOMINAL %	PEL/TLV	HAZARD
Ethyl Alcohol (Ethanol) CAS RN: 64-17-5	92.5	TWA: 1000 ppm	Flammable; Nervous system depressant
Water CAS RN: 7732-18-5	7.5	None	None noted

SECTION III - HEALTH INFORMATION

For Pure Ethyl Alcohol:

INHALATION: Exposure to over 1000 ppm may cause headache, drowsiness and lassitude, loss of appetite, inability to concentrate and irritation of the throat. No evidence of teratogenicity (birth defects) was noted following inhalation exposure by pregnant rats of airborne vapor concentrations of up to 16,000 ppm for 7 hours on days 1 through 19 of gestation. In the same study, pregnant rats exposed to 20,000 ppm showed severe narcosis; offspring of these rats did not show clear evidence of increased incidence of abnormalities.

ISSUE DATE: 4/28/92

MSDS PAGE TWO OF SIX

USI MSDS NO. 1100/1105

ALCOHOL USP

SECTION III - HEALTH INFORMATION (CONTINUED)

INGESTION: Can cause depression of central nervous system, nausea, vomiting, diarrhea.

NOTE: Ingestion of alcoholic beverages by pregnant women is associated with "fetal alcohol syndrome" in offspring. The International Agency for Research on Cancer (IARC) has reported a relationship between drinking alcoholic beverages and cancer of the oral cavity, pharynx, larynx, esophagus and liver.

EYE CONTACT: Liquid or vapor may cause irritation.

SKIN CONTACT: May cause irritation and defatting of skin on prolonged contact.

SECTION IV - OCCUPATIONAL EXPOSURE LIMITS

PEL (OSHA Permissible Exposure Limit): No OSHA PEL for this product. See Section II for PEL information on components.

TLV (ACGIH Threshold Limit Value): No ACGIH TLV for this product. See Section II for TLV information on components.

SECTION V - EMERGENCY FIRST AID PROCEDURE

FOR OVEREXPOSURE BY:

SWALLOWING: If victim is conscious and able to swallow, have victim drink water or milk to dilute. Never give anything by mouth if victim is unconscious or having convulsions. CALL A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. Induce vomiting only if advised by physician or Poison Control Center.

INHALATION: Immediately remove victim to fresh air. If victim has stopped breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY.

CONTACT WITH EYES OR SKIN: Immediately flush affected area with plenty of cool water. Eyes should be flushed for at least 15 minutes. Remove and wash contaminated clothing before reuse. GET MEDICAL ATTENTION IMMEDIATELY.

ISSUE DATE: 4/28/92

MSDS PAGE THREE OF SIX

USI MSDS NO. 1100/1105

ALCOHOL USP

SECTION VI - PHYSICAL DATA

BOILING POINT: 173°F*
MELTING POINT: -173°F*
VAPOR PRESSURE: 44.6 mm Hg @ 68°F*
SPECIFIC GRAVITY: 0.8158 @ 60°/60°F
VAPOR DENSITY (AIR=1): 1.59*
SOLUBILITY IN WATER: Complete
APPEARANCE AND COLOR: Clear and colorless

*for Pure Ethyl Alcohol

SECTION VII - FIRE AND EXPLOSION HAZARDS

FLASH POINT: 60°F ASTM D-56 (Tag Closed Cup)
AUTO-IGNITION TEMPERATURE: 685°F*
FLAMMABLE LIMITS IN AIR, % BY VOL. LOWER: 3.3*
UPPER: 19*
NFPA RATING:* HEALTH (0) FIRE (3) REACTIVITY (0)
(Does not apply to exposure hazards other than during a fire.)

*for Pure Ethyl Alcohol

FIRE FIGHTING PROCEDURES: (Note - Individuals should perform only those fire-fighting procedures for which they have been trained.) Use dry chemical, "alcohol" foam, or carbon dioxide; water may be ineffective, but water should be used to keep fire-exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Water spray may be used to flush spills away from exposures and to dilute spills to nonflammable mixtures (NFPA-49 1975).

UNUSUAL FIRE & EXPLOSION HAZARDS: Firefighters should wear self-contained breathing apparatus in the positive pressure mode with a full facepiece when there is a possibility of exposure to smoke, fumes or hazardous decomposition products.

SECTION VIII - REACTIVITY

STABILITY: Generally stable

HAZARDOUS POLYMERIZATION: Not likely

CONDITIONS & MATERIALS TO AVOID: Contact with acetyl chloride and a wide range of oxidizing agents may react violently.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide can form on incomplete combustion.

ISSUE DATE: 4/28/92

MSDS PAGE FOUR OF SIX

USI MSDS NO. 1100/1105

ALCOHOL USP

SECTION IX - EMPLOYEE PROTECTION

CONTROL MEASURES: Engineering controls should be used whenever feasible to maintain concentrations below acceptable exposure criteria (Section II and IV), including but not limited to enclosures, local ventilation and dilution ventilation.

