# SAFETY DATA SHEET

**Creation Date**: 24-Apr-2009  
**Revision Date**: 23-Jan-2018  
**Revision Number**: 8

## 1. Identification

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Ethanol, 200 proof</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cat No.</strong></td>
<td>AC615090000; AC615090010; AC615090020; AC615090040; AC615091000; AC615095000; NC0549167; XXAC61509ET4LI; NC61509-K7; C61509-K7</td>
</tr>
<tr>
<td><strong>CAS-No</strong></td>
<td>64-17-5</td>
</tr>
<tr>
<td><strong>Synonyms</strong></td>
<td>Ethyl alcohol; Absolute ethanol</td>
</tr>
<tr>
<td><strong>Recommended Use</strong></td>
<td>Laboratory chemicals.</td>
</tr>
<tr>
<td><strong>Uses advised against</strong></td>
<td>Food, drug, pesticide or biocidal product use.</td>
</tr>
</tbody>
</table>

**Details of the supplier of the safety data sheet**

**Company**

- **Fisher Scientific Company**  
  One Reagent Lane  
  Fair Lawn, NJ 07410  
  Tel: (201) 796-7100

- **Acros Organics**  
  One Reagent Lane  
  Fair Lawn, NJ 07410

**Emergency Telephone Number**

For **information** US call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**: 001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**: 001-800-424-9300 / **Europe**: 001-703-527-3887

## 2. Hazard(s) identification

**Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Flammable liquids</th>
<th>Category 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
<td>Category 2</td>
</tr>
</tbody>
</table>

**Label Elements**

**Signal Word**

Danger

**Hazard Statements**

Highly flammable liquid and vapor  
Causes serious eye irritation
Precautionary Statements
Prevention
Use personal protective equipment as required
Wear face, hands and any exposed skin thoroughly after handling
Do not breathe dust/fume/gas/mist/vapors/spray
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Cool

Response
IF exposed or concerned: Get medical attention/advice
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Fire
In case of fire: Use CO2, dry chemical, or foam for extinction
Storage
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

### 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>64-17-5</td>
<td>99-100</td>
</tr>
</tbody>
</table>

### 4. First-aid measures

**General Advice**
If symptoms persist, call a physician.

**Eye Contact**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact**
Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

**Inhalation**
Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if
Ethanol, 200 proof

Ingestion
Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects
Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Notes to Physician
Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media
Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

Unsuitable Extinguishing Media
Water may be ineffective, Do not use a solid water stream as it may scatter and spread fire

Flash Point
13 °C / 55.4 °F

Method -
No information available

Autoignition Temperature
363 °C / 685.4 °F

Explosion Limits
Upper 19 vol %
Lower 3.3 vol %

Sensitivity to Mechanical Impact
No information available

Sensitivity to Static Discharge
No information available

Specific Hazards Arising from the Chemical
Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air.

Hazardous Combustion Products
Carbon monoxide (CO). Carbon dioxide (CO2).

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA
Health 2 Flammability 3 Instability 1 Physical hazards N/A

6. Accidental release measures

Personal Precautions
Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental Precautions
Should not be released into the environment. Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up
Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. Handling and storage

Handling
Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Ensure adequate ventilation. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from
open flames, hot surfaces and sources of ignition. Flammables area. Keep away from heat, sparks and flame.

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### 8. Exposure controls / personal protection

#### Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
<th>Mexico OEL (TWA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>STEL: 1000 ppm</td>
<td>(Vacated) TWA: 1000 ppm</td>
<td>IDLH: 3300 ppm</td>
<td>STEL: 1000 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacated) TWA: 1900 mg/m³</td>
<td>TWA: 1000 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 1900 ppm</td>
<td>TWA: 1900 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

#### Legend

- **ACGIH**: American Conference of Governmental Industrial Hygienists
- **OSHA**: Occupational Safety and Health Administration
- **NIOSH IDLH**: NIOSH - National Institute for Occupational Safety and Health

#### Engineering Measures

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Personal Protective Equipment

- **Eye/face Protection**: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA’s eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

- **Skin and body protection**: Wear appropriate protective gloves and clothing to prevent skin exposure.

- **Respiratory Protection**: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

#### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

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### 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical State</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Appearance</strong></td>
<td>Clear, Colorless</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>Alcohol</td>
</tr>
<tr>
<td><strong>Odor Threshold</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>7 @ 20°C 10g/l aq.sol</td>
</tr>
<tr>
<td><strong>Melting Point/Range</strong></td>
<td>-114 °C / -173.2 °F</td>
</tr>
<tr>
<td><strong>Boiling Point/Range</strong></td>
<td>78 °C / 172.4 °F</td>
</tr>
<tr>
<td><strong>Flash Point</strong></td>
<td>13 °C / 55.4 °F</td>
</tr>
<tr>
<td><strong>Evaporation Rate</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Flammability or explosive limits</strong></td>
<td></td>
</tr>
<tr>
<td>Upper</td>
<td>19 vol %</td>
</tr>
<tr>
<td>Lower</td>
<td>3.3 vol %</td>
</tr>
<tr>
<td><strong>Vapor Pressure</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Vapor Density</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Specific Gravity</strong></td>
<td>0.785 g/cm³ @20°C</td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
<td>miscible</td>
</tr>
<tr>
<td><strong>Partition coefficient; n-octanol/water</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Autoignition Temperature</strong></td>
<td>363 °C / 685.4 °F</td>
</tr>
<tr>
<td><strong>Decomposition Temperature</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>No information available</td>
</tr>
<tr>
<td><strong>Molecular Formula</strong></td>
<td>C₂H₆O</td>
</tr>
</tbody>
</table>
10. Stability and reactivity

