

## Safety Data Sheet



### Section 1: Identification

#### Product identifier

**Product Name** • Denatured alcohol

**Synonyms** • Ethanol 95%

**SDS Number/Grade** • 0021NOR001

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

**Recommended use** • Component in automotive fuels

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

**Manufacturer** • Northern Tier Energy  
301 St. Paul Park Road  
St. Paul Park, MN 55071  
United States  
www.ntenergy.com

**Telephone (General)** • 651-459-9771

#### Emergency telephone number

**Chemtrec** • 800-424-9300

### Section 2: Hazard Identification

#### United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

#### Classification of the substance or mixture

**OSHA HCS 2012**

- Flammable Liquids 2
- Skin Irritation 2
- Eye Irritation 2
- Acute Toxicity Inhalation 3
- Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects
- Germ Cell Mutagenicity 2
- Carcinogenicity 2

#### Label elements

**OSHA HCS 2012**

**DANGER**



**Hazard statements** • Highly flammable liquid and vapour  
Causes skin irritation

Causes serious eye irritation  
Toxic if inhaled  
May cause drowsiness or dizziness  
Suspected of causing genetic defects.  
Suspected of causing cancer.

### Precautionary statements

- Prevention** • Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.  
Keep container tightly closed.  
Ground and/or bond container and receiving equipment.  
Use explosion-proof electrical/ventilating/lighting/equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Avoid breathing mists, vapours, and/or spray.  
Wash thoroughly after handling.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/protective clothing/eye protection/face protection.
- Response** • In case of fire: Use appropriate media for extinction.  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
Call a POISON CENTER or doctor/physician.  
If on skin: Wash with plenty of water .  
Take off contaminated clothing and wash before reuse.  
Specific treatment, see supplemental first aid information.  
If skin irritation occurs: Get medical advice/attention.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical advice/attention.  
IF exposed or concerned: Get medical advice/attention.
- Storage/Disposal** • Store in a well-ventilated place. Keep container tightly closed.  
Keep cool.  
Store locked up.  
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

### Other hazards

#### OSHA HCS 2012

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

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### Canada

According to: WHMIS

### Classification of the substance or mixture

#### WHMIS

- Flammable Liquids - B2  
Other Toxic Effects - D2A  
Other Toxic Effects - D2B

### Label elements

#### WHMIS



- Flammable Liquids - B2  
Other Toxic Effects - D2A  
Other Toxic Effects - D2B

### Other hazards

#### WHMIS

- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

## Section 3 - Composition/Information on Ingredients

### Substances

- Material does not meet the criteria of a substance.

### Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Ethanol	CAS:64-17-5	95% TO 99%	Ingestion/Oral-Rat LD50 • 7060 mg/kg Inhalation-Rat LC50 • 5900 mg/m <sup>3</sup> 6 Hour(s)	OSHA HCS 2012: Flam. Liq. 2; Acute Tox. 3; Skin Irrit. 2; Eye Irrit. 2; Muta. 2; STOT SE 3; Narc.	NDA
Gasoline, natural	CAS:8006- 61-9	1% TO 5%	Inhalation-Rat LC50 • 300 g/m <sup>3</sup> 5 Minute(s)	OSHA HCS 2012: Flam. Liq. 1; Eye Irrit. 2; Carc. 2 Asp. Tox. 1	NDA

## Section 4: First-Aid Measures

### Description of first aid measures

#### Inhalation

- Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Get medical attention if symptoms occur.

#### Skin

- In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing. Wash skin with soap and water. 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

- Do NOT induce vomiting. Obtain medical attention immediately if ingested.

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

- Refer to Section 11 - Toxicological Information.

### 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: Fire-Fighting Measures

### Extinguishing media

- Suitable Extinguishing Media** • For small fires, Class B fire extinguishing media such as CO<sub>2</sub>, dry chemical, foam (AFFF/ATC) or water spray.  
For large fires, water spray, fog or foam (AFFF/ATC)

#### Unsuitable Extinguishing Media

- Avoid using straight water streams.

### Special hazards arising from the substance or mixture

#### Unusual Fire and Explosion

- HIGHLY FLAMMABLE:** Will be easily ignited by heat, sparks or flames.

**Hazards**

Containers may explode when heated.  
 Many liquids are lighter than water.  
 Vapors may form explosive mixtures with air.  
 Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).  
 Vapors may travel to source of ignition and flash back.  
 Vapor explosion hazard indoors, outdoors or in sewers.  
 Runoff to sewer may create fire or explosion hazard.

**Hazardous Combustion Products**

- No data available

### Advice for firefighters

- Structural firefighters' protective clothing will only provide limited protection. Wear positive pressure self-contained breathing apparatus (SCBA). Move containers from fire area if you can do it without risk.  
 LARGE FIRES: Cool containers with flooding quantities of water until well after fire is out.

## Section 6 - Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions**

- Ventilate enclosed areas. Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Emergency Procedures**

- 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) ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

### Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.

### Methods and material for containment and cleaning up

**Containment/Clean-up Measures**

- 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.  
 A vapor suppressing foam may be used to reduce vapors.  
 All equipment used when handling the product must be grounded.  
 LARGE SPILLS: Dike far ahead of liquid spill for later disposal.  
 LARGE SPILLS: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

## Section 7 - Handling and Storage

### Precautions for safe handling

**Handling**

- Use only in well ventilated areas. Avoid contact with heat and ignition sources. Do not use sparking tools. Take precautionary measures against static charges. All equipment used when handling the product must be grounded. Never siphon this product by mouth. Do not cut, drill, grind or weld on empty containers since they may contain explosive residues. Wear appropriate personal protective equipment, avoid direct contact. Avoid breathing mist, vapours and/or spray. Avoid contact with skin, eyes, and clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

### Conditions for safe storage, including any incompatibilities

**Storage**

- Keep container tightly closed. Store in appropriately labeled containers. Store in a cool/low-temperature, well-ventilated place.

## Section 8 - Exposure Controls/Personal Protection

### Control parameters

Exposure Limits/Guidelines				
	Result	ACGIH	NIOSH	OSHA
Ethanol (64-17-5)	TWAs	Not established	1000 ppm TWA; 1900 mg/m <sup>3</sup> TWA	1000 ppm TWA; 1900 mg/m <sup>3</sup> TWA
	STELs	1000 ppm STEL	Not established	Not established

### Exposure controls

#### Engineering Measures/Controls

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Use explosion-proof electrical/ventilating/lighting/equipment.

#### Personal Protective Equipment

##### Respiratory

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

##### Eye/Face

- Wear safety goggles.

##### Skin/Body

- Wear appropriate gloves.

#### Environmental Exposure Controls

- Follow best practice for site management and disposal of waste. Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

#### Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

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

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

## Section 9 - Physical and Chemical Properties

### Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Colorless liquid.
Color	Colorless	Odor	No data available
Odor Threshold	No data available		
General Properties			
Boiling Point	165 to 175 F(73.8889 to 79.4444 C)	Melting Point/Freezing Point	No data available
Decomposition Temperature	No data available	pH	Neutral
Specific Gravity/Relative Density	= 0.79 Water=1	Water Solubility	Appreciable 10 to 99 %
Viscosity	No data available		
Volatility			
Vapor Pressure	43 to 47 mmHg (torr)	Vapor Density	1.6 Air=1
Evaporation Rate	No data available	Volatiles (Wt.)	100 %
Volatiles (Vol.)	100 %		
Flammability			
Flash Point	< -5 F(< -20.5556 C)	UEL	No data available
LEL	No data available	Autoignition	No data available
Flammability (solid, gas)	No data available		

**Environmental**

Octanol/Water Partition coefficient No data available

**Section 10: Stability and Reactivity****Reactivity**

- No dangerous reaction known under conditions of normal use.

**Chemical stability**

- Stable under normal temperatures and pressures.

**Possibility of hazardous reactions**

- Hazardous polymerization will not occur.

**Conditions to avoid**

- Excessive heat, sources of ignition and open flames.

**Incompatible materials**

- Strong oxidizers such as nitrates, chlorates, peroxides.

**Hazardous decomposition products**

- Carbon monoxide and carbon dioxide.

