1. PRODUCT DESCRIPTION

   Product Name: Ethanol, 95%
   Product Code(s): 15-4708A, 15-4708CA, 15-4724A, 89-2301, 892305,
   19-1184, 19-1176, 15-4725, 19-1177, 76-6200, 86-1281, 86-1283, 86-1285,
   84-1135, 10-1026, 10-1036, 84-0887
   Size: 1 oz, 75mL, 350mL, 500mL, 4L, 20L, various
   Chemical Name: Ethanol, 95%
   CAS Number: Does not apply, product is a mixture
   Formula: See Section 2
   Synonyms: Alcohol, Ethyl alcohol
   Distributor: Carolina Biological Supply Company
               2700 York Road
               Burlington, NC 27215
   Chemical Information: 800-227-1150 (8am-5pm (ET) M-F)
   Chemtrec (Transportation Spill Response 24 hours): 800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

   Principal Hazardous Components:
   Ethanol (CAS# 64-17-5) 95%
   Methyl isobutyl ketone (denaturant)(CAS# 108-10-1) 4%
   TLV and PEL units:
   Ethyl alcohol: ACGIH-TLV 1,000 ppm (TWA) OSHA-PEL 1,000 ppm (TWA)
   Methyl isobutyl ketone: ACGIH-TLV 50 ppm (TWA), 75 ppm (STEL)
   OSHA-PEL 100 ppm (TWA)

3. HAZARD IDENTIFICATION

   Emergency Overview: Concentrations below 1,000 ppm usually produce no
   signs of intoxication. Exposure to concentrations over 1,000 ppm may
   cause headache, irritation of the eyes, nose, and throat, and if
   continued for an hour, drowsiness and lassitude, loss of appetite and
   inability to concentrate.

4. FIRST AID MEASURES

   Emergency and First Aid Procedures:
   Eyes - Flush with water for at least 15 minutes, raising and lowering
   eyelids occasionally. Get medical attention if irritation persists.
   Skin - Thoroughly wash exposed area for at least 15 minutes. Remove
   contaminated clothing. Launder contaminated clothing before reuse. Get
   medical attention if irritation persists.
   Ingestion - If swallowed, if conscious, give plenty of water.
   Immediately call a physician or poison control center. Never give
   anything by mouth to an unconscious person.
   Inhalation - Remove to fresh air. Give oxygen if breathing is
   difficult; give artificial respiration if breathing has stopped. Keep
   person warm and quiet, and get medical attention.

5. FIREFIGHTING PROCEDURES

   Flash Point (Method Used): 13-16 C (Closed Cup) (Ethanol)
   NFPA Rating: Health: 2
   Fire: 3
   Reactivity: 0
   Extinguisher Media: Dry chemical, carbon dioxide, or alcohol-resistant
   foam. Water may be ineffective.
   Flammable Limits in Air % by Volume: Ethanol: LEL 3.3%, UEL 19%
   Autoignition Temperature: 363°C
Special Firefighting Procedures:
Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.

Unusual Fire and Explosion Hazards: Extremely flammable. Vapors are heavier than air and can travel distances to ignition source and flash back.

6. SPILL OR LEAK PROCEDURES
Steps to be Taken in Case Material is Released or Spilled: Eliminate all sources of ignition. Contain spilled material. Dilute to nonflammable mixture with water. Ventilate the spill area. Contain and collect for disposal.

7. SPECIAL PRECAUTIONS
Precautions to be Taken in Handling or Storing: This material should be kept in an area suitable for the storage of flammable liquids. Bond and ground containers when transferring liquid.
Other Precautions: Keep oxidizing materials and strong acids away. Wear splash-proof chemical safety goggles and rubber gloves at all times during cleanup process. Take care in handling empty containers as residue can present fire and explosion hazards.

8. SPECIAL PROTECTION INFORMATION
Respiratory Protection (Specify Type):
A NIOSH/MSHA chemical cartridge respirator should be worn if PEL or TLV is exceeded.
Ventilation:
Local Exhaust: For high concentrations
Mechanical (General): Required
Special: Explosion proof if within explosion limits
Other: No
Protective Gloves:
Rubber, neoprene, PVC, or equivalent.
Eye Protection:
Splash proof chemical safety goggles should be worn at all times.
Other Protective Clothing or Equipment:
Lab apron, eye wash, and safety shower.

9. PHYSICAL DATA
Molecular Weight: For ethanol: 46.07
Melting Point: -114.1°C
Boiling Point: Ethanol 78.5°C
Vapor Pressure: Ethanol 43 mmHg at 20°C
Vapor Density (Air=1): Ethanol 1.59
Specific Gravity (H2O=1): 0.81 at 20°C
Percent Volatile by Volume: 100%
Evaporation Rate (BuAc=1): 3.3
Solubility in Water: Complete
Appearance and Odor: Clear liquid with fruity or alcohol odor

10. REACTIVITY DATA
Stability: Stable
Conditions to Avoid: N/A
Incompatibility (Materials to Avoid): Strong oxidizing agents.
Hazardous Decomposition Products: Carbon dioxide. Carbon monoxide
Hazardous Polymerization: Will not occur
11. TOXICITY DATA
Toxicity Data:
Ethanol: Oral Rat LD50: 7060 mg/kg; ihl-rat LC50: 20,000 ppm/10H
Methyl isobutyl ketone: Oral Rat LD50: 2080 mg/kg
Effects of Overexposure:
Acute: See section 3
Chronic: Chronic: Ethyl alcohol: Mutation data cited. Reproductive effects data cited. Tumorigenic data cited. Not listed as causing cancer by IARC, NTP, or OSHA.
Methyl isobutyl ketone: No chronic effects data found. Not listed as causing cancer by IARC, NTP, or OSHA.
Conditions Aggravated by Overexposure: Pre-existing conditions of the skin, eyes, throat, liver.
Target Organs: Eyes, liver, kidneys, nerves
Primary Route(s) of Entry: Ingestion, inhalation
12. ECOLOGICAL DATA
EPA Waste Numbers: Ethanol(D001); Methyl isobutyl ketone (U161) is considered a hazardous waste if and when it is discarded (but only present at 4% in this mixture).
13. DISPOSAL INFORMATION
Waste Disposal Methods: Dispose in accordance with all applicable Federal, State and Local regulations.
Always contact a permitted waste disposer (TSD) to assure compliance.
14. TRANSPORT INFORMATION
Description: Ethanol, 3, UN1170, II
15. REGULATORY INFORMATION
EPA TSCA Status: On TSCA Inventory
Hazard Category for SARA Section 311/312 Reporting: Acute Fire

<table>
<thead>
<tr>
<th>Product or Components</th>
<th>SARA Sec. 313</th>
<th>SARA EHS</th>
<th>Chemicals</th>
<th>CERCLA</th>
<th>RCRA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Methyl isobutyl ketone</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>5000</td>
<td>Yes</td>
</tr>
</tbody>
</table>

16. ADDITIONAL INFORMATION
The information provided in this Material Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Carolina Biological Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the Material Safety Data Sheet. Any employer must carefully assess the applicability of any information contained herein in regards to the particular use to which the employer puts the material.
Glossary
ACGIH........American Conference of Governmental Industrial Hygienists
CAS Number..Chemical Abstracts Service Number
CERCLA......Comprehensive Environmental Response, Compensation, and Liability Act