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**CDA**

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**SECTION I**

**IDENTIFICATION**  
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**Product Name:** Ethanol, CDA-19 190 Proof Completely Denatured Alcohol

**Chemical Name:** Denatured Ethanol

**Chemical Family:** Alcohols

**Formula:** N/A (mixture)

**Common Name:** Ethanol, CDA-19 190 Proof

**Synonyms:** Completely Denatured Alcohol, Government Formula 19

**Emergency Telephone Number:** 1-800-424-9300

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**SECTION II**

**COMPOSITION INFORMATION**  
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<b>Component</b>	<b>CAS #</b>	<b>Amount</b>
Ethanol	64-17-5	88.18%
Water	7732-18-5	7.26%
Methyl isobutyl ketone	108-10-1	3.77%
Solvent naphtha (petroleum), light aliphatic	64742-89-5	0.644%

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**SECTION III**

**HAZARDS IDENTIFICATION**  
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**Appearance:** Transparent colorless.

**Odor:** Non-residual

**Physical State:** Liquid

**Hazards of Product:** WARNING! Flammable. Harmful if inhaled or swallowed. Causes eye irritation. Aspiration may cause lung damage. May cause dizziness and drowsiness. May cause liver and kidney damage.

## Effects of Single Acute Overexposure

**Inhalation:** High vapor concentrations may cause a burning sensation in the nose and throat, and stinging and watering in the eyes. At concentrations, which cause irritation, dizziness, faintness, drowsiness, nausea, and vomiting may occur. Liver and kidney damage may occur.

**Eye Contact:** May cause irritation, experienced as stinging with excess blinking and tear production. Excess redness of the conjunctiva may occur.

**Skin Contact:** Brief contact may cause slight irritation with itching and local redness. Prolonged or repeated contact may cause defatting and drying of the skin.

**Swallowing:** May cause dizziness, faintness, drowsiness, decreased awareness and responsiveness, euphoria, abdominal discomfort, nausea, vomiting, staggering gait, lack of coordination, and coma. Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury.

**Skin Absorption:** No harmful effects with normal skin. However, potentially harmful amounts of material may be absorbed across markedly damaged skin when contact is sustained, particularly with children.

## Chronic, Prolonged or Repeated Overexposure

**Effects of Repeated Overexposure:** Long-term repeated oral exposure to ethanol may result in the development of progressive liver injury with fibrosis.

**Other Effects of Overexposure:** Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the central nervous system of the fetus, producing a collection of effects, which together constitute the fetal alcohol syndrome. These include mental and physical retardation, disturbances of learning, motor and language deficiencies, behavioral disorders, and small size head. Methyl Isobutyl Ketone is toxic if aspirated. It is known to enhance the neurotoxicity of linear 6 carbon solvents.

**Medical Conditions Aggravated by Exposure:** Repeated exposure to ethanol may aggravate liver injury produced from other causes. Skin contact may aggravate an existing dermatitis.

## Potential Environmental Effects

See Section 12 for Ecological Information

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**SECTION IV****FIRST AID PROCEDURES**

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**Ingestion:** **Do not** induce vomiting. Do not give anything to drink. Obtain medical attention immediately.

**Skin:** Wash skin with soap and water.

**Inhalation:** Remove to fresh air. Give artificial respiration if not breathing. If breathing is difficult, qualified personnel may give oxygen. Obtain medical attention.

**Eyes:** Immediately flush eyes with water and continue washing for at least 15 minutes. **Do not** remove contact lenses, if worn. Obtain medical attention without delay, preferably from an ophthalmologist.

**Notes to Physician:** Symptoms vary with the alcohol level of the blood. Mild alcohol intoxication occurs at blood levels between 0.05% - 0.15% and approximately 25% of individuals will show signs of intoxication at these levels. Above 0.15% the person is definitely under the influence of ethanol and 50% - 95% of individuals at this level are clinically intoxicated. Severe poisoning occurs when the blood ethanol level is 0.3% - 0.5%. Above 0.5% the individual will be comatose and death can occur. The unabsorbed ethanol should be removed by gastric lavage after intubating the patient to prevent aspiration. Avoid the use of depressant drugs or the excessive administration of fluids. In the presence of hypoglycemia, administer 5% - 10% glucose intravenously, plus thiamine 100 mg intramuscularly. Hemodialysis is indicated if the blood ethanol is above 5 mg/ml. Naloxone may be useful to reverse clinical alcoholic coma and 0.4 - 1.2 mg intravenously may arouse ethanol-intoxicated patients. If a significant quantity of product is ingested, remove by means of gastric lavage using activated charcoal. A cuffed endotracheal tube should be used to prevent aspiration. When evacuation of the stomach is complete, 30-60 ml of Fleet<sup>®</sup> Phospho<sup>®</sup>-Soda diluted 1:4 in water may be given. Keep the patient under observation for 24 hours and check for signs of lung injury. It may require 2 - 4 weeks for resolution of lung infiltrates involving more than 30% of the lung volume.

