**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

1.1. **Product identifier**

<table>
<thead>
<tr>
<th>Trade name</th>
<th>ETHANOL, 70% SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>AB04020</td>
</tr>
</tbody>
</table>

1.2. **Relevant identified uses of the substance or mixture and uses advised against**

| Use of the substance/mixture | Laboratory use/Manufacturing component/Research |

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

AmericanBio, Inc.
15 Erie Dr.
Natick, MA 01760 - USA
T 800.443.0600 - F 508.655.2754
info@americanbio.com - www.americanbio.com

1.4. **Emergency telephone number**

| Emergency number | 855.835.2572 (U.S.) :: 760.602.8703 (Outside U.S.) |

**SECTION 2: Hazards identification**

2.1. **Classification of the substance or mixture**

**Classification (GHS-US)**
- Flam. Liq. 2 - H225
- Carc. 1A - H350

2.2. **Label elements**

**GHS-US labeling**

- **Hazard pictograms (GHS-US):**
  - ![GHS02](image)
  - ![GHS08](image)

- **Signal word (GHS-US):** Danger
- **Hazard statements (GHS-US):**
  - H225 - Highly flammable liquid and vapor
  - H350 - May cause cancer

- **Precautionary statements (GHS-US):**
  - P201 - Obtain special instructions before use
  - P202 - Do not handle until all safety precautions have been read and understood
  - P210 - Keep away from sparks/open flames. - No smoking
  - P233 - Keep container tightly closed
  - P240 - Ground/bond container and receiving equipment
  - P241 - Use explosion-proof electrical/lighting equipment
  - P242 - Use only non-sparking tools
  - P243 - Take precautionary measures against static discharge
  - P280 - Wear eye protection, protective clothing, protective gloves
  - P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
  - P308+P313 - IF exposed or concerned: Get medical advice/attention
  - P370+P378 - In case of fire: Use water spray for extinction
  - P403+P235 - Store in a well-ventilated place. Keep cool
  - P405 - Store locked up
  - P501 - Dispose of contents/container to Collect all waste in suitable and labeled containers and dispose according to local legislation

2.3. **Other hazards**

No additional information available

2.4. **Unknown acute toxicity (GHS-US)**

No data available
SECTION 3: Composition/information on ingredients

3.1. Substance
Not applicable
Full text of H-phrases: see section 16

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol</td>
<td>(CAS No) 64-17-5</td>
<td>65 - 75</td>
<td>Flam. Liq. 2, H225, Carc. 1A, H350</td>
</tr>
<tr>
<td>water, reagent grade, usp purified</td>
<td>(CAS No) 7732-18-5</td>
<td>25 - 35</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures general: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation: Assure fresh air breathing. Allow the victim to rest.
First-aid measures after skin contact: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing.
First-aid measures after eye contact: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
First-aid measures after ingestion: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/injuries after inhalation: May cause cancer by inhalation.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media
Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Highly flammable liquid and vapor.
Explosion hazard: May form flammable/explosive vapor-air mixture.

5.3. Advice for firefighters
Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.
Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
General measures: Remove ignition sources. Use special care to avoid static electric charges. No naked lights. No smoking.

6.1.1. For non-emergency personnel
Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders
Protective equipment: Equip cleanup crew with proper protection.
Emergency procedures: Ventilate area.

6.2. Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.
SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed: Handle empty containers with care because residual vapors are flammable.

Precautions for safe handling: Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No naked lights. No smoking. Use only non-sparking tools. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/lighting equipment.

Storage conditions: Keep only in the original container in a cool, well ventilated place away from: Direct sunlight., Heat sources. Keep in fireproof place. Keep container tightly closed.

Incompatible products: Strong bases. strong acids.

Incompatible materials: Sources of ignition. Direct sunlight. Heat sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment: Avoid all unnecessary exposure.

Hand protection: Wear protective gloves.

Eye protection: Chemical goggles or safety glasses.

Respiratory protection: Wear approved mask.

Other information: When using, do not eat, drink or smoke.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless.

Odor: Characteristic.

Odor threshold: No data available

pH: No data available

Relative evaporation rate (butyl acetate=1): No data available

Melting point: No data available

Freezing point: No data available

Boiling point: No data available

Flash point: No data available

Self ignition temperature: No data available

Decomposition temperature: No data available

Flammability (solid, gas): No data available

Vapor pressure: No data available

Relative vapor density at 20 °C: No data available

Relative density: No data available

Solubility: No data available

Log Pow: No data available

Log Kow: No data available

Viscosity, kinematic: No data available

Viscosity, dynamic: No data available

Explosive properties: No data available

Oxidizing properties: No data available

Explosive limits: No data available
9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Not established. Highly flammable liquid and vapor. May form flammable/explosive vapor-air mixture.

