

Denatured Fuel Ethanol (Anhydrous)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision Date: 07/25/2014

Version: 1.0

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

Product Identifier

Product Form: Mixture

Product Name: Denatured Fuel Ethanol (Anhydrous)

Intended Use of the Product

Use of the Substance/Mixture: Motor Fuel, Cook Stove Fuel

Name, Address, and Telephone of the Responsible Party

Company

POET Ethanol Products

3939 North Webb Rd

Wichita, KS 67226

T 316-303-1380

POETEP.com

Emergency Telephone Number

Emergency number : 800-633-8253 (PERS)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Flam. Liq. 2 H225

Eye Irrit. 2A H319

Muta. 1B H340

Carc. 1A H350

Repr. 2 H361

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)



Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H225 - Highly flammable liquid and vapor
H319 - Causes serious eye irritation
H340 - May cause genetic defects
H350 - May cause cancer
H361 - Suspected of damaging fertility or the unborn child

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 heat, sparks, open flames, hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical, ventilating, and lighting equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, eye protection, face protection, respiratory protection.
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated

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clothing. Rinse skin with water/shower.
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P370+P378 - In case of fire: Use appropriate media for extinction.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to local, regional, national, territorial, provincial, and international regulations.

Other Hazards

Other Hazards Not Contributing to the Classification:

Hazardous to the aquatic environment - Chronic Hazard Category 3

H412 - Harmful to aquatic life with long lasting effects

Flammable vapors can accumulate in head space of closed systems. Exposure may aggravate those with pre existing eye, skin, or respiratory conditions. Exposure may aggravate individuals with pre-existing skin, kidney, liver, and pulmonary disorders.

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name : Denatured Fuel Ethanol (Anhydrous)

Name	Product identifier	% (w/w)	Classification (GHS-US)
Ethyl alcohol	(CAS No) 64-17-5	60 - 100	Flam. Liq. 2, H225 Eye Irrit. 2A, H319
Gasoline, natural	(CAS No) 8006-61-9	1 - 5	Flam. Liq. 1, H224 Skin Irrit. 2, H315 Muta. 1B, H340 Carc. 1B, H350 Repr. 2, H361 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Benzene*	(CAS No) 71-43-2	0.1 - 1	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Muta. 1B, H340 Carc. 1A, H350 STOT RE 1, H372 Asp. Tox. 1, H304

Full text of H-phrases: see section 16

*The percent weight of Benzene is less than 0.06% in versions of this product that are shipped to California. The percent weight of Benzene may be less than 0.1% in other versions of this product.

SECTION 4: FIRST AID MEASURES

Description of 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).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation persists.

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Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation persists.

Ingestion: Rinse mouth. Do NOT induce vomiting. Get medical advice and attention.

Most Important Symptoms and Effects Both Acute and Delayed

General: Eye irritation. May cause cancer. May cause genetic defects. Suspected of damaging fertility. Suspected of damaging the unborn child.

Inhalation: Prolonged exposure to liquid may cause a mild irritation. High concentration of vapours may induce: headache, dizziness, drowsiness, nausea and vomiting.

Skin Contact: Causes mild skin irritation.

Eye Contact: Causes serious eye irritation.

Ingestion: Ingestion may cause nausea, vomiting and diarrhea. Gastrointestinal irritation. Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: Not available.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO₂).

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Highly flammable liquid and vapor.

Explosion Hazard: May form flammable/explosive vapor-air mixture.

Reactivity: Hazardous reactions will not occur under normal conditions.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Carbon oxides (CO, CO₂).

Other information: Alcohols burn with a pale blue flame that is difficult to see under normal lighting conditions.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Use special care to avoid static electric charges. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin, or on clothing. Do NOT breathe (vapors, mist, spray).

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection. Use appropriate personal protection equipment (PPE).

Emergency Procedures: Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Clear up spills immediately and dispose of waste safely. Absorb and/or contain spill with inert material, then place in suitable container. Contact competent authorities after a spill. Do not take up in combustible material such as: saw dust or cellulosic material. Use only non-sparking tools.

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Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: Do not pressurize, cut or weld containers. Handle empty containers with care because residual vapors are flammable. Flammable vapors can accumulate in head space of closed systems. Repeated or prolonged skin contact may cause dermatitis and defatting.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Do not eat, drink or smoke when using this product.

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, ventilating, and lighting equipment. Comply with applicable regulations.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep in fireproof place. Keep/Store away from extremely high or low temperatures, direct sunlight, heat sources, ignition sources, open flames, incompatible materials.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers.

Specific End Use(s)

Motor Fuel

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Ethyl alcohol (64-17-5)		
Mexico	OEL TWA (mg/m ³)	1900 mg/m ³
Mexico	OEL TWA (ppm)	1000 ppm
USA ACGIH	ACGIH STEL (ppm)	1000 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1900 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	1900 mg/m ³
USA NIOSH	NIOSH REL (TWA) (ppm)	1000 ppm
USA IDLH	US IDLH (ppm)	3300 ppm (10% LEL)
Alberta	OEL TWA (mg/m ³)	1880 mg/m ³
Alberta	OEL TWA (ppm)	1000 ppm
British Columbia	OEL STEL (ppm)	1000 ppm
Manitoba	OEL STEL (ppm)	1000 ppm
New Brunswick	OEL TWA (mg/m ³)	1880 mg/m ³
New Brunswick	OEL TWA (ppm)	1000 ppm
Newfoundland & Labrador	OEL STEL (ppm)	1000 ppm
Nova Scotia	OEL STEL (ppm)	1000 ppm
Nunavut	OEL STEL (mg/m ³)	2355 mg/m ³
Nunavut	OEL STEL (ppm)	1250 ppm
Nunavut	OEL TWA (mg/m ³)	1884 mg/m ³
Nunavut	OEL TWA (ppm)	1000 ppm
Northwest Territories	OEL STEL (mg/m ³)	2355 mg/m ³
Northwest Territories	OEL STEL (ppm)	1250 ppm
Northwest Territories	OEL TWA (mg/m ³)	1884 mg/m ³
Northwest Territories	OEL TWA (ppm)	1000 ppm
Ontario	OEL STEL (ppm)	1000 ppm
Prince Edward Island	OEL STEL (ppm)	1000 ppm
Québec	VEMP (mg/m ³)	1880 mg/m ³

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Québec	VEMP (ppm)	1000 ppm
Saskatchewan	OEL STEL (ppm)	1250 ppm
Saskatchewan	OEL TWA (ppm)	1000 ppm
Yukon	OEL STEL (mg/m ³)	1900 mg/m ³
Yukon	OEL STEL (ppm)	1000 ppm
Yukon	OEL TWA (mg/m ³)	1900 mg/m ³
Yukon	OEL TWA (ppm)	1000 ppm

Gasoline, natural (8006-61-9)

Alberta	OEL STEL (ppm)	500 ppm
Alberta	OEL TWA (ppm)	300 ppm
New Brunswick	OEL STEL (mg/m ³)	1480 mg/m ³
New Brunswick	OEL STEL (ppm)	500 ppm
New Brunswick	OEL TWA (mg/m ³)	890 mg/m ³
New Brunswick	OEL TWA (ppm)	300 ppm
Québec	VECD (mg/m ³)	1480 mg/m ³
Québec	VECD (ppm)	500 ppm
Québec	VEMP (mg/m ³)	890 mg/m ³
Québec	VEMP (ppm)	300 ppm
Yukon	OEL TWA (mg/m ³)	625 mg/m ³
Yukon	OEL TWA (ppm)	500 ppm

Benzene (71-43-2)