**Section 11 - Toxicological Information****Information on toxicological effects**

		Components
Ethanol (95% TO 99%)	64-17- 5	<p><b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 7 g/kg; Ingestion/Oral-Man TDLo • 3371 µL/kg; <i>Behavioral:Altered sleep time (including change in righting reflex); Behavioral:Excitement; Behavioral:Coma;</i> Ingestion/Oral-Rat TDLo • 8000 mg/kg; <i>Brain and Coverings:Other degenerative changes; Cardiac:Cardiomyopathy including infarction;</i> <i>Liver:Multiple effects;</i> Inhalation-Rat LC50 • 5900 mg/m<sup>3</sup> 6 Hour(s); Intraperitoneal-Rat TDLo • 0.5 g/kg; <i>Behavioral:Changes in psychophysiological tests;</i></p> <p><b>Irritation:</b> Eye-Rabbit • 500 mg • Severe irritation; Skin-Rabbit • 20 mg 24 Hour(s) • Moderate irritation;</p> <p><b>Multi-dose Toxicity:</b> Ingestion/Oral-Rat TDLo • 188 g/kg 25 Day(s)-Intermittent; <i>Liver:Fatty liver degeneration;</i> <i>Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:Multiple enzyme effects;</i></p> <p><b>Biochemical:Metabolism (intermediary):Lipids, including transport;</b></p> <p><b>Mutagen:</b> Cytogenetic analysis • Ingestion/Oral-Human • 49014 g/kg 25 Year(s); Dominant lethal test • Ingestion/Oral-Mouse • 3720 mg/kg 3 Day(s); Sperm Morphology • Ingestion/Oral-Mouse • 1500 mg/kg 50 Day(s);</p> <p><b>Reproductive:</b> Ingestion/Oral-Rat TDLo • 12 g/kg (9-12D preg); <i>Reproductive Effects:Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus);</i> Ingestion/Oral-Woman TDLo • 5860 mL/kg (3Y pre-100D post); <i>Reproductive Effects:Specific Developmental Abnormalities:Craniofacial (including nose and tongue); Reproductive Effects:Effects on Newborn:Behavioral; Reproductive Effects:Effects on Newborn:Delayed effects;</i></p> <p><b>Tumorigen / Carcinogen:</b> Ingestion/Oral-Mouse • 400 g/kg 57 Week(s)-Intermittent; <i>Tumorigenic:Equivocal tumorigenic agent by RTECS criteria; Gastrointestinal:Tumors;</i> Ingestion/Oral-Mouse TDLo • 320 mg/kg 50 Week(s)-Intermittent; <i>Tumorigenic:Equivocal tumorigenic agent by RTECS criteria; Liver:Tumors; Blood:Lymphoma, including Hodgkin's disease</i></p>
Gasoline, natural (1% TO 5%)	8006- 61-9	<p><b>Acute Toxicity:</b> Inhalation-Guinea Pig LC50 • 300 g/m<sup>3</sup> 5 Minute(s); <i>Lungs, Thorax, or Respiration:Dyspnea;</i></p> <p><b>Irritation:</b> Eye-Man • 500 ppm 1 Hour(s) • Moderate irritation;</p> <p><b>Multi-dose Toxicity:</b> Unreported-Man TDLo • 16.5 mL/kg 7 Year(s)-Intermittent; <i>Peripheral Nerve and Sensation:Recording from peripheral motor nerve; Behavioral:Tremor</i></p>

**GHS Properties****Classification**

Respiratory sensitization

OSHA HCS 2012 • No data available

<b>Serious eye damage/Irritation</b>	OSHA HCS 2012 • Eye Irritation 2
<b>Acute toxicity</b>	OSHA HCS 2012 • Acute Toxicity - Inhalation 3 - ATEmix (inhl) = 7.3 mg/l (4H)
<b>Aspiration Hazard</b>	OSHA HCS 2012 • No data available
<b>Carcinogenicity</b>	OSHA HCS 2012 • Carcinogenicity 2
<b>Skin corrosion/Irritation</b>	OSHA HCS 2012 • Skin Irritation 2
<b>Skin sensitization</b>	OSHA HCS 2012 • No data available
<b>STOT-RE</b>	OSHA HCS 2012 • No data available
<b>STOT-SE</b>	OSHA HCS 2012 • Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects
<b>Toxicity for Reproduction</b>	OSHA HCS 2012 • No data available
<b>Germ Cell Mutagenicity</b>	OSHA HCS 2012 • Germ Cell Mutagenicity 2

## Potential Health Effects

### Inhalation

- Acute (Immediate)**
  - Toxic if inhaled. May affect the central nervous system. Symptoms may include dizziness, drowsiness, lethargy, coma and death.
- 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 cause irritation of the mouth, throat and gastrointestinal tract. Symptoms may include salivation, pain, nausea, vomiting and diarrhea.
- Chronic (Delayed)**
  - No data available.

### Mutagenic Effects

- Repeated and prolonged exposure may cause mutagenic effects.

### Carcinogenic Effects

- Repeated and prolonged exposure may cause cancer.

