1 Identification

- **Product identifier**
  - **Trade name:** Ethyl Alcohol Neat
  - **Part number:** N-2706-10GM
  - **CAS Number:** 64-17-5
  - **EC number:** 200-578-6
  - **Index number:** 603-002-00-5

- **Application of the substance / the mixture** Laboratory chemicals

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** ULTRA Scientific, Inc.
    250 Smith Street
    North Kingstown, RI 02852
    USA
  - **Information department:**
    Telephone: (401) 294-9400
    Fax: (401) 295-2300
    E-mail: regulatory@ultrasci.com
  - **Emergency telephone number:**
    US: (800) 424-9300
    Outside US: (703) 527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - GHS02 Flame

  Flam. Liq. 2 H225 Highly flammable liquid and vapor.

  GHS08 Health hazard

  Carc. 1A  H350 May cause cancer.

- **Label elements**
  - **GHS label elements**
    The substance is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**
    - GHS02
    - GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**
  - ethanol

(Contd. on page 2)
Safety Data Sheet
acc. to OSHA HCS

Printing date 08/18/2017
Version Number 1
Reviewed on 08/18/2017

Trade name: Ethyl Alcohol Neat

- Hazard statements
  Highly flammable liquid and vapor.
  May cause cancer.

- Precautionary statements
  Obtain special instructions before use.
  Do not handle until all safety precautions have been read and understood.
  Keep away from heat/sparks/open flames/hot surfaces. No smoking.
  Keep container tightly closed.
  Ground/bond container and receiving equipment.
  Use explosion-proof electrical/ventilating/lighting/equipment.
  Use only non-sparking tools.
  Take precautionary measures against static discharge.
  Wear protective gloves/protective clothing/eye protection/face protection.
  If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  If exposed or concerned: Get medical advice/attention.
  In case of fire: Use for extinction: CO2, powder or water spray.
  Store in a well-ventilated place. Keep cool.
  Store locked up.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

- Classification system:
  - NFPA ratings (scale 0 - 4)
    Health = 0
    Fire = 3
    Reactivity = 0
  - HMIS-ratings (scale 0 - 4)
    HEALTH 1 Health = 1
    FIRE 3 Fire = 3
    REACTIVITY 0 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 ethanol
- 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: Immediately remove any clothing soiled by the product.
  - After inhalation: Supply fresh air; consult doctor in case of complaints.
  - After skin contact: Immediately rinse with water.
  - After eye contact: Rinse opened eye for several minutes under running water.
Trade name: Ethyl Alcohol Neat

- After swallowing: If symptoms persist consult 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.
- Protective Action Criteria for Chemicals
  - PAC-1: 1,800 ppm
  - PAC-2: 3300* ppm
  - PAC-3: 15000* ppm

7 Handling and storage

- Handling:
  - Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Open and handle receptacle with care.
  - Information about protection against explosions and fires:
    Keep ignition sources away - Do not smoke.
    Protect against electrostatic charges.
    Keep respiratory protective device available.
Trade name: Ethyl Alcohol Neat

- 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.
  - 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:
    |    |   |
    |----|---|
    | 64-17-5 ethanol |
    | PEL | Long-term value: 1900 mg/m³, 1000 ppm |
    | REL | Long-term value: 1900 mg/m³, 1000 ppm |
    | TLV | Short-term value: 1880 mg/m³, 1000 ppm |

- 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.
    Store protective clothing separately.
  - 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.
Trade name: Ethyl Alcohol Neat

- Eye protection:

  Tightly sealed goggles

### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
  - Form: Fluid
  - Color: Colorless
- **Odor:** Alcohol-like
- **Odor threshold:** Not determined.
- **pH-value:** Not determined.

- **Change in condition**
  - Melting point/Melting range: -114.5°C (°F)
  - Boiling point/Boiling range: 78°C (°F)

- **Flash point:** 13°C (°F)

- **Flammability (solid, gaseous):** Not applicable.

- **Ignition temperature:** 425°C (°F)

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Not determined.

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

- **Explosion limits:**
  - Lower: 3.5 Vol %
  - Upper: 15 Vol %

- **Vapor pressure at 20°C (68 °F):** 45 hPa (mm Hg)

- **Density at 20°C (68 °F):** 0.8 g/cm³ (lbs/gal)

- **Relative density** Not determined.

- **Vapor density** Not determined.

- **Evaporation rate** Not determined.

