International SDS Documents

*FOR INFORMATION REFERENCE ONLY. A product specific SDS is included with each shipment. Use the SDS sent with each sample for information related to the product supplied per program cycle.*
Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name • Ethyl Alcohol, Anhydrous, Denatured
Synonyms E-95; E-98; Fuel Ethanol

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

Relevant identified use(s) 4. Blending with gasoline for spark ignition engine fuel

1.3 Details of the supplier of the safety data sheet

Clark Laboratories
1801 Route 51 South
Jefferson Hills, PA 15025
412-387-1001

1.4. Emergency telephone number

Transportation Emergency Response

Chemtrec (United States Only) - 24 hour emergency response:
(800) 424-9300
International Collect: +1 703 741 5970
SDS Assistance Email: sds@clarktesting.com

Section 2: Hazards Identification

UN GHS
According to Third Revised Edition

2.1 Classification of the substance or mixture

Hazard Statements

4. Flammable Liquids 2 - H225
Skin Irritation 2 - H315
Eye Irritation 2A - H319
Toxic if inhaled - H331
May cause drowsiness or dizziness - H336
Suspected of causing genetic defects - H341
Suspected of causing cancer - H351

2.2 Label elements
Precautionary statements

Prevention.

P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P235 - Keep cool.
P240 - Ground and/or bond container and receiving equipment.
P241 - Use explosion-proof - electrical, ventilating and/or lighting equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P264 - Wash thoroughly after handling.
P273 - Avoid release to the environment.
P280 - Wear protective gloves and eye/face protection.
P281 - Use personal protective equipment as required.

Response.
P370+P378 - In case of fire: Use appropriate media Carbon Dioxide, "alcohol-type foam," or dry chemical for extinction.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P362 - Take off contaminated clothing and wash before reuse.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P321 - Specific treatment, see supplemental first aid information.
P308+P313 - IF exposed or concerned: Get medical advice/attention.

Storage/Disposal.
P405 - Store locked up.
P403+P235 - Store in a well-ventilated place. - Keep cool.
P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

3 Other hazards

UN GHS

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

United States (US)
According to OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS

Flammable Liquid
Flammable/Combustible Class IC
Carcinogen
Irritant
Target Organ Effects - Central Nervous System (CNS)

2.2 Label elements

OSHA HCS

Not required

2.3 Other hazards

OSHA HCS

According to WHMIS

2.1 Classification of the substance or mixture

WHMIS

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

2.2 Label elements

WHMIS

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

2.3 Other hazards

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

2.4 Other information

NFPA

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Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance according to United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

3.2 Mixtures

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Identifiers</th>
<th>% (weight)</th>
<th>LD50/LC50</th>
<th>Classifications According to Regulation/Directive</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>CAS:64-17-5</td>
<td>95% TO 98%</td>
<td>Ingestion/Oral-Rat LD50 7060 mg/kg; Inhalation-Rat LC50 124700 mg/m³ 4 Hour (s)</td>
<td>UN GHS: Flam. Liq. 2; Eye Irrit. 2A; Skin Irrit. 2;</td>
<td>NDA</td>
</tr>
<tr>
<td></td>
<td>EC:534-32-2</td>
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<td></td>
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<td>Number:200-578-6</td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td>UN:UN1170</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gasoline, natural</td>
<td>CAS:8006-61-9</td>
<td>2% TO 5%</td>
<td>Inhalation -Rat LC50 300 g/m³ 5 Minute(s)</td>
<td>UN GHS: Eye Irrit 2; Skin Irrit 2; Carc. 2; STOT SE 3: Narc.; Aquatic Acute 2; Aquatic Chronic 2;</td>
<td>NDA</td>
</tr>
<tr>
<td></td>
<td>EC:524-90-6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number:232-349-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>UN:UN1203</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section 4 - First Aid Measures

4.1 Description of first aid measures

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

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

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

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

4.2 Most important symptoms and effects, both acute and delayed
• Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed
Notes to Physician
• Immediate medical attention after exposure to this material not expected to be necessary. No special treatment indicated related to exposure to this material.