Carcinogenic Effects		
	CAS	IARC
Ethanol	64-17-5	Group 1-Carcinogenic

#### Key to abbreviations

LC = Lethal Concentration

LD = Lethal Dose

TC = Toxic Concentration

TD = Toxic Dose

## Section 12 - Ecological Information

### Toxicity

- Non-mandatory section - information about this substance not compiled for this reason.

### Persistence and degradability

- Non-mandatory section - information about this substance not compiled for this

reason.

## Bioaccumulative potential

- Non-mandatory section - information about this substance not complied for this reason.

## Mobility in Soil

- Non-mandatory section - information about this substance not complied for this reason.

## Other adverse effects

- Non-mandatory section - information about this substance not complied for this reason.

## Section 13 - Disposal Considerations

### 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

	UN number	UN proper shipping name	Transport hazard class (es)	Packing group	Environmental hazards
DOT	UN1987	Alcohols, n.o.s. (Ethanol and Gasoline Mixture)	3	II	NDA
TDG	UN1987	ALCOHOLS, N.O.S. (Ethanol and Gasoline Mixture)	3	II	NDA

#### Special precautions for user

- None specified.

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

- No data available

## Section 15 - Regulatory Information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### SARA Hazard Classifications

- Acute, Chronic, Fire

Inventory				
Component	CAS	Canada DSL	Canada NDSL	TSCA
Ethanol	64-17-5	Yes	No	Yes
Gasoline, natural	8006-61-9	Yes	No	Yes

## Canada

### Labor

#### Canada - WHMIS - Classifications of Substances

- |                     |           |         |
|---------------------|-----------|---------|
| • Gasoline, natural | 8006-61-9 | B2, D2A |
| • Ethanol           | 64-17-5   | B2, D2B |



**Canada - WHMIS - Ingredient Disclosure List**

• Gasoline, natural	8006-61-9	1 %
• Ethanol	64-17-5	0.1 %

**Environment****Canada - CEPA - Priority Substances List**

• Gasoline, natural	8006-61-9	Not Listed
• Ethanol	64-17-5	Not Listed

**United States****Labor****U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals**

• Gasoline, natural	8006-61-9	Not Listed
• Ethanol	64-17-5	Not Listed

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

• Gasoline, natural	8006-61-9	Not Listed
• Ethanol	64-17-5	Not Listed

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

• Gasoline, natural	8006-61-9	Not Listed
• Ethanol	64-17-5	Not Listed

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

• Gasoline, natural	8006-61-9	Not Listed
• Ethanol	64-17-5	Not Listed

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

• Gasoline, natural	8006-61-9	Not Listed
• Ethanol	64-17-5	Not Listed

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

• Gasoline, natural	8006-61-9	Not Listed
• Ethanol	64-17-5	Not Listed

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

• Gasoline, natural	8006-61-9	Not Listed
• Ethanol	64-17-5	Not Listed

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

• Gasoline, natural	8006-61-9	Not Listed
• Ethanol	64-17-5	Not Listed

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

• Gasoline, natural	8006-61-9	Not Listed
• Ethanol	64-17-5	Not Listed

**United States - California****Environment****U.S. - California - Proposition 65 - Carcinogens List**

• Gasoline, natural	8006-61-9	Not Listed
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• Ethanol	64-17-5	carcinogen, initial date 4/29/11 (in alcoholic beverages)
<b>U.S. - California - Proposition 65 - Developmental Toxicity</b>		
• Gasoline, natural	8006-61-9	Not Listed
• Ethanol	64-17-5	developmental toxicity, initial date 10/1/87 (in alcoholic beverages)
<b>U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)</b>		
• Gasoline, natural	8006-61-9	Not Listed
• Ethanol	64-17-5	Not Listed
<b>U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)</b>		
• Gasoline, natural	8006-61-9	Not Listed
• Ethanol	64-17-5	Not Listed
<b>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</b>		
• Gasoline, natural	8006-61-9	Not Listed
• Ethanol	64-17-5	Not Listed
<b>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</b>		
• Gasoline, natural	8006-61-9	Not Listed
• Ethanol	64-17-5	Not Listed

## Other Information

- **WARNING:** This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.

## Section 16 - Other Information

### Revision Date

- 27/August/2015

### Preparation Date

- 27/August/2015

### Disclaimer/Statement of Liability

- The information and recommendations contained herein are based upon tests believed to be reliable. However, Northern Tier Energy does not guarantee their accuracy or completeness nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of the goods, the merchantability of the goods, or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage maybe required. Northern Tier Energy assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

### Key to abbreviations

NDA = No data available