10.3. Possibility of hazardous reactions
Not established.

10.4. Conditions to avoid
Direct sunlight. Extremely high or low temperatures. Open flame.

10.5. Incompatible materials
Strong acids. Strong bases.

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity
: Not classified

ethanol (64-17-5)

- LD50 oral rat: 10740 mg/kg body weight (Rat; Experimental value, Rat; Experimental value)
- LD50 dermal rabbit: > 16000 mg/kg (Rabbit)

Skin corrosion/irritation
: Not classified

Serious eye damage/irritation
: Not classified

Respiratory or skin sensitization
: Not classified

Germ cell mutagenicity
: Not classified

Carcinogenicity
: May cause cancer.

ethanol (64-17-5)

- Reproductive toxicity: Not classified
- Specific target organ toxicity (single exposure): Not classified
- Specific target organ toxicity (repeated exposure): Not classified
- Aspiration hazard: Not classified
- Potential Adverse human health effects and symptoms: Based on available data, the classification criteria are not met.
- Symptoms/injuries after inhalation: May cause cancer by inhalation.

SECTION 12: Ecological information

12.1. Toxicity

ethanol (64-17-5)

- LC50 fish 1: 14200 mg/l (96 h; Pimephales promelas; Nominal concentration)
- EC50 Daphnia 1: 9300 mg/l (48 h; Daphnia magna)
- LC50 fish 2: 13000 mg/l (96 h; Salmo gairdneri (Oncorhynchus mykiss)
- EC50 Daphnia 2: 10800 mg/l (24 h; Daphnia magna)
- Threshold limit other aquatic organisms 1: 65 mg/l (72 h; Protozoa)
- Threshold limit algae 1: 1450 mg/l (192 h; Microcystis aeruginosa; Growth rate)
- Threshold limit algae 2: 5000 mg/l (168 h; Scenedesmus quadricauda; Growth rate)
### 12.2. Persistence and degradability

**ETHANOL, 70% SOLUTION**

Persistence and degradability: Not established.

**ethanol (64-17-5)**

Persistence and degradability: Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>0.8 - 0.967 g O²/g substance</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>1.70 g O²/g substance</td>
</tr>
<tr>
<td>ThOD</td>
<td>2.10 g O²/g substance</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>0.43 % ThOD</td>
</tr>
</tbody>
</table>

### 12.3. Bioaccumulative potential

**ETHANOL, 70% SOLUTION**

Bioaccumulative potential: Not established.

**ethanol (64-17-5)**

Log Pow: -0.31 (Experimental value)

Bioaccumulative potential: Low potential for bioaccumulation (Log Kow < 4).

### 12.4. Mobility in soil

**ethanol (64-17-5)**

Surface tension: 0.022 N/m (20 °C)

### 12.5. Other adverse effects

Other information: Avoid release to the environment.

### SECTION 13: Disposal considerations

**13.1. Waste treatment methods**

Waste disposal recommendations: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to Remove waste in accordance with local and/or national regulations.

Additional information: Handle empty containers with care because residual vapors are flammable.

Ecology - waste materials: Avoid release to the environment.

### SECTION 14: Transport information

In accordance with DOT

Transport document description: UN1170 Ethanol solutions, 3, II

UN-No.(DOT): 1170

DOT NA no.: UN1170

DOT Proper Shipping Name: Ethanol solutions

Department of Transportation (DOT) Hazard Classes: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT): 3 - Flammable liquid

Packing group (DOT): II - Medium Danger

DOT Special Provisions (49 CFR 172.102): 24 - Alcoholic beverages containing more than 70 percent alcohol by volume must be transported as materials in Packing Group II. Alcoholic beverages containing more than 24 percent but not more than 70 percent alcohol by volume must be transported as materials in Packing Group III.

IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 °C (1.1 bar at 122 °F), or 130 kPa at 55 °C (1.3 bar at 131 °F) are authorized.

T4 - 2.65 178.275(d)(2) Normal............. 178.275(d)(3)

TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / (1 + a (tr - tf)) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
ETHANOL, 70% SOLUTION
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DOT Packaging Exceptions (49 CFR 173.xxx) : 4b:150
DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 242
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L
DOT Vessel Stowage Location : A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.

Additional information
Other information : No supplementary information available.

ADR
Transport document description : UN N/A
Packing group (ADR) : N/A
Hazard identification number (Kemler No.) : N/A
Classification code (ADR) : N/A

Transport by sea
No additional information available

Air transport
No additional information available

SECTION 15: Regulatory information
15.1. US Federal regulations

ethanol (64-17-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

water, reagent grade, usp purified (7732-18-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA
No additional information available

EU-Regulations
No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC or 1999/45/EC
Not classified

15.2.2. National regulations

ethanol (64-17-5)
Listed on IARC (International Agency for Research on Cancer)

15.3. US State regulations

ethanol (64-17-5)
U.S. - New Jersey - Right to Know Hazardous Substance List
SECTION 16: Other information

Other information : None.

Full text of H-phrases: see section 16:

<table>
<thead>
<tr>
<th>Carc. 1A</th>
<th>Carcinogenicity Category 1A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Liq. 2</td>
<td>Flammable liquids Category 2</td>
</tr>
<tr>
<td>H225</td>
<td>Highly flammable liquid and vapor</td>
</tr>
<tr>
<td>H350</td>
<td>May cause cancer</td>
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</tbody>
</table>

SDS US (GHS HazCom 2012)

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