Reactive Hazard
None known, based on information available

Stability
Hygroscopic.

Conditions to Avoid

Incompatible Materials
Strong oxidizing agents, Strong acids, Acid anhydrides, Acid chlorides

Hazardous Decomposition Products
Carbon monoxide (CO), Carbon dioxide (CO₂)

Hazardous Polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>LD50 = 10470 mg/kg OCED 401 (Rat) 3450 mg/kg (Mouse)</td>
<td>Not listed</td>
<td>LC50 = 117-125 mg/l (4h) OECD 403 (rat) 20000 ppm/10H (rat)</td>
</tr>
</tbody>
</table>

Toxicologically Synergistic Products
No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure
Irritation
Irritating to eyes

Sensitization
No information available

Carcinogenicity
The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC (Group)</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>64-17-5</td>
<td>Group 1</td>
<td>Known</td>
<td>A3</td>
<td>X</td>
<td>A3</td>
</tr>
</tbody>
</table>

IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)
A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen

OSHA: (Occupational Safety & Health Administration)
X - Present

Mexico - Occupational Exposure Limits - Carcinogens
Mexico - Occupational Exposure Limits - Carcinogens
A1 - Confirmed Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Confirmed Animal Carcinogen
A4 - Not Classifiable as a Human Carcinogen
A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects
No information available
Ethanol, 200 proof  
Revision Date 23-Jan-2018

Reproductive Effects  
No information available.

Developmental Effects  
No information available.

Teratogenicity  
No information available.

STOT - single exposure  
None known

STOT - repeated exposure  
None known

Aspiration hazard  
No information available

Symptoms / effects, both acute and delayed  
Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Endocrine Disruptor Information  
No information available

Other Adverse Effects  
The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity  
Do not empty into drains.

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>EC50 (72h) = 275 mg/l (Chlorella vulgaris)</td>
<td>Fathead minnow (Pimephales promelas) LC50 = 14200 mg/l/96h</td>
<td>Photobacterium phosphoreum:EC50 = 34634 mg/L/30 min Photobacterium phosphoreum:EC50 = 35470 mg/L/5 min</td>
<td>EC50 = 9268 mg/L/48h EC50 = 10800 mg/L/24h</td>
</tr>
</tbody>
</table>

Persistence and Degradability  
Persistence is unlikely based on information available.

Bioaccumulation / Accumulation  
No information available.

Mobility  
Will likely be mobile in the environment due to its volatility.

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>-0.32</td>
</tr>
</tbody>
</table>

13. Disposal considerations

Waste Disposal Methods  
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information
15. Regulatory information

United States of America Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>TSCA</th>
<th>TSCA Inventory notification - Active/inactive</th>
<th>TSCA - EPA Regulatory Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>64-17-5</td>
<td>X</td>
<td>ACTIVE</td>
<td>-</td>
</tr>
</tbody>
</table>

Legend:
- TSCA - Toxic Substances Control Act, (40 CFR Part 710)
  - X - Listed
  - ‘-’ - Not Listed
- TSCA 12(b) - Notices of Export Not applicable

International Inventories
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>64-17-5</td>
<td>X</td>
<td>-</td>
<td>200-578-6</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>KE-13217</td>
</tr>
</tbody>
</table>

U.S. Federal Regulations

SARA 313 Not applicable
SARA 311/312 Hazard Categories See section 2 for more information
CWA (Clean Water Act) Not applicable
Clean Air Act Not applicable
OSHA - Occupational Safety and Health Administration Not applicable
CERCLA Not applicable
California Proposition 65 This product contains the following Proposition 65 chemicals. Ethyl alcohol is only a considered a Proposition 65 developmental hazard when it is ingested as an alcoholic beverage.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>California Prop. 65</th>
<th>Prop 65 NSRL</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>64-17-5</td>
<td>Development (alcoholic beverages only) Carcinogen</td>
<td>-</td>
<td>Developmental Carcinogen</td>
</tr>
</tbody>
</table>

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation
Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N
This product does not contain any DHS chemicals.

Other International Regulations
Mexico - Grade
Serious risk, Grade 3

16. Other information
Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date
24-Apr-2009

Revision Date
23-Jan-2018

Print Date
23-Jan-2018

Revision Summary
This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). SDS sections updated. 2.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS