1 Identification

· Product identifier

· Trade name: ETHYL ALCOHOL, ANHYDROUS (ETHANOL) - 200 PROOF

· Article number: 15055, 15058, 15056

· CAS Number:
  64-17-5

· EC number:
  200-578-6

· Index number:
  603-002-00-5

· Relevant identified uses of the substance or mixture and uses advised against
  No further relevant information available.

· Application of the substance / the preparation Laboratory chemicals

· Details of the supplier of the safety data sheet

· Manufacturer/Supplier:
  Electron Microscopy Sciences
  1560 Industry Road
  USA-Hatfield, PA 19440
  Tel: 215-412-8400  Fax: 215-412-8450
  email: sgkcck@aol.com
  www.emsdiasum.com

· Information department: Product safety department

· Emergency telephone number:
  ChemTrec 1-800-424-9300 Contract CCN7661
  1-703-527-3887

2 Hazard(s) identification

· Classification of the substance or mixture

  GHS02 Flame

  H225 Highly flammable liquid and vapour.

  GHS07

  H302 Harmful if swallowed.
  H312 Harmful in contact with skin.
  H315 Causes skin irritation.
  H320 Causes eye irritation.

· Classification according to Directive 67/548/EEC or Directive 1999/45/EC

  Harmful
  Harmful in contact with skin and if swallowed.

  Irritant
  Irritating to eyes and skin.

  Highly flammable
  Highly flammable.
Trade name: ETHYL ALCOHOL, ANHYDROUS (ETHANOL) - 200 PROOF

- Information concerning particular hazards for human and environment: Not applicable.

- Label elements

- Labelling according to EU guidelines:
The product has been classified and marked in accordance with directives on hazardous materials.

- Code letter and hazard designation of product:

  Harmful
  Highly flammable

- Risk phrases:
  Highly flammable.
  Harmful in contact with skin and if swallowed.
  Irritating to eyes and skin.

- Safety phrases:
  Keep container in a well-ventilated place.
  Keep away from heat.
  Wear suitable protective clothing and gloves.
  This material and its container must be disposed of as hazardous waste.

- Classification system:

- NFPA ratings (scale 0 - 4)

  Health = 2
  Fire = 3
  Reactivity = 0

- HMIS-ratings (scale 0 - 4)

  HEALTH 2
  FIRE 3
  REACTIVITY 0

- Other hazards

- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.

3 Composition/information on ingredients

- Chemical characterization: Substances
  - CAS No. Description
    64-17-5 Ethyl Alcohol, Absolute, 200 Proof
    Reagent, ACS (Ethanol)
    15055
  - Identification number(s)
  - EC number: 200-578-6
  - Index number: 603-002-00-5
4 First-aid measures

- Description of first aid measures
  - General information:
    Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - After inhalation: In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact: Immediately wash with water and soap and rinse thoroughly.
  - After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - After swallowing: Immediately call a doctor.
  - Information for doctor:
    - Most important symptoms and effects, both acute and delayed No further relevant information available.
    - Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
  - Suitable extinguishing agents:
    CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- Special hazards arising from the substance or mixture No further relevant information available.
- Advice for firefighters
  - Protective equipment: No special measures required.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.
- Environmental precautions:
  Dilute with plenty of water.
  Do not allow to enter sewers/surface or ground water.
- Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

- Handling:
  - Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of aerosols.
  - Information about protection against explosions and fires:
    Keep ignition sources away - Do not smoke.
    Protect from heat.
    Protect against electrostatic charges.
Trade name: ETHYL ALCOHOL, ANHYDROUS (ETHANOL) - 200 PROOF

- Conditions for safe storage, including any incompatibilities
- Storage:
  - Requirements to be met by storerooms and receptacles: Store in a cool location.
  - Information about storage in one common storage facility: Not required.
- Further information about storage conditions:
  Keep receptacle tightly sealed.
  Store in cool, dry conditions in well sealed receptacles.
  Protect from heat and direct sunlight.
- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.

- Control parameters
- Components with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Component</th>
<th>PEL</th>
<th>REL</th>
<th>TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5 Ethyl Alcohol, Absolute, 200 Proof Reagent, ACS (Ethanol) 15055</td>
<td>Long-term value: 1900 mg/m³, 1000 ppm</td>
<td>Long-term value: 1900 mg/m³, 1000 ppm</td>
<td>Short-term value: 1880 mg/m³, 1000 ppm</td>
</tr>
</tbody>
</table>

- Additional information: The lists that were valid during the creation were used as basis.

- Exposure controls
- Personal protective equipment:
  - General protective and hygienic measures:
    Keep away from foodstuffs, beverages and feed.
    Immediately remove all soiled and contaminated clothing.
    Wash hands before breaks and at the end of work.
    Avoid contact with the eyes and skin.
  - Breathing equipment:
    In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

- Protection of hands:

  ![Protective gloves]

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

  Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

  **Material of gloves**
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

  **Penetration time of glove material**
  The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
# Safety Data Sheet

**acc. to OSHA HCS**

Printing date 10/25/2013  
Reviewed on 10/25/2013

---

**Trade name:** ETHYL ALCOHOL, ANHYDROUS (ETHANOL) - 200 PROOF

---

- **Eye protection:**
  
  Tightly sealed goggles

---

## 9 Physical and chemical properties

### Information on basic physical and chemical properties

#### General Information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Fluid</td>
</tr>
<tr>
<td>Form</td>
<td>Fluid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Alcohol-like</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not determined.</td>
</tr>
<tr>
<td>pH-value</td>
<td>Not determined.</td>
</tr>
</tbody>
</table>

