



## Safety Data Sheet

### Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

#### 1.1 Product identifier

|                                  |                                 |
|----------------------------------|---------------------------------|
| <b>Product Name</b>              | • <b>Ethyl Alcohol</b>          |
| <b>Synonyms</b>                  | • Ethanol, E-100, Ethyl Alcohol |
| <b>CAS Number</b>                | • 64-17-5                       |
| <b>REACH Registration Number</b> | • Data Lacking                  |

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

|                                   |   |
|-----------------------------------|---|
| <b>Relevant identified use(s)</b> | • Blending with gasoline for spark ignition engine fuel, chemical manufacturing, industrial chemical uses |
|-----------------------------------|---|

#### 1.3 Details of the supplier of the safety data sheet

|                            |  |
|----------------------------|--|
| <b>Manufacturer</b>        | • Homeland Energy Solutions<br>2779 Hwy 24<br>Lawler, IA 52154<br>United States<br>www.homelandenergysolutions.com |
| <b>Telephone (General)</b> | • (563) 238-5555   |
| <b>Telephone (General)</b> | • (563) 238-5557 - Fax   |

#### 1.4 Emergency telephone number

|                     |                             |
|---------------------|-----------------------------|
| <b>Manufacturer</b> | • 1-800-424-9300 - CHEMTREC |
|---------------------|-----------------------------|

### Section 2: Hazards Identification

#### EU/EEC

According to EU Directive 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]  
According to EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

#### 2.1 Classification of the substance or mixture

|                |                               |
|----------------|-------------------------------|
| <b>CLP</b>     | • Flammable Liquids 2 - H225  |
| <b>DSD/DPD</b> | • Highly Flammable (F)<br>R11 |

#### 2.2 Label Elements

CLP

**DANGER**



- H225 - Highly flammable liquid and vapour

### Precautionary statements

- Prevention**
- P210 - Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.
  - P233 - Keep container tightly closed.
  - P240 - Ground and/or bond container and receiving equipment.
  - P241 - Use explosion-proof electrical/ventilating/lighting/equipment.
  - P242 - Use only non-sparking tools.
  - P243 - Take precautionary measures against static discharge.
  - P280 - Wear protective gloves -Gloves and eye/face protection , .
- Response**
- P370+P378 - In case of fire: Use appropriate media for extinction.
  - P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- Storage/Disposal**
- P403+P235 - Store in a well-ventilated place. Keep cool.
  - P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

### DSD/DPD



- Risk phrases**
- R11 - Highly flammable.
- Safety phrases**
- S7 - Keep container tightly closed
  - S16 - Keep away from sources of ignition - No Smoking.

### 2.3 Other Hazards

- CLP**
- According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.
- DSD/DPD**
- This product is considered dangerous according to the European Directive 67/548/EEC.

## UN GHS

According to Third Revised Edition

### 2.1 Classification of the substance or mixture

- UN GHS**
- Flammable Liquids 2 - H225
  - Skin Irritation 2 - H315
  - Eye Irritation 2A - H319
  - Germ Cell Mutagenicity 1B - H340
  - Reproductive Toxicity 1A - H360

### 2.2 Label elements

**UN GHS**

**DANGER**



- H225 - Highly flammable liquid and vapour
- H315 - Causes skin irritation
- H319 - Causes serious eye irritation
- H340 - May cause genetic defects via ingestion
- H360 - May damage fertility or the unborn child -birth defects via ingestion

### Precautionary statements

- Prevention**
- P201 - Obtain special instructions before use.
  - P202 - Do not handle until all safety precautions have been read and understood.
  - P210 - Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.
  - P233 - Keep container tightly closed.

- P235 - Keep cool.
- P240 - Ground and/or bond container and receiving equipment.
- P241 - Use explosion-proof electrical/ventilating/lighting/equipment.
- P242 - Use only non-sparking tools.
- P243 - Take precautionary measures against static discharge.
- P264 - Wash thoroughly after handling.
- P280 - Wear protective gloves and eye/face protection - Splash Goggles, .
- P281 - Use personal protective equipment as required.