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**SECTION V****FIRE FIGHTING MEASURES**

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**Flash Point and Method:** 54°F (12°C) Tag Closed Cup ASTM D 56  
67°F (19°C) Tag Open Cup ASTM D 1310

**Flammable Limits in Air (% by volume):** **Lower:** 3.3% (V)(Ethanol)  
**Upper:** 19.0% (V)(Ethanol)

**Autoignition Temperature:** Not currently available.

**Extinguishing Media:** Extinguish fires with water spray or apply alcohol-type foam by manufacturer's recommended techniques for large fires. Use carbon dioxide or dry chemical media for small fires.

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**SECTION V****FIRE FIGHTING MEASURES Cont'd**

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**Extinguishing Media to Avoid:** No information currently available.

**Special Firefighting Procedures:** Use water spray to cool fire-exposed containers and structures.

**Special Protective Equipment for Firefighters:** Use self-contained breathing apparatus and protective clothing.

**Unusual Fire and Explosion Hazards:** Vapors form from this product and may travel or be moved by air currents and ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharges or other ignition sources at locations distant from product handling point. Vapors from this material may settle in low or confined areas or travel a long distance to an ignition source and flash back explosively. Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Use proper bonding and grounding during product transfer as described in National Fire Protection Association Document NFPA 77.

This material may produce a floating fire hazard in extreme fire conditions. Flame may be invisible. Approach fire with caution. See Section 8 – Engineering Controls

**Hazardous Combustion Products:** Burning can produce the following products: Carbon monoxide and/or carbon dioxide. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.

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**SECTION VI****ACCIDENTAL RELEASE MEASURES**

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**Steps to be Taken if Material is Released or Spilled:** Extinguish and do not turn on any ignition source until the area is determined to be free from fire or explosion hazard. Small spills can be flushed with large amounts of water; larger spills should be collected for disposal. Observe government regulations.

**Personal Precautions:** Wear suitable protective equipment.

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**SECTION VII****HANDLING & STORAGE**

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Keep away from heat, sparks and flame. Avoid breathing vapor. Do not swallow. Avoid contact with eyes. Keep container closed. Use with adequate ventilation. Vapors form from this product and may travel or be moved by air currents and ignited by pilot lights, other flame, smoking, sparks, heaters, electrical equipment, static discharges or other ignition sources at locations distant from product handling point and may flashback explosively. Wash thoroughly after handling.

**FOR INDUSTRY USE ONLY**

**Ventilation:** General (mechanical) room ventilation is expected to be satisfactory where this product is stored and handled in closed equipment. Special, local ventilation is needed at points where vapors can be expected to escape to the workplace air.

**Other Precautions:** Vapor may settle in low or confined areas, or travel a long distance to an ignition source and flash back explosively.

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**SECTION VIII EXPOSURE CONTROLS & PERSONAL PROTECTION**

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<u>Component</u>	<u>Exposure Limit</u>	<u>Skin</u>	<u>IH State</u>
Ethanol	1000 ppm TWA8 ACGIH 1000 ppm TWA8 OSHA 1900 mg/m3 TWA8 OSHA		
Methyl isobutyl ketone	205 mg/m3 TWA8 ACGIH 50 ppm TWA8 ACGIH 307 mg/m3 STEL ACGIH 75 ppm STEL ACGIH 205 mg/m3 TWA8 OSHA - Vacated 50 ppm TWA8 OSHA - Vacated 300 mg/m3 STEL OSHA - Vacated 75 ppm STEL OSHA – Vacated 100 ppm TWA8 OSHA 410 mg/m3 TWA8 OSHA		

In the Exposure Limits Chart above, if there is no specific qualifier (i.e., Aerosol) listed in the Form Column for a particular limit, the listed limit includes all airborne forms of the substance that can be inhaled.

