



SAFETY DATA SHEET

SDA 39C, 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 39C; Denatured Ethanol; SDA 39C, 190
Other means of identification: CAS No. 64-17-5
EINECS No. 200-578-6

Recommended use of the chemical and restrictions on use:

General purpose organic solvent

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.
Tel: 203.740.3471
Fax: 203.740.3481
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:

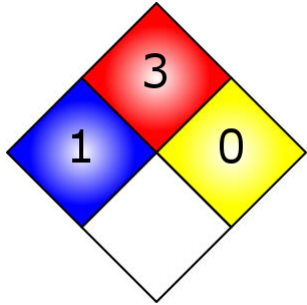
Flammable liquid, Target Organ Effect, Irritant

Target Organs:

Central nervous system, Heart, Liver



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

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.

P241

Use explosion-proof electrical, ventilating, and lighting equipment.

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

P242	Use only non-sparking tools.	+1.703.527.3887 (INT)
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, blindness, 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 Contact: Prolonged or repeated contact may cause
Skin	Skin Absorption: Prolonged or widespread contact with significantly damaged skin may result in the absorption of potentially harmful amounts. Skin Contact: Prolonged or repeated contact may cause defatting and drying of the skin.
Chronic	Effects of Repeated Overexposure: Long term repeated oral exposure to ethanol may result in the development of progressive liver injury with fibrosis. Other Health Hazards: 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

Chemical identity:	Alcohol
Common name / Synonym:	Denatured Alcohol 39C; Denatured Ethanol
CAS number:	64-17-5
EINECS number:	200-578-6
ICSC number:	0044
RTECS #:	KQ6300000
UN #:	UN1170
EC #:	603-002-00-5

% Weight	Material	CAS
1.4	Diethyl Phthalate	84-66-2
91.2	Ethyl Alcohol	64-17-5
7.5	Water	7732-18-5

4. FIRST AID MEASURES

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.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

SMALL FIRE: Use dry chemicals, CO₂, 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.



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

Unusual Fire and Explosion Hazards:

+1.703.527.3887 (INT)

- May produce a floating fire hazard.
- Static ignition hazard can result from handling and use.
- 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)

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.

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.



Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)
Conditions for safe storage, including any incompatibilities: +1.703.527.3887 (INT)
Keep container tightly closed in a cool, dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Consult local fire codes for additional storage information.

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
Diethyl Phthalate	US (ACGIH)	TWA	5 mg/m ³	
Ethyl alcohol	US (OSHA)	IDHL	3300 ppm	None
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 ³	29 CFR 1910.1000 Table Z-1 Limits for Air Contaminants.

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.

Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)
+1.703.527.3887 (INT)

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (<i>physical state, color, etc.</i>)	Liquid. Colorless liquid / invisible vapor.
Odor	Characteristic
Freezing point	-144 °C (-227.2 °F)
Initial boiling point and boiling range	78.4 °C (173.12 °F)
Flash point	17 °C (62 °F) - closed cup
Evaporation rate	3.34 (butyl acetate = 1)
Flammability (solid, gas)	Flammable
Upper / Lower flammability or explosive limits	3.3%(V) / 19%(V) (for 100% ethanol)
Vapor pressure	44.5mmHg (0.593 kPa) at 20 °C (68 °F)
Vapor Density	1.6 (air =1)
Relative Density	6.819lbs/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)
Decomposition temperature	Not pertinent
Formula (DIETHYL PHTHALATE)	C ₁₂ H ₁₄ O ₄
Formula (ETHANOL)	C ₂ H ₆ O
Formula (WATER)	H ₂ O
Molecular Weight (DIETHYL PHTHALATE)	222.24 g/mol
Molecular Weight (ETHANOL)	46.07 g/mol
Molecular Weight (WATER)	18.02 g/mol

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Vapors may form explosive mixture with air.
Conditions to avoid (e.g., static discharge, shock or vibration)	Heat, flames, and sparks. Extreme temperatures and direct sunlight.
Incompatible materials	Alkali metals, Ammonia, Oxidizing agents, Peroxides, 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 Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)

Product Summary:

+1.703.527.3887 (INT)

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

Acute Toxicity:

LC50 (inh)	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-fatting 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 Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)

Product Summary: +1.703.527.3887 (INT)

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

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

Organ	Description
Inhalation	May cause respiratory tract irritation upon inhalation.

- Diethyl Phthalate 84-66-2

Product Summary:

Has been shown to have teratogenic, carcinogenic, and reproductive effects in mice and rats.

Acute Toxicity:

LC50 (Inhalation)	Rat	> 4,640 mg/m3	6 hours
LD50 (Dermal)	Guinea Pig	> 22.4 g/kg	
LD50 (Oral)	Rat	8,600 mg/kg	

Irritation:

Eyes

Rabbit - mild eye irritation - 24 hours

Skin (DIETHYL PHTHALATE)

Skin - guinea pig - Mild skin irritation

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.



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

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
Eyes	Irritating to the eyes.
Ingestion	Harmful if ingested.
Inhalation	May be harmful if inhaled. Irritating to the respiratory tract.
Skin	Harmful if absorbed through skin. Irritating to skin.

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

- Water 7732-18-5

Ecotoxicity (aquatic and terrestrial, where available):

Ecotoxicity

Not Applicable



**Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)
+1.703.527.3887 (INT)**

Persistence and degradability:

No data available

Bioaccumulative potential:

No data available

Other adverse effects:

No data available

- Diethyl Phthalate 84-66-2
-

Ecotoxicity (aquatic and terrestrial, where available):

Acute Fish Toxicity (DIETHYL PHTHALTE)

LC50 / 96 h Rainbow trout - 12.00 mg/L

Toxicity to Aquatic Plants (DIETHYL PHTHALATE)

EC50 / 96 h Green algae- 16 mg/L

Persistence and degradability:

Aerobic Result: > 94.8 % - Readily biodegradable.

Bioaccumulative potential:

Bioaccumulation: Lepomis macrochirus (Bluegill) - 21 d Bioconcentration factor (BCF): 117

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:

UN number	UN1170
UN proper shipping name	Ethanol Solutions
Transport hazard class(es)	3
Packing group (if applicable)	II



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

IMDG

+1.703.527.3887 (INT)

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

EMS-No: F-E, S-D

Proper shipping name: Ethanol Solutions

Marine pollutant: No

IATA

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

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

Diethyl Phthalate CAS-No. 84-66-2, RQ: 1,000 lbs



PHARMCO
by Greenfield Global

Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)
Massachusetts Right To Know Components **+1.703.527.3887 (INT)**

Diethyl phthalate CAS-No. 84-66-2 Revision Date 2007-03-01

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

Pennsylvania Right To Know Components

Diethyl phthalate CAS-No. 84-66-2 Revision Date 2007-03-01

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

New Jersey Right To Know Components

Diethyl phthalate CAS-No. 84-66-2 Revision Date 2007-03-01

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

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.