- Response**
  - P370+P378 - In case of fire: Use appropriate media for extinction.
  - P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - P352 - Wash with plenty of soap and water.
  - P332+P313 - If skin irritation occurs: Get medical advice/attention.
  - P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P337+P313 - If eye irritation persists: Get medical advice/attention.
  - P308+P313 - IF exposed or concerned: Get medical advice/attention.
  - P321 - Specific treatment, see supplemental first aid information.
- Storage/Disposal**
  - P403+P235 - Store in a well-ventilated place. Keep cool.
  - P405 - Store locked up.
  - P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

## 2.3 Other hazards

### UN GHS

- According to the Globally Harmonized System for Classification and Labeling (GHS) this product is considered hazardous.

## United States (US)

According to OSHA 29 CFR 1910.1200 HCS

### 2.1 Classification of the substance or mixture

#### OSHA HCS

- Flammable Liquid
- Flammable/Combustible Class IB
- Irritant

### 2.2 Label elements

#### OSHA HCS

- Not required

### 2.3 Other hazards

#### OSHA HCS

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

## Canada

According to WHMIS

### 2.1 Classification of the substance or mixture

#### WHMIS

- Flammable Liquids - B2
- Other Toxic Effects - D2B

### 2.2 Label elements

#### WHMIS



- Flammable Liquids - B2
- Other Toxic Effects - D2B

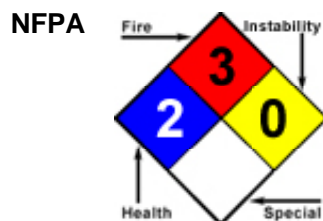
### 2.3 Other hazards

#### WHMIS

- In Canada, the product mentioned above is considered hazardous under the

## Workplace Hazardous Materials Information System (WHMIS).

## 2.4 Other information



See Section 12 for Ecological Information.

## Section 3 - Composition/Information on Ingredients

## 3.1 Substances

| Hazardous Components |   |                |  |  |          |
|----------------------|---|----------------|--|--|----------|
| Chemical Name        | Identifiers                                     | %(weight)      | LD50/LC50  | Classifications According to Regulation/Directive  | Comments |
| Ethanol              | CAS:64-17-5<br>EC Number:200-578-6<br>UN:UN1170 | 95% TO<br>100% | Ingestion/Oral-Rat LD50 ·<br>7060 mg/kg<br>Inhalation-Rat LC50 · 124700<br>mg/m <sup>3</sup> 4 Hour(s) | <b>UN GHS:</b> Flam Liq. 2; Eye Irrit. 2A; Skin Irrit. 2; Repr. 1A; Muta, 1B;<br><b>EU DSD/DPD:</b> Annex I - F; R11<br><b>EU CLP:</b> Annex VI - Flam. Liq. 2; H225 | NDA      |

## 3.2 Mixtures

- Material does not meet the criteria of a mixture in accordance with Regulation (EC) No 1272/2008.

See Section 11 for Toxicological Information.

## Section 4 - First Aid Measures

## 4.1 Description of first aid measures

**Inhalation**

- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing.

**Skin**

- IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If irritation develops and persists, get medical attention.

**Eye**

- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.

**Ingestion**

- If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Drink (one glass) (two glasses) of water. Call a physician (or poison control center immediately) Never give anything by mouth to an unconscious person. Get medical attention immediately if symptoms occur.

## 4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

## 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to Physician**

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials

other than this product may have occurred.

## Section 5 - Firefighting Measures

### 5.1 Extinguishing media

**Suitable Extinguishing Media**

- **SMALL FIRES:** Dry chemical, CO<sub>2</sub>, water spray or alcohol-resistant foam.
- **LARGE FIRES:** Water spray, fog or alcohol-resistant foam.
- **CAUTION:** For mixtures containing a high percentage of an alcohol or polar solvent, alcohol-resistant foam may be more effective.

**Unsuitable Extinguishing Media**

- No data available

### 5.2 Special hazards arising from the substance or mixture

**Unusual Fire and Explosion Hazards**

- **HIGHLY FLAMMABLE:** Will be easily ignited by heat, sparks or flames. Alcohol flames may be difficult to see because they are virtually colorless. Vaporizes easily at normal temperatures. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated.

**Hazardous Combustion Products**

- May form toxic materials, carbon dioxide and carbon monoxide.

### 5.3 Advice for firefighters

- Structural firefighters' protective clothing will only provide limited protection. Wear positive pressure self-contained breathing apparatus (SCBA).

## Section 6 - Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

**Personal Precautions**

- Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate enclosed areas. Stay upwind.

**Emergency Procedures**

- **ELIMINATE** all ignition sources (no smoking, flares, sparks or flames in immediate area) As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. If tank, rail car or tank truck is involved in a fire, **ISOLATE** for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. **LARGE SPILL:** Consider initial downwind evacuation for at least 300 meters (1000 feet) Keep out of low areas. Stay upwind. Keep unauthorized personnel away. Ventilate closed spaces before entering.

### 6.2 Environmental precautions

- **LARGE SPILLS:** Prevent entry into waterways, sewers, basements or confined areas.

### 6.3 Methods and material for containment and cleaning up

**Containment/Clean-up Measures**

- **SMALL SPILLS:** Take up with sand or other non-combustible absorbent material and place into containers for later disposal.
- **LARGE SPILLS:** Dike far ahead of spill for later disposal. A vapor suppressing foam may be used to reduce vapors. Stop leak if you can do it without risk. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material. All equipment used when handling the product must be grounded.

## 6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

## Section 7 - Handling and Storage

### 7.1 Precautions for safe handling

#### Handling

- Use good safety and industrial hygiene practices. Use only with adequate ventilation. Do not breathe (dust, vapor or spray mist) Keep away from heat and sparks. Take precautionary measures against static charges. Do not use sparking tools. Ground container when transferring product.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage

- Store in a cool, dry, well-ventilated place. Store locked up. Keep away from fire. Keep container closed when not in use.

### 7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

## Section 8 - Exposure Controls/Personal Protection

### 8.1 Control parameters

| Exposure Limits/Guidelines          |          |   |  |  |  |  |
|-------------------------------------|----------|---|--|--|--|--|
|                                     | Result   | ACGIH   | Brazil                                   | Canada Ontario                               | Canada Quebec                                | Germany DFG                                |
| Ethanol<br>(64-17-5)                | TWAs     | Not established   | 780 ppm TWA; 1480 mg/m <sup>3</sup> TWA  | 1000 ppm TWAEV; 1900 mg/m <sup>3</sup> TWAEV | 1000 ppm TWAEV; 1880 mg/m <sup>3</sup> TWAEV | Not established                            |
|                                     | STELs    | 1000 ppm STEL   | Not established                          | Not established                              | Not established                              | Not established                            |
|                                     | Ceilings | Not established   | Not established                          | Not established                              | Not established                              | 1000 ppm Peak; 1920 mg/m <sup>3</sup> Peak |
|                                     | MAKs     | Not established   | Not established                          | Not established                              | Not established                              | 500 ppm MAK; 960 mg/m <sup>3</sup> MAK     |
| Exposure Limits/Guidelines (Con't.) |          |   |  |  |  |  |
|                                     | Result   | Germany TRGS  | NIOSH                                    | OSHA   |  |  |
| Ethanol<br>(64-17-5)                | TWAs     | 500 ppm TWA<br>(exposure factor 2);<br>960 mg/m <sup>3</sup> TWA<br>(exposure factor 2) | 1000 ppm TWA; 1900 mg/m <sup>3</sup> TWA | 1000 ppm TWA; 1900 mg/m <sup>3</sup> TWA     |  |  |

### 8.2 Exposure controls

#### Engineering Measures/Controls

- Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values.

#### Personal Protective Equipment

##### Respiratory

- In case of insufficient ventilation, wear suitable respiratory equipment.

##### Eye/Face

- Wear splash goggles.

##### Skin/Body

- Wear appropriate gloves.

#### Environmental Exposure Controls

- Follow best practice for site management and disposal of waste.

#### Key to abbreviations

MSHA = Mine Safety and Health Administration

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

MAK = Maximale Arbeitsplatz Konzentration is the maximum permissible concentration

STEL = Short Term Exposure Limits are based on 15-minute exposures

TWAEV = Time-Weighted Average Exposure Value

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

## Section 9 - Physical and Chemical Properties

### 9.1 Information on Physical and Chemical Properties

| Material Description                               |                             |                                     |   |
|--|-----------------------------|-------------------------------------|---|
| Physical Form                                      | Liquid                      | Appearance/Description              | Clear, colorless, volatile liquid with characteristic alcohol odor. |
| Color  | Clear, Colorless.           | Odor                                | Characteristic alcohol.   |
| Taste  | No data available.          | Particulate Type                    | Not relevant  |
| Particulate Size                                   | Not relevant                | Aerosol Type                        | Not relevant  |
| Odor Threshold                                     | Data lacking                | Physical and Chemical Properties    | Data lacking  |
| General Properties                                 |                             |                                     |   |
| Boiling Point                                      | 70 C(158 F)<br>@ 760mmg Hg  | Melting Point                       | Data lacking  |
| Decomposition Temperature                          | Data lacking                | Heat of Decomposition               | Data lacking  |
| pH   | Data lacking                | Specific Gravity/Relative Density   | 0.787 to 0.797 Water=1  |
| Density  | Data lacking                | Bulk Density                        | Data lacking  |
| Water Solubility                                   | 100 %                       | Solvent Solubility                  | Data lacking  |
| Viscosity  | Data lacking                | Explosive Properties                | Data lacking  |
| Oxidizing Properties:                              | Data lacking                |                                     |   |
| Volatility   |                             |                                     |   |
| Vapor Pressure                                     | 212 mmHg (torr) @ 0 C(32 F) | Vapor Density                       | > 1 Air=1   |
| Evaporation Rate                                   | Data lacking                | VOC (Wt.)                           | Data lacking  |
| VOC (Vol.)   | Data lacking                | Volatiles (Wt.)                     | Data lacking  |
| Volatiles (Vol.)                                   | Data lacking                |                                     |   |
| Flammability                                       |                             |                                     |   |
| Flash Point  | 12.7 C(54.86 F)             | UEL                                 | Data lacking  |
| LEL  | Data lacking                | Autoignition                        | Data lacking  |
| Self-Accelerating Decomposition Temperature (SADT) | Data lacking                | Heat of Combustion ( $\Delta H_c$ ) | Data lacking  |
| Burning Time                                       | Data lacking                | Flame Duration                      | Data lacking  |
| Flame Height                                       | Data lacking                | Flame Extension                     | Data lacking  |
| Ignition Distance                                  | Data lacking                | Flammability (solid, gas)           | Data lacking  |
| Environmental                                      |                             |                                     |   |
| Half-Life  | Data lacking                | Octanol/Water Partition coefficient | Data lacking  |
| Coefficient of water/oil distribution              | Data lacking                | Bioaccumulation Factor              | Data lacking  |

|                         |              |                                    |              |
|-------------------------|--------------|------------------------------------|--------------|
| Bioconcentration Factor | Data lacking | Biochemical Oxygen Demand BOD/BOD5 | Data lacking |
| Chemical Oxygen Demand  | Data lacking | Persistence                        | Data lacking |
| Degradation             | Data lacking |                                    |              |

## 9.2 Other Information

- No additional physical and chemical parameters noted.

## Section 10: Stability and Reactivity

### 10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

### 10.2 Chemical stability

- Stable under normal temperatures and pressures.

### 10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

### 10.4 Conditions to avoid

- Heat, sparks, open flame.

### 10.5 Incompatible materials

- Strong oxidizing agents and strong inorganic acids.

### 10.6 Hazardous decomposition products

- No data available.

## Section 11 - Toxicological Information

### 11.1 Information on toxicological effects

| Component Name        | CAS     | Data  |
|-----------------------|---------|---|
| Ethanol (95% TO 100%) | 64-17-5 | <b>Acute Toxicity:</b> orl-rat LD50:7060 mg/kg; ihl-rat LC50:124700 mg/m <sup>3</sup> /4H;<br><b>Irritation:</b> eye-rbt 500 mg SEV; skn-rbt 20 mg/24H MOD;<br><b>Mutagen:</b> dlt-mus-ori 3720 mg/kg/3D; spm-mus-ori 1500 mg/kg/50D; dnd-rat-ori 4 gm/kg;<br><b>Reproductive:</b> orl-rat TDLo:90 mg/kg (30D male); orl-rat TDLo:147 mg/kg (1-21D preg); orl-rat TDLo:22.5 gm/kg (11-20D preg); orl-rat TDLo:120 gm/kg (6-15D preg); orl-wmn TDLo:250 mg/kg (37W preg); orl-wmn TDLo:41 gm/kg (41W preg); orl-wmn TDLo:5860 mL/kg (3Y pre-100D post); ihl-rat TCLo:20000 ppm/7H (1-22D preg) |

| GHS Properties                | Classification   |
|-------------------------------|--|
| Acute toxicity                | EU/CLP • Classification criteria not met<br>UN GHS • Classification criteria not met |
| Skin corrosion/Irritation     | EU/CLP • Classification criteria not met<br>UN GHS • Skin Irritation 2               |
| Serious eye damage/Irritation | EU/CLP • Classification criteria not met<br>UN GHS • Eye Irritation 2A               |
| Skin sensitization            | EU/CLP • Classification criteria not met<br>UN GHS • Classification criteria not met |



|                                  |  |
|----------------------------------|--|
| <b>Respiratory sensitization</b> | <b>EU/CLP</b> • Classification criteria not met<br><b>UN GHS</b> • Classification criteria not met |
| <b>Aspiration Hazard</b>         | <b>EU/CLP</b> • Classification criteria not met<br><b>UN GHS</b> • Classification criteria not met |
| <b>Carcinogenicity</b>           | <b>EU/CLP</b> • Classification criteria not met<br><b>UN GHS</b> • Classification criteria not met |
| <b>Germ Cell Mutagenicity</b>    | <b>EU/CLP</b> • Classification criteria not met<br><b>UN GHS</b> • Germ Cell Mutagenicity 1B       |
| <b>Toxicity for Reproduction</b> | <b>EU/CLP</b> • Classification criteria not met<br><b>UN GHS</b> • Toxic to Reproduction 1A        |
| <b>STOT-SE</b>                   | <b>EU/CLP</b> • Classification criteria not met<br><b>UN GHS</b> • Classification criteria not met |
| <b>STOT-RE</b>                   | <b>EU/CLP</b> • Classification criteria not met<br><b>UN GHS</b> • Classification criteria not met |

**Target Organs**

- Central Nervous System (CNS), Liver

**Route(s) of entry/exposure**

- Inhalation, Skin, Eye, Ingestion

**Potential Health Effects****Inhalation****Acute (Immediate)**

- May cause respiratory irritation. High concentration can cause burning and irritation in nose and throat and headaches.

**Chronic (Delayed)**

- No data available.

**Skin****Acute (Immediate)**

- Causes skin irritation.

**Chronic (Delayed)**

- No data available.

**Eye****Acute (Immediate)**

- Causes serious eye irritation.

**Chronic (Delayed)**

- No data available.

**Ingestion****Acute (Immediate)**

- May affect the central nervous system. Symptoms may include dizziness, drowsiness, lethargy, coma and death.

**Chronic (Delayed)**

- No data available.

**Other****Chronic (Delayed)**

- Chronic exposure to ethanol can cause damage to liver, kidney, and heart.

**Mutagenic Effects**

- Repeated and prolonged exposure may cause mutagenic effects.

**Reproductive Effects**

- Ingestion of ethanol during pregnancy has been shown to cause birth effects and other reproductive harm.

## Section 12 - Ecological Information

### 12.1 Toxicity

| Ethyl Alcohol       |                     |            | 64-17-5 |                          |          |
|---------------------|---------------------|------------|---------|--------------------------|----------|
| Dosage              | Species             | Duration   | Results | Exposure Conditions      | Comments |
| 12900 to 15300 mg/L | Fish: Rainbow Trout | 96 Hour(s) | LC50    | Flow-through @ 24-24.3°C | NDA      |

**12.2 Persistence and degradability**

- Material data lacking.

**12.3 Bioaccumulative potential**

- Material data lacking.

**12.4 Mobility in Soil**

- Material data lacking.

**12.5 Results of PBT and vPvB assessment**

- PBT and vPvB assessment has not been carried out.

**12.6 Other adverse effects**

- No studies have been found.

**Section 13 - Disposal Considerations****13.1 Waste treatment methods****Product waste**

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Packaging waste**

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Section 14 - Transport Information**

|           | 14.1 UN number | 14.2 UN proper shipping name                           | 14.3 Transport hazard class(es) | 14.4 Packing group | 14.5 Environmental hazards |
|-----------|----------------|--|---------------------------------|--------------------|----------------------------|
| DOT       | UN1170         | Ethyl alcohol  | 3                               | II                 | NDA                        |
| TDG       | UN1170         | ETHYL ALCOHOL more than 24 per cent ethanol, by volume | 3                               | II                 | NDA                        |
| IMO/IMDG  | UN1170         | ETHANOL (ETHYL ALCOHOL)                                | 3                               | II                 | NDA                        |
| IATA/ICAO | UN1170         | Ethyl alcohol  | 3                               | II                 | NDA                        |

**14.6 Special precautions for user**

- No special precautions.

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

- Not relevant.

**Section 15 - Regulatory Information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**SARA Hazard Classifications** ● Acute, Chronic, Fire

| State Right To Know |         |     |     |     |
|---------------------|---------|-----|-----|-----|
| Component           | CAS     | MA  | NJ  | PA  |
| Ethanol             | 64-17-5 | Yes | Yes | Yes |

| Inventory |         |            |             |       |           |           |
|-----------|---------|------------|-------------|-------|-----------|-----------|
| Component | CAS     | Canada DSL | Canada NDSL | China | EU EINECS | EU ELNICS |
| Ethanol   | 64-17-5 | Yes        | No          | Yes   | Yes       | No        |

| Inventory (Con't.) |         |      |
|--------------------|---------|------|
| Component          | CAS     | TSCA |
| Ethanol            | 64-17-5 | Yes  |

## Canada

### Labor

#### Canada - WHMIS - Classifications of Substances

- Ethanol 64-17-5 95% TO 100% B2, D2B

#### Canada - WHMIS - Ingredient Disclosure List

- Ethanol 64-17-5 95% TO 100% 0.1 %

### Environment

#### Canada - CEPA - Priority Substances List

- Ethanol 64-17-5 95% TO 100% Not Listed

## Europe

### Other

#### EU - CLP (1272/2008) - Annex VI - Table 3.2 - Classification

- Ethanol 64-17-5 95% TO 100% F; R11

#### EU - CLP (1272/2008) - Annex VI - Table 3.2 - Concentration Limits

- Ethanol 64-17-5 95% TO 100% Not Listed

#### EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling

- Ethanol 64-17-5 95% TO 100% F R:11 S:(2)-7-16

#### EU - CLP (1272/2008) - Annex VI - Table 3.2 - Notes - Substances and Preparations

- Ethanol 64-17-5 95% TO 100% Not Listed

**EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases**

- Ethanol 64-17-5 95% TO 100% S:(2)-7-16

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## Mexico

### Other

#### Mexico - Hazard Classifications

- Ethanol 64-17-5 95% TO 100% Class = 3

#### Mexico - Regulated Substances

- Ethanol 64-17-5 95% TO 100% UN1170

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## United States

### Labor

#### U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

- Ethanol 64-17-5 95% TO 100% Not Listed

#### U.S. - OSHA - Specifically Regulated Chemicals

- Ethanol 64-17-5 95% TO 100% Not Listed

### Environment

#### U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

- Ethanol 64-17-5 95% TO 100% Not Listed

#### U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

- Ethanol 64-17-5 95% TO 100% Not Listed

#### U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

- Ethanol 64-17-5 95% TO 100% Not Listed

**U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs**

- Ethanol 64-17-5 95% TO 100% Not Listed

**U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs**

- Ethanol 64-17-5 95% TO 100% Not Listed

**U.S. - CERCLA/SARA - Section 313 - Emission Reporting**

- Ethanol 64-17-5 95% TO 100% Not Listed

**U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing**

- Ethanol 64-17-5 95% TO 100% Not Listed

**United States - California**

**Environment**

**U.S. - California - Proposition 65 - Carcinogens List**

- Ethanol 64-17-5 95% TO 100% Not Listed

**U.S. - California - Proposition 65 - Developmental Toxicity**

- Ethanol 64-17-5 95% TO 100% developmental toxicity, initial date 10/1/87 (when in alcoholic beverages)

**U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)**

- Ethanol 64-17-5 95% TO 100% Not Listed

**U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)**

- Ethanol 64-17-5 95% TO 100% Not Listed

**U.S. - California - Proposition 65 - Reproductive Toxicity - Female**

- Ethanol 64-17-5 95% TO 100% Not Listed

**U.S. - California - Proposition 65 - Reproductive Toxicity - Male**

- Ethanol 64-17-5 95% TO 100% Not Listed

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## United States - Pennsylvania

### Labor

#### U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

- Ethanol 64-17-5 95% TO 100% Not Listed

#### U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

- Ethanol 64-17-5 95% TO 100% Not Listed

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## United States - Rhode Island

### Labor

#### U.S. - Rhode Island - Hazardous Substance List

- Ethanol 64-17-5 95% TO 100% Toxic; Flammable

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## 15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

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## Section 16 - Other Information

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| <b>Last Revision Date</b>                | <ul style="list-style-type: none"><li>• 20/April/2012</li></ul>  |
| <b>Preparation Date</b>                  | <ul style="list-style-type: none"><li>• 20/April/2012</li></ul>  |
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### Key to abbreviations

NDA = No Data Available