A “Yes” in the Skin Column indicates a potential significant contribution to overall exposure by the cutaneous (skin) route, including mucous membranes and the eyes, either by contact with vapors or by direct skin contact with the substance. A “Blank” in the Skin Column indicates that exposure by the cutaneous (skin) route is not a potential significant contributor to overall exposure.

**PERSONAL PROTECTION**

**Respiratory Protection:** Use self-contained breathing apparatus in high vapor concentrations.

**Ventilation:** General (mechanical) room ventilation is expected to be satisfactory where this product is stored and handled in closed equipment. Special, local ventilation is needed at points where vapors can be expected to escape to the workplace air.

**Protective Gloves:** Neoprene

**Eye Protection:** Safety Glasses.

**Other Protective Equipment:** Eye Bath, Safety Shower.

## ENGINEERING CONTROLS

**Process Hazard:** Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into hot equipment under a vacuum, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated-temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions. Further information is available in a technical bulletin entitled "Ignition Hazards of Organic Chemical Vapors."

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## SECTION IX PHYSICAL & CHEMICAL PROPERTIES

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<b>Appearance:</b> Transparent colorless.	<b>Odor:</b> Non-residual
<b>Physical State:</b> Liquid	<b>Percent Volatiles: (By wt.)</b> 100
<b>Boiling Point:</b> (760 mm Hg) 79°C (174°F)	<b>Specific Gravity:</b> (H <sub>2</sub> O=1) 0.8120 20/20°C
<b>Freezing Point:</b> < -85°C (< -121°F)	<b>Vapor Pressure @ 20°C:</b> 6.7 kPa 50 mmHg
<b>Vapor Density: (Air=1)</b> 1.5	<b>Evaporation Rate (Butyl Acetate=1):</b> 3.8
<b>pH:</b> No currently available.	<b>Melting Point:</b> NA
<b>Solubility: (In water by wt.)</b> complete @ 20°C	100%
<b>Flash Point and Method:</b> 54°F (12°C) 67°F (19°C)	Tag Closed Cup ASTM D 56 Tag Open Cup ASTM D 1310

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## SECTION X STABILITY & REACTIVITY

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**Incompatibility (materials to avoid):** Concentrated nitric or sulfuric acid. Strong oxidizing agents.

**Hazardous Polymerization:** Will not occur. **Inhibitors/Stabilizers:** None known.

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**SECTION XI****TOXICOLOGICAL INFORMATION**

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**SIGNIFICANT DATA WITH POSSIBLE RELEVANCE TO HUMANS**

The International Agency for Research on Cancer (IARC) has determined that the consumption of alcoholic beverages is causally related to the occurrence of malignant tumors of the oral cavity, pharynx, larynx, esophagus and liver in humans. The carcinogenic response attributed to drinking alcoholic beverages has not been verified in studies with laboratory animals. Established uses of denatured ethanol and non-beverage uses of pure ethanol are not considered to pose any significant cancer hazard. Ethanol has been shown to have a weak skin sensitizing potential in a very small percentage of the population. Methyl Isobutyl Ketone did not produce evidence of adverse effects on the reproductive performance of either male or female rats when exposed to air concentrations up to 2000 ppm in a well-conducted 2-generation reproduction toxicity test. Air concentrations of 2000 ppm produced clinical signs of toxicity in neonatal pups (postnatal day 21 to 28, the post weaning period) during the 6-hour exposure regimen but were not observed in older pups. These signs were consistent with central nervous system depression, equilibrium dysfunction and irritation. In this study the NOAEL for parental toxicity was considered to be 1000 ppm; for neonatal toxicity, 1000 ppm; and for reproductive toxicity greater than 2000 ppm. In tests with laboratory animals, Methyl Isobutyl Ketone produced evidence of embryofetal toxicity at exposure levels, which were toxic to mothers, but no evidence was obtained for teratogenicity, or for embryofetal toxicity at levels, which did not affect the mothers. Results from five mutagenicity assays with different genetic endpoints indicate that Methyl Isobutyl Ketone does not produce activity typical of that of chemical mutagens.

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**SECTION XII****ECOLOGICAL INFORMATION**

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**Environmental Fate:** Partial information may be available, call Humco.

**Ecotoxicity:** Partial information may be available, call Humco.

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**SECTION XIII****DISPOSAL CONSIDERATIONS**

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**Waste Disposal Method:** Incinerate in a furnace where permitted under Federal, State, and local regulations. Dispose in accordance with all applicable Federal, State, Provincial, and local environmental regulations. Empty containers should be recycled or disposed of through an approved waste management facility.

**Disposal Considerations:** Disposal methods identified are for the product as sold. For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permissible under applicable rules, regulations and/or laws governing your location.

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**SECTION XIV****TRANSPORT INFORMATION**

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**NON-BULK****Proper Shipping Name:** Flammable Liquid N.O.S. (Ethanol, Methyl Isobutyl Ketone)**Technical Name:** Denatured Ethanol**ID Number:** UN 1993**Hazard Class:** 3**Packing Group:** PG II**BULK****Proper Shipping Name:** Flammable Liquid N.O.S. (Ethanol, Methyl Isobutyl Ketone)**Technical Name:** Denatured Ethanol**ID Number:** UN 1993**Hazard Class:** 3**Packing Group:** PG II

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through your UCC sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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**SECTION XV****REGULATORY INFORMATION**

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**FEDERAL/NATIONAL**

CERCLA (Comprehensive Environmental Response Compensation, and Liability Act of 1980 Section 103) The following components of this product are specifically listed as hazardous substances in 40 CFR 302.4 (unlisted hazardous substances are not identified) and are present at levels which could require reporting.

<b>COMPONENT</b>	<b>CAS NUMBER</b>	<b>AMOUNT</b>
Methyl Isobutyl Ketone	108-10-1	<= 3.7700%
Cyclohexane	110-82-7	<= 0.0521%
Hexane	110-54-3	<= 0.0093%
Methanol	67-56-1	<= 0.0060%
Acetaldehyde	75-07-0	<= 0.0010%
Acetone	67-64-1	<= 0.0002%

**Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III Sections 302 & 304**

The following components of this product are listed as extremely hazardous substances in 40 CFR Part 355 and are present at levels which could require reporting and emergency planning: None.



<b>COMPONENT</b>	<b>CAS NUMBER</b>	<b>AMOUNT</b>
Ethanol	64-17-5	<= 88.1800%
Methyl Isobutyl Ketone	108-10-1	<= 3.7700%
Acetaldehyde	75-07-0	<= 0.0001%

**New York (Hazardous Substances Bulk Storage Act)**

New York State Bulk Storage Regulations (6 NYCRR Parts 595-599) This product is covered by 6 NYCRR for Bulk Storage and Release Reporting and Response. Technical guidance and recommended practices are as follows: **Storage System Design** should comply with current versions of the applicable reference documents cited in NYS/DEC Chemical Bulk Storage Regulations Sections 598.1 (j), 598.2, 598.3 and 598.5 (for existing tanks) or Sections 599.1 to 599.10 (for new or substantially modified tanks). **Inspections & Maintenance** Inspection and maintenance procedures and testing of equipment should comply with NYS/DEC Regulations Sections 598.6 to 598.1 **Transfer & Unloading** These operations should comply with NYS/DEC regulations, Section 598.4.

**California Proposition 65 (Safe Drinking Water & Toxic Enforcement Act of 1986)**

This product contains the following chemical(s) known to the state of California to cause cancer.

<b>COMPONENT</b>	<b>CAS NUMBER</b>	<b>AMOUNT</b>
Acetaldehyde	75-07-0	<= 0.1000 ppm

**California SCAQMD Rule 443.1 (South Coast Air Quality management District Rule 443.1, Labeling of materials Containing Organic Solvents)**

**VOC:** 801 g/l; Vapor Pressure 50 mm Hg @ 20°C

This section provides selected regulatory information on this product including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations and laws relating to the product being used.

**SECTION XVI DEGREE OF HAZARD**

**Degree of Hazard**

4 - Extreme	Flammability	4
3 - High	Health	2
2 - Moderate	Reactivity	1
1 - Slight	Special Hazard	0
0 – Insignificant		

The opinions expressed herein are those of qualified experts within Humco. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the

use of this information and the conditions of the use of the product are not under the control of Humco, it is the user's obligation to determine conditions of safe use of the product.