- **Solubility in / Miscibility with Water at 20°C (68 °F):** 1,000 g/l

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**
  - Dynamic at 20°C (68 °F): 1.2 mPas
  - Kinematic: Not determined.

- **Organic solvents:** 100.0 %

- **VOC content:** 100.00 %
  - 800.0 g/l / 6.68 lb/gl

- **Solids content:** 0.0 %
### 10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **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**:

  - **ATE (Acute Toxicity Estimate)**
  - **Oral**: LD50 >5,000 mg/kg (rat)

**64-17-5 ethanol**

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>LC50/4 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>&gt;5,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Inhalative</td>
<td>&gt;5,000</td>
<td>20,000</td>
</tr>
</tbody>
</table>

- **Primary irritant effect**:
  - **on the skin**: No irritant effect.
  - **on the eye**: No irritating effect.
  - **Sensitization**: No sensitizing effects known.
  - **Additional toxicological information**:
  - **Carcinogenic categories**
    - **IARC (International Agency for Research on Cancer)**
      - 1
    - **NTP (National Toxicology Program)**
      - Substance is not listed.
    - **OSHA-Ca (Occupational Safety & Health Administration)**
      - 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
Trade name: Ethyl Alcohol Neat

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
- Other adverse effects: No further relevant information available.

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, IMDG, IATA: UN1170
- UN proper shipping name
  - DOT: Ethanol
  - IMDG: ETHANOL (ETHYL ALCOHOL)
  - IATA: ETHANOL
- Transport hazard class(es)
  - DOT
    - Class: 3 Flammable liquids
    - Label: 3
  - IMDG, IATA
    - Class: 3 Flammable liquids
    - Label: 3
- Packing group
  - DOT, IMDG, IATA: II
- Environmental hazards: Not applicable.
- Special precautions for user: Warning: Flammable liquids
  - Danger code (Kemler): 33
  - EMS Number: F-E,S-D
**Trade name:** Ethyl Alcohol Neat

<table>
<thead>
<tr>
<th>Stowage Category</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Transport/Additional information:</td>
<td></td>
</tr>
<tr>
<td>DOT</td>
<td></td>
</tr>
<tr>
<td>Quantity limitations</td>
<td>On passenger aircraft/rail: 5 L&lt;br&gt;On cargo aircraft only: 60 L</td>
</tr>
<tr>
<td>IMDG</td>
<td></td>
</tr>
<tr>
<td>Limited quantities (LQ)</td>
<td>1L</td>
</tr>
<tr>
<td>Excepted quantities (EQ)</td>
<td>Code: E2&lt;br&gt;Maximum net quantity per inner packaging: 30 ml&lt;br&gt;Maximum net quantity per outer packaging: 500 ml</td>
</tr>
<tr>
<td>UN &quot;Model Regulation&quot;:</td>
<td>UN 1170 ETHANOL, 3, II</td>
</tr>
</tbody>
</table>

### 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)
    A3
- NIOSH-Ca (National Institute for Occupational Safety and Health)
  Substance is not listed.
- GHS label elements
  The substance is classified and labeled according to the Globally Harmonized System (GHS).
Trade name: Ethyl Alcohol Neat

- Hazard pictograms

GHS02    GHS08

- Signal word Danger

- Hazard-determining components of labeling:
  ethanol

- Hazard statements
  Highly flammable liquid and vapor.
  May cause cancer.

- Precautionary statements
  Obtain special instructions before use.
  Do not handle until all safety precautions have been read and understood.
  Keep away from heat/sparks/open flames/hot surfaces. No smoking.
  Keep container tightly closed.
  Ground/bond container and receiving equipment.
  Use explosion-proof electrical/ventilating/lighting/equipment.
  Use only non-sparking tools.
  Take precautionary measures against static discharge.
  Wear protective gloves/protective clothing/eye protection/face protection.
  If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  IF exposed or concerned: Get medical advice/attention.
  In case of fire: Use for extinction: CO2, powder or water spray.
  Store in a well-ventilated place. Keep cool.
  Store locked up.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

- National regulations:
  - Additional classification according to Decree on Hazardous Materials:
    Carcinogenic hazardous material group I (extremely dangerous).
    Carcinogenic hazardous material group II (very dangerous).
    Carcinogenic hazardous material group III (dangerous).

- Information about limitation of use:
  Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

- 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.

- Date of preparation / last revision 08/18/2017 / -

- 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)
Trade name: Ethyl Alcohol Neat

HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Flam. Liq. 2: Flammable liquids – Category 2
Carc. 1A: Carcinogenicity – Category 1A