RESPIRATORY PROTECTION: Where exposure is likely to exceed acceptable criteria use NIOSH/MSHA approved respiratory protection equipment. Respirators should be selected based on the form and concentration of contaminant in air and in accordance with OSHA (29 CFR 1910.134).

PROTECTIVE CLOTHING: Wear gloves and protective clothing which are impervious to this product for the duration of anticipated exposure if there is potential for skin contact.

EYE PROTECTION: Wear safety glasses meeting the specifications of ANSI Standard Z87.1 where no contact with the eye is anticipated. Chemical safety goggles meeting the specifications of ANSI Standard Z87.1 should be worn whenever there is the possibility of splashing or other contact with the eyes.

SECTION X - ENVIRONMENTAL PROTECTION

ENVIRONMENTAL PRECAUTIONS: Avoid uncontrolled releases of this material. Where spills are possible, a comprehensive spill response plan should be developed and implemented.

SPILL OR LEAK PROCEDURES: Wear appropriate respiratory protection and protective clothing as described in Section IX. Contain spilled material. Transfer to secure containers. Where necessary, collect using absorbent media. In the event of an uncontrolled release of this material, the user should determine if the release is reportable under applicable laws and regulations.

WASTE DISPOSAL: All recovered material should be packaged, labeled, transported and disposed of or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices.

SECTION XI - REGULATORY CONTROLS

DEPARTMENT OF TRANSPORTATION:

DOT CLASSIFICATION: Flammable Liquid
DOT PROPER SHIPPING NAME: Ethyl Alcohol
OTHER DOT INFORMATION: Identification No. UN1170
Emergency Response Guide No. 26

ISSUE DATE: 4/28/92

MSDS PAGE FIVE OF SIX

USI MSDS NO. 1100/1105

ALCOHOL USP

SECTION XI - REGULATORY CONTROLS (CONTINUED)

OTHER REGULATORY REQUIREMENTS:

ATF Distilled Spirits Act

Use of ethyl alcohol without prior payment of applicable excise tax is strictly controlled by regulations promulgated and enforced by the Bureau of Alcohol, Tobacco and Firearms, Dept. of the Treasury. Governing regulations have been defined in Title 27, Code of Federal Regulations.

Toxic Substance Control Act

This product is a mixture and each component is listed in the TSCA Inventory of Chemical Substances.

SARA Title III (Sections 311/312) Hazard Categories:

Immediate/Acute Health
Delayed/Chronic Health
Fire Hazard

New Jersey Right to Know

Ethyl alcohol is listed

Pennsylvania Right to Know

Ethanol is listed

SECTION XII - PRECAUTIONS: HANDLING, STORAGE AND USAGE

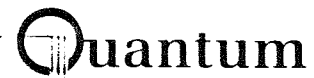
Protect container against physical damage. Detached or outside storage is preferred. Inside storage should be in an NFPA approved flammable liquids storage room or cabinet. All ignition sources should be eliminated. Smoking should be prohibited in storage areas. Electrical installations should be in accordance with Article 501 of the National Electrical Code. NFPA 30, Flammable and Combustible Liquids Code, should be followed for all storage and handling. Frequent careful leakage inspection should be done. Automatic sprinkler system should be provided. Isolate from oxidizers, chemicals capable of spontaneous heating, materials reacting with air or moisture to liberate heat, ignition sources and explosives. Consult local fire codes for additional storage information.

When contents are being transferred, the metallic container must be bonded to the receiving container and grounded to avoid static discharges. Never use pressure to empty. Replace closure securely after each opening.

Keep packaged material out of sun and away from heat. Remove closure carefully; internal pressure may be present. Keep closure up to prevent leakage.

Containers hazardous when emptied. Since emptied containers retain residual product (vapor or liquid), all precautions described on this MSDS must be observed.

MAY 04 1993



ISSUE DATE: 4/28/92

MSDS PAGE SIX OF SIX

USI MSDS NO. 1100/1105

ALCOHOL USP

SECTION XII - PRECAUTIONS: HANDLING, STORAGE AND USAGE (CONTINUED)

FOR INDUSTRIAL USE ONLY. NOT FOR HOUSEHOLD USE. NOT INTENDED OR PERMITTED FOR DRINKING BEVERAGE PURPOSES.

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Quantum Chemical Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

PREPARED BY:

ISSUE DATE: April 28, 1992

Regulatory Affairs Department
Quantum Chemical Corporation

RJS/DGH

SUPERSEDES: December 28, 1989

USI Division
Allen Research Center
11530 Northlake Drive
P. O. Box 429566
Cincinnati, OH 45249