### Change in condition

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point/Melting range</td>
<td>-114.5 °C (-174 °F)</td>
</tr>
<tr>
<td>Boiling point/Boiling range</td>
<td>79 °C (174 °F)</td>
</tr>
<tr>
<td>Flash point</td>
<td>13 °C (55 °F)</td>
</tr>
<tr>
<td>Flammability (solid, gaseous)</td>
<td>Not flammable.</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>425 °C (797 °F)</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Auto igniting</td>
<td>Not determined.</td>
</tr>
</tbody>
</table>

### Danger of explosion

- Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

### Explosion limits

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower</td>
<td>3.5 Vol %</td>
</tr>
<tr>
<td>Upper</td>
<td>15 Vol %</td>
</tr>
</tbody>
</table>

### Vapor pressure at 20 °C (68 °F):

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>59 hPa (44 mm Hg)</td>
</tr>
</tbody>
</table>

### Density at 20 °C (68 °F):

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.789 g/cm³ (6.584 lbs/gal)</td>
</tr>
</tbody>
</table>

### Viscosity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Kinematic</td>
<td>Not determined.</td>
</tr>
</tbody>
</table>

### Organic solvents:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100.0 %</td>
</tr>
</tbody>
</table>

### VOC content:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>789.0 g/l / 6.58 lb/gl</td>
</tr>
</tbody>
</table>

---

(Contd. on page 6)
10 Stability and reactivity

· Reactivity
· Chemical stability
· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
· Possibility of hazardous reactions: No dangerous reactions known.
· Conditions to avoid: No further relevant information available.
· Incompatible materials: No further relevant information available.
· Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

· Information on toxicological effects
· Acute toxicity:
  · LD/LC50 values that are relevant for classification:
    64-17-5 Ethyl Alcohol, Absolute, 200 Proof
    Reagent, ACS (Ethanol)
    15055
    Oral LD50 7060 mg/kg (rat)
    Inhalative LC50/4 h 20000 mg/l (rat)
· Primary irritant effect:
  · on the skin: Irritant to skin and mucous membranes.
  · on the eye: Irritating effect.
· Sensitization: No sensitizing effects known.
· Additional toxicological information:
· Carcinogenic categories
  · IARC (International Agency for Research on Cancer)
    64-17-5 Ethyl Alcohol, Absolute, 200 Proof
    Reagent, ACS (Ethanol)
    15055
    1
  · NTP (National Toxicology Program)
    Substance is not listed.

12 Ecological information

· Toxicity
· Aquatic toxicity: No further relevant information available.
· Persistence and degradability: No further relevant information available.
· Behavior in environmental systems:
  · Bioaccumulative potential: No further relevant information available.
  · Mobility in soil: No further relevant information available.
· Additional ecological information:
· General notes:
  Water hazard class 1 (Assessment by list): slightly hazardous for water
  Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
### 13 Disposal considerations

- Waste treatment methods
  - **Recommendation:**
    Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packagings:
  - **Recommendation:** Disposal must be made according to official regulations.
  - **Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport information

- **UN-Number**
  - DOT, ADR, IMDG, IATA: UN1170
- **UN proper shipping name**
  - **DOT:** Ethanol
  - **ADR:** 1170 Ethanol (Ethyl alcohol)
  - **IMDG:** ETHANOL (ETHYL ALCOHOL)
  - **IATA:** ETHANOL

- **Transport hazard class(es)**
  - **DOT**
    - **Class:** 3 Flammable liquids.
    - **Label:** 3
  - **ADR, IMDG, IATA**
    - **Class:** 3 Flammable liquids
    - **Label:** 3
  - **Packing group**
    - DOT, ADR, IMDG, IATA: II
  - **Environmental hazards:**
    - Marine pollutant: No
  - **Special precautions for user**
    - **Warning:** Flammable liquids
  - **Severity code (Kemler):** 33
  - **EMS Number:** F-E,S-D
Trade name: ETHYL ALCOHOL, ANHYDROUS (ETHANOL) - 200 PROOF

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.
- UN "Model Regulation": UN1170, Ethanol (Ethyl alcohol), 3, II

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Sara
    - Section 355 (extremely hazardous substances): Substance is not listed.
    - Section 313 (Specific toxic chemical listings): Substance is not listed.
    - TSCA (Toxic Substances Control Act): Substance is listed.
    - Proposition 65
      - Chemicals known to cause cancer: Substance is not listed.
      - Chemicals known to cause reproductive toxicity for females: Substance is not listed.
      - Chemicals known to cause reproductive toxicity for males: Substance is not listed.
      - Chemicals known to cause developmental toxicity: Substance is listed.

- Carcinogenic categories
  - EPA (Environmental Protection Agency) Substance is not listed.
  - TLV (Threshold Limit Value established by ACGIH)
    64-17-5 Ethyl Alcohol, Absolute, 200 Proof
    Reagent, ACS (Ethanol) 15055
    A3
  - NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.
  - OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.

- Product related hazard informations:
The product has been classified and marked in accordance with directives on hazardous materials.

- Hazard symbols:

  Harmful
  Highly flammable

- Risk phrases:
  Highly flammable.
Harmful in contact with skin and if swallowed.
Irritating to eyes and skin.

· **Safety phrases:**
  - Keep container in a well-ventilated place.
  - Keep away from heat.
  - Wear suitable protective clothing and gloves.
  - This material and its container must be disposed of as hazardous waste.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent