



# SAFETY DATA SHEET

SDA 38B-93, 190 PROOF

This SDS is valid for all grades and catalog #s

## 1. IDENTIFICATION OF SUBSTANCE / MIXTURE AND OF SUPPLIER

**Product Identifier:** Denatured Ethanol  
**Synonyms:** Denatured Alcohol 38B-93: SDA 38B-93, 190; Denatured Ethanol, Ethanol Denatured with Lemon Oil  
**Other means of identification:** CAS No. 64-17-5  
EINECS No. 200-578-6

**Recommended use of the chemical and restrictions on use:**

### Supplier Details:

**Greenfield Global USA, Inc.**  
1101 Isaac Shelby Drive, Shelbyville,  
KY 40065, USA.  
Tel: 502.232.7600  
Fax: 502.633.6100  
CCN17213

**Greenfield Global USA, Inc.**  
58 Vale Road, Brookfield,  
CT 06804, USA.  
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CCN17213

**Emergency Contact:** CHEMTREC: 1.800.424.9300 (USA) / +1.703.527.3887 (International)

## 2. HAZARDS IDENTIFICATION

### Emergency Overview:

This material is HAZARDOUS by OSHA Hazard Communication definition. Flammable Liquid. Material can burn with little or no visible flame. May be irritating to the eyes, skin, and respiratory system. May cause central nervous system depression.

### OSHA Hazards:

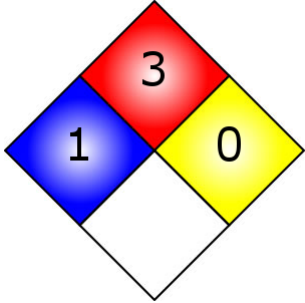
Flammable liquid, Target Organ Effect, Irritant

### Target Organs:

Central nervous system, Heart, Liver



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NFPA +1.703.527.3887 (INT)



GHS label elements, including precautionary statements



**Signal Word:**  
DANGER!

**Hazard statement(s)**

H225 Highly flammable liquid and vapor.  
H319 Causes serious eye irritation.

**Precautionary statement(s)**

P261 Avoid breathing dust/fumes/gas/mist/vapors.  
P501 Dispose of contents and container to an approved waste disposal plant.  
P240 Ground/bond container and receiving equipment.  
P337 + P313 If eye irritation persists: Get medical 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. Seek medical attention.  
  
P303 + P361 + P353 IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  
P210 Keep away from heat, sparks, open flames, and hot surfaces. No smoking.  
P233 Keep container tightly closed.  
P403 + P235 Store in a well-ventilated place. Keep cool.  
P243 Take precautionary measures against static discharge.



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P241	Use explosion-proof electrical, ventilating, and lighting equipment.
P242	Use only non-sparking tools.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves and eye and face protection.

**GHS Classification(s)**

- Eye irritation (Category 2B)
- Flammable Liquids (Category 2)
- Skin irritation (Category 2)

**Other hazards which do not result in classification:**

**Potential Health Effects:**

Organ	Description
Eyes	May cause irritation including stinging, tearing, and redness.
Ingestion	May cause dizziness, faintness, drowsiness decreased awareness or responsiveness, nausea, vomiting, staggering gait, lack of coordination, coma and death
Inhalation	High vapor concentration may cause burning sensation in nose and throat and stinging and watering in the eyes. At concentrations which cause irritation, dizziness, faintness, drowsiness, nausea and vomiting may also occur.
Skin	Skin Absorption: No harmful effects with normal skin. Prolonged or widespread contact with significantly damaged skin may result in the absorption of potentially harmful amounts.
Chronic	Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the central nervous system of the fetus, producing a collection of effects which together constitute fetal alcohol syndrome. Medical Conditions Aggravated by Overexposure: Repeated exposure to ethanol may aggravate liver injury produced from other causes. Skin contact may aggravate dermatitis.

**3. COMPOSITION AND INFORMATION ON INGREDIENTS**

<b>Chemical identity:</b>	Alcohol
<b>Common name / Synonym:</b>	Denatured Alcohol 38B-93; SDA 38B-93, 190; Denatured Ethanol, Ethanol Denatured with Lemon Oil
<b>CAS number:</b>	64-17-5
<b>EINECS number:</b>	200-578-6
<b>ICSC number:</b>	0044
<b>RTECS #:</b>	KQ6300000
<b>UN #:</b>	UN1170
<b>EC #:</b>	603-002-00-5

% Weight	Material	CAS
91.08	Ethyl Alcohol	64-17-5
1.45	Lemon Oil	8008-56-8
7.47	Water	7732-18-5



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#### **4. FIRST AID MEASURES**

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##### **General advice**

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

##### **Skin**

Immediately flush affected area with plenty of water while removing contaminated clothing. Wash contaminated clothing before reuse. Contact a doctor. If irritation persists, get medical attention.

##### **Inhalation**

Remove person to fresh air. If signs/symptoms continue, get medical attention. Give oxygen or artificial respiration as needed.

##### **Eyes**

Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.

##### **Ingestion**

DO NOT induce vomiting. If vomiting does occur, have victim lean forward to prevent aspiration. Rinse mouth with water. Seek medical attention. Never give anything by mouth to an unconscious individual.

##### **Note to Physician**

Symptoms vary with alcohol level of the blood. Mild alcohol intoxication occurs at blood levels between 0.05- 0.15 %. Approximately 25% of individuals show signs of intoxication at these levels. Above 0.15% the person is definitely under the influence of ethanol; 50-95% of individuals are clinically intoxicated at these levels. Severe poisoning occurs when the blood is ethanol level is 0.3- 0.5%. Above 0.5% the individual will be comatose and death can occur. The unabsorbed ethanol should be removed by gastric lavage after intubating the patient to prevent aspiration. Avoid the use of depressant drugs or the excessive administration of fluids.

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#### **5. FIRE FIGHTING MEASURES**

##### **Suitable (and unsuitable) extinguishing media:**

SMALL FIRE: Use dry chemicals, CO<sub>2</sub>, water spray or alcohol-resistant foam. LARGE FIRE: Use water spray, water fog or alcohol-resistant foam. Cool all affected containers with flooding quantities of water.

##### **Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):**

Carbon oxides expected to be the primary hazardous combustion product.

##### **Special protective equipment and precautions for firefighters:**

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Keep unopened containers cool by spraying with water.

##### **Unusual Fire and Explosion Hazards:**

- May produce a floating fire hazard.



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- Static ignition hazard can result from handling and use. **+1.703.527.3887 (INT)**
- Vapors may settle in low or confined spaces.
- Vapors may travel to source of ignition and flash back.

Alcohols burn with a pale blue flame which may be extremely hard to see under normal lighting conditions. Personnel may only be able to feel the heat of the fire without seeing flames. Extreme caution must be exercised in fighting alcohol fires. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire.

**Flammable Properties**

**Classification**

OSHA/NFPA Class IB Flammable Liquid.

**Flash point**

17°C (62°F) - closed cup

**Autoignition temperature**

363.0 °C (685.4 °F) - (Ethyl Alcohol)

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## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:**

Do not inhale vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

**Environmental precautions:**

Stop leak. Contain spill if possible and safe to do so. Prevent product from entering drains.

**Methods and materials for containment and cleaning up:**

Highly flammable liquid. Eliminate all sources of ignition. All equipment used when handling this product must be grounded. A vapor suppressing foam may be used to reduce vapors. Do not touch or walk through spilled material. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations. Use clean non-sparking tools to collect absorbed material.

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## 7. HANDLING AND STORAGE

**Precautions for safe handling:**

Do not get on skin or in eyes. Do not inhale vapor or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge. Open and handle container with care. Metal containers involved in the transfer of this material should be grounded and bonded.

**Conditions for safe storage, including any incompatibilities:**

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Keep container tightly closed in a cool, dry and well-ventilated place. Containers which are opened should be carefully resealed and kept upright to prevent leakage. Consult local fire codes for additional storage information. **+1 703.527.3987 (INT)**

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters, e.g., occupational exposure limit values or biological limit values:

### Occupational Exposure Limits

Component	Source	Type	Value	Note
Ethyl alcohol	US (ACGIH)	STEL	1000 ppm	Upper Respiratory Tract irritation Confirmed animal carcinogen with unknown relevance to humans
Ethyl alcohol	US (OSHA)	TWA	1000 ppm / 1,900 mg/m <sup>3</sup>	29 CFR 1910.1000 Table Z-1 Limits for Air Contaminants.
Ethyl alcohol	US (OSHA)	IDHL	3300 ppm	None
Lemon oil	TWA		10.0 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
Water	/		No exposure Limit.	

### Appropriate engineering controls:

General room or local exhaust ventilation is usually required to meet exposure limit(s). Electrical equipment should be grounded and conform to applicable electrical code.

### Individual protection measures, such as personal protective equipment:

#### Respiratory protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Eye protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Use equipment approved by appropriate government standards, such as NIOSH (US) or EN166 (EU) Maintain eye wash fountain and quick-drench facilities in work area.

#### Skin and body protection:

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

#### Hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance ( <i>physical state, color, etc.</i> )	Liquid. Colorless liquid / invisible vapor.
Odor	Characteristic
Freezing point	< -100°C (< -148°F)
Initial boiling point and boiling range	80°C (176°F) - at 760 mmHg (101.325 kPa)
Flash point	17°C (62°F) - closed cup
Evaporation rate	3.0 (butyl acetate = 1)
Flammability (solid, gas)	Flammable
Upper / Lower flammability or explosive limits	3.3%(V) / 19%(V) (for 100% ethanol)
Vapor pressure	44.6mmHg (5.94 kPa) at 20°C (68°F)
Vapor Density	1.6 (air =1)
Relative Density	6.804 lbs/gal (At 15.56°C (60°F))
Solubility(ies)	completely soluble in water (at 20°C)
Auto-ignition temperature	363°C (685.4°F) - (Ethyl Alcohol)
Formula (ETHANOL)	C <sub>2</sub> H <sub>6</sub> O
Formula (WATER)	H <sub>2</sub> O
Lemon Oil	N/A
Molecular Weight (ETHANOL)	46.07 g/mol
Molecular Weight (WATER)	18.02 g/mol

## 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	Vapors may form explosive mixture with air.
Conditions to avoid (e.g., static discharge, shock or vibration)	Heat, flames, ignition sources, and incompatibles.
Incompatible materials	Strong oxidizing agents; strong inorganic acids.
Hazardous decomposition products	Hazardous decomposition products formed under fire conditions. - Carbon oxides

## 11. TOXICOLOGICAL INFORMATION

- Ethyl Alcohol 64-17-5

### Signs and Symptoms of Exposure

Central nervous system depression, narcosis, damage to the heart. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

### Product Summary:

Ethanol is not toxic by OSHA standards. Coingestion of sedative hypnotics or tranquilizers can increase the toxic affects of ethanol.





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**Acute Toxicity:**

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LC50 (inhl)	Rat	20000ppm	10 hrs.
LC50 (Oral)	Rat	7060mg/Kg BWT	
LDLo (Oral)	Human	1400 mg/Kg BWT	

**Irritation:**

**Eyes (ETHANOL)**

Eye exposure to Ethanol generally causes transient pain, irritation, and reflex lid closure. A foreign-body sensation may persist for one to two days. Vapors produce transient stinging and tearing, but no apparent adverse effects. Transiently impaired preception of color may occur with acute ingestion or chronic alcoholism. Standard Draize eye test (rabbit) - Dose: 500 mg Reaction: Severe Dose: 500 mg/24 hrs Reaction: Mild

**Skin**

Standard Draize skin test (rabbit) - Dose: 20 mg/24 hrs Reaction: Moderate Repeated exposure may cause skin dryness or cracking.

**Carcinogenicity**

- IARC: Not classifiable as a human carcinogen.
- ACGIH: Not classifiable as a human carcinogen.
- NTP: Not classifiable as a human carcinogen.
- OSHA: Not classifiable as a human carcinogen.

**Other Hazards**

Organ	Description
Eyes	Irritating to the eyes. May cause painful sensitization to light. May cause chemical conjunctivitis and corneal damage.
Ingestion	May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause systemic toxicity with acidosis. Advanced stages can lead to respiratory failure, kidney failure, coma, and death.
Inhalation	Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation.
Skin	Mildly irritating to the skin. May cause dermatitis by de-fating the skin from prolonged or repeated contact.
Chronic	Prolonged exposure can cause liver, kidney, and heart damage. Long term exposure can cause loss of appetite, weight loss, nervousness, memory loss, mental retardation.

- Water 7732-18-5

**Product Summary:**

Do data available for the teratogenic, mutagenic, or reproductive toxicity effects of this product.

**Carcinogenicity**





**Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Other Hazards**

Organ	Description
Inhalation	May cause respiratory tract irritation upon inhalation.

- Lemon Oil 8008-56-8

**Product Summary:**

No data available for the teratogenicity, mutagenicity, or reproductive toxicity of this product. No data available to designate the product as causing specific target organ toxicity through single or repeated exposure. No data available to designate product as an aspiration hazard.