Mexico	OEL TWA (mg/m ³)	3.2 mg/m ³
Mexico	OEL TWA (ppm)	1 ppm
Mexico	OEL STEL (mg/m ³)	16 mg/m ³
Mexico	OEL STEL (ppm)	5 ppm
USA ACGIH	ACGIH TWA (ppm)	0.5 ppm
USA ACGIH	ACGIH STEL (ppm)	2.5 ppm
USA OSHA	OSHA PEL (TWA) (ppm)	1 ppm
USA OSHA	OSHA PEL (STEL) (ppm)	5 ppm (see 29 CFR 1910.1028)
USA OSHA	OSHA PEL (Ceiling) (ppm)	25 ppm
USA NIOSH	NIOSH REL (TWA) (ppm)	0.1 ppm
USA NIOSH	NIOSH REL (STEL) (ppm)	1 ppm
USA IDLH	US IDLH (ppm)	500 ppm
Alberta	OEL STEL (mg/m ³)	8 mg/m ³
Alberta	OEL STEL (ppm)	2.5 ppm
Alberta	OEL TWA (mg/m ³)	1.6 mg/m ³
Alberta	OEL TWA (ppm)	0.5 ppm
British Columbia	OEL STEL (ppm)	2.5 ppm
British Columbia	OEL TWA (ppm)	0.5 ppm
Manitoba	OEL STEL (ppm)	2.5 ppm
Manitoba	OEL TWA (ppm)	0.5 ppm
New Brunswick	OEL STEL (mg/m ³)	8 mg/m ³
New Brunswick	OEL STEL (ppm)	2.5 ppm
New Brunswick	OEL TWA (mg/m ³)	1.6 mg/m ³
New Brunswick	OEL TWA (ppm)	0.5 ppm
Newfoundland & Labrador	OEL STEL (ppm)	2.5 ppm
Newfoundland & Labrador	OEL TWA (ppm)	0.5 ppm
Nova Scotia	OEL STEL (ppm)	2.5 ppm
Nova Scotia	OEL TWA (ppm)	0.5 ppm
Nunavut	OEL STEL (mg/m ³)	80 mg/m ³

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Nunavut	OEL STEL (ppm)	25 ppm
Nunavut	OEL TWA (mg/m ³)	32 mg/m ³
Nunavut	OEL TWA (ppm)	10 ppm
Northwest Territories	OEL STEL (mg/m ³)	80 mg/m ³
Northwest Territories	OEL STEL (ppm)	25 ppm
Northwest Territories	OEL TWA (mg/m ³)	32 mg/m ³
Northwest Territories	OEL TWA (ppm)	10 ppm
Ontario	OEL STEL (ppm)	2.5 ppm (designated substances regulation)
Ontario	OEL TWA (ppm)	0.5 ppm (designated substance regulation)
Prince Edward Island	OEL STEL (ppm)	2.5 ppm
Prince Edward Island	OEL TWA (ppm)	0.5 ppm
Québec	VECD (mg/m ³)	15.5 mg/m ³
Québec	VECD (ppm)	5 ppm
Québec	VEMP (mg/m ³)	3 mg/m ³
Québec	VEMP (ppm)	1 ppm
Yukon	OEL Ceiling (mg/m ³)	32 mg/m ³
Yukon	OEL Ceiling (ppm)	10 ppm
Yukon	OEL TWA (mg/m ³)	32 mg/m ³

Exposure Controls

Appropriate Engineering Controls: Ensure all national/local regulations are observed. Gas detectors should be used when flammable gases/vapours may be released. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof equipment. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment: Gloves. Protective goggles. Insufficient ventilation: wear respiratory protection. Protective clothing.



Materials for Protective Clothing: Chemically resistant materials and fabrics. Wear fire/flamm resistant/retardant clothing.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: Chemical goggles or safety glasses.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: Use NIOSH-approved air-purifying or supplied-air respirator where airborne concentrations of vapor or mist are expected to exceed exposure limits.

Thermal Hazard Protection: Wear suitable protective clothing.

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

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Clear, colorless liquid
Odor	: Alcohol
Odor Threshold	: Not available
pH	: Not available
Relative Evaporation Rate (butylacetate=1)	: Not available
Melting Point	: Not available
Freezing Point	: Not available
Boiling Point	: 78.5°C (173.3°F)
Flash Point	: <0°C (32°F)

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Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not available
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available
Relative Vapor Density at 20 °C	: Not available
Relative Density	: Not available
Specific Gravity	: 0.793
Solubility	: Miscible/Infinite
Log Pow	: Not available
Log Kow	: Not available
Viscosity	: Low
Explosion Data – Sensitivity to Mechanical Impact	: Not available
Explosion Data – Sensitivity to Static Discharge	: Flammable liquid

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Hazardous reactions will not occur under normal conditions.

Chemical Stability: Highly flammable liquid and vapor. May form flammable/explosive vapor-air mixture.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Direct sunlight. Extremely high or low temperatures. Open flame. Ignition sources. Incompatible materials.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers.

Hazardous Decomposition Products: Carbon oxides (CO, CO₂). May release flammable gases.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity : Not classified

LD50 and LC50 Data Not available

Skin Corrosion/Irritation: Not classified

Serious Eye Damage/Irritation: Causes serious eye irritation.

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: May cause genetic defects.

Teratogenicity: Not available

Carcinogenicity: May cause cancer.

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Prolonged exposure to liquid may cause a mild irritation. High concentration of vapours may induce: headache, dizziness, drowsiness, nausea and vomiting.

Symptoms/Injuries After Skin Contact: Causes mild skin irritation.

Symptoms/Injuries After Eye Contact: Causes serious eye irritation.

Symptoms/Injuries After Ingestion: Ingestion may cause nausea, vomiting and diarrhea. Gastrointestinal irritation. Ingestion is likely to be harmful or have adverse effects.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data

Ethyl alcohol (64-17-5)	
LD50 Oral Rat	7060 mg/kg
LC50 Inhalation Rat (mg/l)	124.7 mg/l (Exposure time: 4 h)

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Gasoline, natural (8006-61-9)	
LC50 Inhalation Rat (mg/l)	300 g/m ³ (Exposure time: 5 min)
Benzene (71-43-2)	
LD50 Oral Rat	1800 mg/kg
LC50 Inhalation Rat (ppm)	13050 - 14380 ppm (Exposure time: 4 h)
Gasoline, natural (8006-61-9)	
IARC Group	2B
Benzene (71-43-2)	
IARC Group	1
National Toxicity Program (NTP) Status	1, 2

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: Harmful to aquatic life with long lasting effects.

Ethyl alcohol (64-17-5)	
LC50 Fish 1	9.468 (9.468 - 12.624) mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static]) converted from ml/l
EC50 Daphnia 1	9268 (9268 - 14221) mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC 50 Fish 2	100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 2	10800 mg/l (Exposure time: 24 h - Species: Daphnia magna)
Gasoline, natural (8006-61-9)	
LC50 Fish 1	56 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 Other Aquatic Organisms 1	4700 mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata)
Benzene (71-43-2)	
LC50 Fish 1	10.7 - 14.7 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	8.76 - 15.6 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 Other Aquatic Organisms 1	29 mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata)
LC 50 Fish 2	5.3 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])
EC50 Daphnia 2	10 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Persistence and Degradability

Denatured Fuel Ethanol (Anhydrous)	
Persistence and Degradability	May cause long-term adverse effects in the environment.
Ethyl alcohol (64-17-5)	
Persistence and Degradability	Not established.

Bioaccumulative Potential

Denatured Fuel Ethanol (Anhydrous)	
Bioaccumulative Potential	Not established.
Ethyl alcohol (64-17-5)	
Log Pow	-0.32
Bioaccumulative Potential	Not established.
Gasoline, natural (8006-61-9)	
Log Pow	2.1 - 6.0
Benzene (71-43-2)	
BCF fish 1	3.5 - 4.4
Log Pow	1.83

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

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SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

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

SECTION 14: TRANSPORT INFORMATION

In Accordance With ICAO/IATA/DOT/TDG

For Domestic shipping in the US

UN Number

UN-No.(DOT): 1987

DOT NA no.: UN1987

UN Proper Shipping Name

DOT Proper Shipping Name : Alcohols, n.o.s.

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

Hazard Labels (DOT) : 3 - Flammable liquids



Packing Group (DOT)

: II - Medium Danger

DOT Special Provisions (49 CFR 172.102)

: 172 - This entry includes alcohol mixtures containing up to 5% petroleum products.

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.

T7 - 4 178.274(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.

TP8 - A portable tank having a minimum test pressure of 1.5 bar (150 kPa) may be used when the flash point of the hazardous material transported is greater than 0 C (32 F).

TP28 - A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

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

Additional Information

Emergency Response Guide (ERG) Number

: 127

Transport by sea

DOT Vessel Stowage Location

: B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

Air transport

DOT Quantity Limitations Passenger Aircraft/Rail (49 CFR 173.27) : 5 L

DOT Quantity Limitations Cargo Aircraft Only (49 CFR 175.75) : 60 L

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For International Shipping

UN Number

UN-No.(DOT): 3475

DOT NA no.: UN3475

UN Proper Shipping Name

DOT Proper Shipping Name

Transport Document Description

Department of Transportation (DOT) Hazard Classes

Hazard Labels (DOT)

: Ethanol and gasoline mixture

: UN3475, Ethanol and gasoline mixture, 3, II

: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

: 3 - Flammable liquid



Packing Group (DOT)

DOT Special Provisions (49 CFR 172.102)

: II - Medium Danger

: 144 - If transported as a residue in an underground storage tank (UST), as defined in 40 CFR 280.12, that has been cleaned and purged or rendered inert according to the American Petroleum Institute (API) Standard 1604 (IBR, see 171.7 of this subchapter), then the tank and this material are not subject to any other requirements of this subchapter. However, sediments remaining in the tank that meet the definition for a hazardous material are subject to the applicable regulations of this subchapter.

177 - Gasoline, or, ethanol and gasoline mixtures, for use in internal combustion engines (e.g., in automobiles, stationary engines and other engines) must be assigned to Packing Group II regardless of variations in volatility.

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 - 2.65 178.274(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.

DOT Packaging Exceptions (49 CFR 173.xxx)

: 150

DOT Packaging Non Bulk (49 CFR 173.xxx)

: 202

DOT Packaging Bulk (49 CFR 173.xxx)

: 242

Additional Information

Emergency Response Guide (ERG) Number

: 127

Transport by sea

DOT Vessel Stowage Location

: E - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.

Air transport

DOT Quantity Limitations Passenger Aircraft/Rail (49 CFR 173.27)

: 5L

DOT Quantity Limitations Cargo Aircraft Only (49 CFR 175.75)

: 60L

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Denatured Fuel Ethanol (Anhydrous)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Denatured Fuel Ethanol (Anhydrous)	
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard
Ethyl alcohol (64-17-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Gasoline, natural (8006-61-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Benzene (71-43-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 313 (Specific toxic chemical listings)	
RQ (Reportable Quantity, Section 304 of EPA's List of Lists):	10 lb
SARA Section 313 - Emission Reporting	0.1 %

US State Regulations

Ethyl alcohol (64-17-5)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.
U.S. - California - Proposition 65 - Developmental Toxicity	WARNING: This product contains chemicals known to the State of California to cause birth defects.
Benzene (71-43-2)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.
U.S. - California - Proposition 65 - Developmental Toxicity	WARNING: This product contains chemicals known to the State of California to cause birth defects.
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	WARNING: This product contains chemicals known to the State of California to cause (Male) reproductive harm.
Ethyl alcohol (64-17-5)	
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min) U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr) U.S. - Hawaii - Occupational Exposure Limits - TWAs U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs) U.S. - Idaho - Occupational Exposure Limits - TWAs U.S. - Maine - Chemicals of High Concern U.S. - Massachusetts - Allowable Ambient Limits (AALs) U.S. - Massachusetts - Allowable Threshold Concentrations (ATCs) U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1 U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2 U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1 U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2 U.S. - Massachusetts - Right To Know List U.S. - Massachusetts - Threshold Effects Exposure Limits (TELs) U.S. - Michigan - Occupational Exposure Limits - TWAs U.S. - Minnesota - Chemicals of High Concern U.S. - Minnesota - Hazardous Substance List U.S. - Minnesota - Permissible Exposure Limits - TWAs U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - New Jersey - Special Health Hazards Substances List	

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U.S. - New York - Occupational Exposure Limits - TWAs
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 1-Hour
U.S. - Oregon - Permissible Exposure Limits - TWAs
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Texas - City of Austin - Aerosol Paint and Glue Restrictions
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Vermont - Permissible Exposure Limits - TWAs
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Washington - Permissible Exposure Limits - TWAs

Gasoline, natural (8006-61-9)

U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities
U.S. - Hawaii - Occupational Exposure Limits - TWAs
U.S. - Illinois - Toxic Air Contaminant Carcinogens
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Right To Know List
U.S. - Michigan - Occupational Exposure Limits - STELs
U.S. - Michigan - Occupational Exposure Limits - TWAs
U.S. - Minnesota - Chemicals of High Concern
U.S. - Minnesota - Hazardous Substance List
U.S. - Minnesota - Permissible Exposure Limits - STELs
U.S. - Minnesota - Permissible Exposure Limits - TWAs
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances
U.S. - New Jersey - Environmental Hazardous Substances List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New Jersey - Special Health Hazards Substances List
U.S. - Tennessee - Occupational Exposure Limits - STELs
U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Vermont - Permissible Exposure Limits - STELs
U.S. - Vermont - Permissible Exposure Limits - TWAs
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Washington - Permissible Exposure Limits - TWAs

Benzene (71-43-2)

U.S. - California - Priority Toxic Pollutants - Human Health Criteria
U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)
U.S. - California - SCAQMD - Toxic Air Contaminants - Carcinogens
U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Acute
U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Chronic
U.S. - California - SDAPCD - Toxic Air Contaminants - Carcinogenic Impacts Must Be Calculated
U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)
U.S. - Colorado - Groundwater Quality Standards
U.S. - Colorado - Hazardous Wastes - Discarded Chemical Products, Off-Specification Species, Container and Spill Residues
U.S. - Colorado - Hazardous Wastes - Maximum Concentration for the Toxicity Characteristics

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U.S. - Colorado - Primary Drinking Water Regulations - Maximum Contaminant Level Goals (MCLGs)
U.S. - Colorado - Primary Drinking Water Regulations - Maximum Contaminant Levels (MCLs)
U.S. - Connecticut - Carcinogenic Substances
U.S. - Connecticut - Drinking Water Quality Standards - Maximum Contaminant Levels
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
U.S. - Connecticut - Volatile Substances
U.S. - Connecticut - Water Quality Standards - Consumption of Organisms Only
U.S. - Connecticut - Water Quality Standards - Consumption of Water and Organisms
U.S. - Connecticut - Water Quality Standards - Health Designations
U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities
U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
U.S. - Florida - Drinking Water Standards - Volatile Organic Contaminants - Maximum Contaminant Levels (MCLs)
U.S. - Georgia - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Hawaii - Occupational Exposure Limits - Ceilings
U.S. - Hawaii - Occupational Exposure Limits - STELs
U.S. - Hawaii - Occupational Exposure Limits - TWAs
U.S. - Idaho - Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations
U.S. - Idaho - Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)
U.S. - Idaho - Occupational Exposure Limits - Acceptable Maximum Peak Above the Ceiling Concentration for an 8-Hour Shift
U.S. - Idaho - Occupational Exposure Limits - Ceilings
U.S. - Idaho - Occupational Exposure Limits - TWAs
U.S. - Illinois - Toxic Air Contaminant Carcinogens
U.S. - Illinois - Toxic Air Contaminants
U.S. - Louisiana - Reportable Quantity List for Pollutants
U.S. - Maine - Air Pollutants - Hazardous Air Pollutants
U.S. - Maine - Chemicals of High Concern
U.S. - Maryland - Surface Water Quality Standards - Consumption of Organisms Only
U.S. - Maryland - Surface Water Quality Standards - Consumption of Water and Organisms
U.S. - Massachusetts - Allowable Ambient Limits (AALs)
U.S. - Massachusetts - Allowable Threshold Concentrations (ATCs)
U.S. - Massachusetts - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Right To Know List
U.S. - Massachusetts - Threshold Effects Exposure Limits (TEELs)
U.S. - Massachusetts - Toxics Use Reduction Act
U.S. - Michigan - Occupational Exposure Limits - Skin Designations
U.S. - Michigan - Occupational Exposure Limits - STELs
U.S. - Michigan - Occupational Exposure Limits - TWAs
U.S. - Michigan - Polluting Materials List
U.S. - Minnesota - Chemicals of High Concern
U.S. - Minnesota - Groundwater Health Risk Limits
U.S. - Minnesota - Hazardous Substance List
U.S. - Missouri - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Nebraska - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Nebraska - Maximum Concentration of Contaminants for the Toxicity Characteristic
U.S. - New Hampshire - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - New Hampshire - Prohibited Volatile Organic Compounds
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour

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U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual
U.S. - New Jersey - Control and Prohibition of Air Pollution by Toxic Substances
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances
U.S. - New Jersey - Environmental Hazardous Substances List
U.S. - New Jersey - Primary Drinking Water Standards - Maximum Contaminant Levels - MCLs
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New Jersey - Special Health Hazards Substances List
U.S. - New Jersey - Water Quality - Ground Water Quality Criteria
U.S. - New Jersey - Water Quality - Practical Quantitation Levels (PQLs)
U.S. - New Mexico - Water Quality - Standards for Ground Water of 10,000 mg/L TDS Concentration or Less
U.S. - New York - Occupational Exposure Limits - Ceilings
U.S. - New York - Occupational Exposure Limits - Skin Designations
U.S. - New York - Priority Chemical Avoidance List
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances
U.S. - North Carolina - Control of Toxic Air Pollutants
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 1-Hour
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour
U.S. - North Dakota - Air Pollutants - Unit Risk Factors
U.S. - North Dakota - Hazardous Wastes - Discarded Chemical Products, Off-Specification Species, Container and Spill Residues
U.S. - North Dakota - Hazardous Wastes - Maximum Concentration for the Toxicity Characteristic
U.S. - North Dakota - Water Quality Standards - Human Health Value for Class III
U.S. - North Dakota - Water Quality Standards - Human Health Value for Classes I, IA, II
U.S. - Oregon - Permissible Exposure Limits - Ceilings
U.S. - Oregon - Permissible Exposure Limits - STELs
U.S. - Oregon - Permissible Exposure Limits - TWAs
U.S. - Pennsylvania - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 1-Hour
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 24-Hour
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - Annual
U.S. - Rhode Island - Water Quality Standards - Acute Freshwater Aquatic Life Criteria
U.S. - Rhode Island - Water Quality Standards - Carcinogens
U.S. - Rhode Island - Water Quality Standards - Chronic Freshwater Aquatic Life Criteria
U.S. - Rhode Island - Water Quality Standards - Human Health Criteria for Consumption of Aquatic Organisms Only
U.S. - Rhode Island - Water Quality Standards - Human Health Criteria for Consumption of Water and Aquatic Organisms
U.S. - South Carolina - Maximum Contaminant Levels (MCLs)
U.S. - South Carolina - Toxic Air Pollutants - Maximum Allowable Concentrations
U.S. - South Carolina - Toxic Air Pollutants - Pollutant Categories
U.S. - Tennessee - Occupational Exposure Limits - Ceilings
U.S. - Tennessee - Occupational Exposure Limits - STELs
U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Texas - City of Austin - Aerosol Paint and Glue Restrictions
U.S. - Texas - Drinking Water Standards - Maximum Contaminant Levels (MCLs)
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Utah - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Vermont - Hazardous Waste - Hazardous Constituents
U.S. - Vermont - Hazardous Waste - Maximum Contaminant Concentration for Toxicity
U.S. - Vermont - Permissible Exposure Limits - Ceilings
U.S. - Vermont - Permissible Exposure Limits - STELs
U.S. - Vermont - Permissible Exposure Limits - TWAs

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U.S. - Virginia - Water Quality Standards - Known or Suspected Carcinogens
U.S. - Virginia - Water Quality Standards - Public Water Supply Effluent Limits
U.S. - Virginia - Water Quality Standards - Surface Waters Not Used for the Public Water Supply Effluent Limits
U.S. - Washington - Dangerous Waste - Dangerous Waste Constituents List
U.S. - Washington - Dangerous Waste - Discarded Chemical Products List
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Washington - Permissible Exposure Limits - TWAs
U.S. - West Virginia - Air Quality - Toxic Air Pollutant Emission Limits
U.S. - West Virginia - Water Quality - Groundwater Standards - Ceiling Concentrations
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 25 Feet to Less Than 40 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 40 Feet to Less Than 75 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet

Canadian Regulations

Denatured Fuel Ethanol (Anhydrous)

WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects Class B Division 2 - Flammable Liquid
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Ethyl alcohol (64-17-5)

Listed on the Canadian DSL (Domestic Substances List) inventory.

Listed on the Canadian Ingredient Disclosure List

WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision B - Toxic material causing other toxic effects
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Gasoline, natural (8006-61-9)

Listed on the Canadian DSL (Domestic Substances List) inventory.

Listed on the Canadian Ingredient Disclosure List

WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects
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Benzene (71-43-2)

Listed on the Canadian DSL (Domestic Substances List) inventory.

Listed on the Canadian Ingredient Disclosure List

WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects
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This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION

Revision date : 04/11/2014

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200

GHS Full Text Phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3
Asp. Tox. 1	Aspiration hazard Category 1

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Carc. 1A	Carcinogenicity Category 1A
Carc. 1B	Carcinogenicity Category 1B
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 1	Flammable liquids Category 1
Flam. Liq. 2	Flammable liquids Category 2
Muta. 1B	Germ cell mutagenicity Category 1B
Repr. 2	Reproductive toxicity Category 2
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H224	Extremely flammable liquid and vapor
H225	Highly flammable liquid and vapor
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness
H340	May cause genetic defects
H350	May cause cancer
H361	Suspected of damaging fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

Party Responsible for the Preparation of This Document

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

North America GHS US 2012 & WHMIS