**Acute Toxicity:**

LD50 (Oral)	Rat	2,840 mg/kg	
LD 50 (Dermal)	Rabbit	> 5,000 mg/kg	

**Irritation:**

**No data available**

/

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Other Hazards**



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<b>Organ</b>	<b>Description</b>	<b>+1.703.527.3887 (INT)</b>
Eyes	Liquid may be irritating to eyes.	
Ingestion	Harmful if ingested.	
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.	
Skin	Liquid may be irritating to skin.	

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## 12. ECOLOGICAL INFORMATION

- Ethyl Alcohol 64-17-5

### **Ecotoxicity (aquatic and terrestrial, where available):**

#### **Acute Fish toxicity (ETHANOL)**

LC50 / 96 HOUR *Oncorhynchus mykiss* (rainbow trout) > 10,000 mg/l

LC50 / 96 HOUR *Pimephales promelas* (fathead minnow) > 13,400 mg/l

#### **Toxicity to aquatic plants (ETHANOL)**

Growth inhibition / 96 HOURS *Chlorella vulgaris* (Fresh water algae) 1,000 mg/l

#### **Toxicity to microorganisms (ETHANOL)**

Toxicity Threshold / *Pseudomonas putida* 6,500 mg/l

Summary: Inhibition of cell multiplication begins.

### **Persistence and degradability:**

Biodegradation is expected.

### **Bioaccumulative potential:**

Biaccumulation is unlikely

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- Water 7732-18-5

### **Ecotoxicity (aquatic and terrestrial, where available):**

#### **Ecotoxicity**

Not Applicable

### **Persistence and degradability:**

No data available

### **Bioaccumulative potential:**



**Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)**  
No data available **+1.703.527.3887 (INT)**

**Other adverse effects:**  
No data available

- Lemon Oil 8008-56-8

**Ecotoxicity (aquatic and terrestrial, where available):**

**Ecotoxicity**  
No data available

**Persistence and degradability:**

No data available

**Bioaccumulative potential:**

No data available

**Other adverse effects:**

No data available

### 13. DISPOSAL CONSIDERATIONS

**Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:**

Vapors may collect in empty containers. Treat empty containers as hazardous. Dispose of spill-clean up and other wastes in accordance with Federal, State, and local regulations.

### 14. TRANSPORT INFORMATION

**Description of waste residues and information on their safe handling and methods of disposal:**

<b>UN number</b>	UN1170
<b>UN proper shipping name</b>	Ethanol solutions
<b>Transport hazard class(es)</b>	3
<b>Packing group (if applicable)</b>	II

**IMDG**

UN-Number: UN1170 Class: 3 Packing Group: II

EMS-No: F-E, S-D

Proper shipping name: ETHANOL SOLUTIONS

Marine pollutant: No

**IATA**



**Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)**  
 UN-Number: UN1170 Class: 3 Packing Group: II **+1.703.527.3887 (INT)**  
 Proper shipping name: Ethanol solutions

## 15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question:

### OSHA Hazards

Flammable liquid, Target Organ Effect, Irritant

All ingredients are on the following inventories or are exempted from listing

Country	Notification
Australia	AICS
Canada	DSL
China	IECS
European Union	EINECS
Japan	ENCS/ISHL
Korea	ECL
New Zealand	NZIoC
Philippines	PICCS
United States of America	TSCA

### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### SARA 311/312 Hazards

Acute Health Hazard  
 Chronic Health Hazard  
 Fire Hazard

### CERCLA

No chemicals in this material with known CAS numbers are subject to the reporting requirements of CERCLA

### Massachusetts Right To Know Components

Ethanol CAS-No.64-17-5 Revision Date 2007-03-01

### Pennsylvania Right To Know Components

Ethanol CAS-No.64-17-5 Revision Date 2007-03-01



**PHARMCO**  
by Greenfield Global

**Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)  
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Lemon Oil CAS-No 8008-56-8 Revision Date 1989-08-11

**New Jersey Right To Know Components**

Ethanol CAS-No.64-17-5 Revision Date 2007-03-01

Lemon Oil CAS-No 8008-56-8 Revision Date 1989-08-11

**California Prop 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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**16. OTHER INFORMATION:  
INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS**

**Disclaimer**

Greenfield Global USA, Inc. believes that the information on this SDS was obtained from reliable sources. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, Greenfield Global USA, Inc. does not assume responsibility and expressly disclaims liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this SDS information may not be applicable. Information is correct to the best of our knowledge at the date of the SDS publication.