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media
• SMALL FIRES: Dry chemical, CO2, water spray or alcohol-resistant foam.
• LARGE FIRES: Water spray, fog or alcohol-resistant foam.
• CAUTION: For mixtures containing a high percentage of an alcohol or polar solvent, alcohol-resistant foam may be more effective.

Unsuitable Extinguishing Media
• No data available.

5.2 Special hazards arising from the substance or mixture
Unusual Fire and Explosion. HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.
Hazardous Combustion Products: May form toxic materials, carbon dioxide and carbon monoxide.

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

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures
Personal Precautions
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate enclosed areas. Stay upwind.

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

6.2 Environmental precautions
- Prevent entry into waterways or sewers.

6.3 Methods and material for containment and cleaning up
- 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.

6.4 Reference to other sections
- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling
Handling
- Use good safety and industrial hygiene practices. Keep away from heat and sparks.
- Take precautionary measures against static charges. Do not use sparking tools.
- Ground container when transferring product. Use only with adequate ventilation.

7.2 Conditions for safe storage, including any incompatibilities
Storage
- Store locked up. Store in a cool, dry, well-ventilated place. Keep away from fire. Keep container closed when not in use.

7.3 Specific end use(s)
- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters
## 8.2 Exposure controls

### Engineering Measures/Controls
- Local exhaust ventilation. Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values.

### Respiratory
- An appropriate NIOSH/MSHA-approved respirator or self-contained breathing apparatus should be worn when any exposure limit is exceeded.

### Eye/Face
- Wear safety glasses with splash guards or goggles.

### Hands
- Wear appropriate gloves.

### Skin/Body
- Wear protective clothing.

### Environmental Exposure Controls
- Follow best practice for site management and disposal of waste.

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### Key to abbreviations
- ACGIH = American Conference of Governmental Industrial Hygiene
- MSHA = Mine Safety and Health Administration
- NIOSH = National Institute of Occupational Safety and Health
- OSHA = Occupational Safety and Health Administration
- STEV = Short Term Exposure Value
- STEL = Short Term Exposure Limits are based on 15-minute exposures
- TWA = Time-Weighted Average Exposure Value
- TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

### Table: Exposure Limits/Guidelines

<table>
<thead>
<tr>
<th>Pentane (109-66-0)</th>
<th>Result</th>
<th>ACGIH</th>
<th>Brazil</th>
<th>Canada Ontario</th>
<th>Canada Quebec</th>
<th>NIOSH</th>
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<tbody>
<tr>
<td>TWAs 600 ppm TWA</td>
<td>Not established</td>
<td>470 ppm TWA; 1400 mg/m3 TWA</td>
<td>600 ppm TWAEV; 1770 mg/m3 TWA</td>
<td>120 ppm TWAEV; 350 mg/m3 TWA</td>
<td>120 ppm TWA; 350 mg/m3 TWA</td>
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<tr>
<td>STELs 2.5 ppm STEL</td>
<td>Not established</td>
<td>750 ppm STEV, Not established</td>
<td>120 ppm TWAEV; 350 mg/m3 TWA</td>
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<td></td>
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<td>Ceilings Not established</td>
<td>Not established</td>
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<tr>
<td>Butane (106-97-8)</td>
<td>TWAs 1000 ppm TWA</td>
<td>470 ppm TWA; 1090 mg/m3 TWA</td>
<td>800 ppm TWAEV; 1900 mg/m3 TWA</td>
<td>800 ppm TWAEV; 1900 mg/m3 TWA</td>
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<td>STELs 2.5 ppm STEL</td>
<td>Not established</td>
<td>2.5 ppm STEV (applies to workplaces to which the designated substance regulation does not apply); 2.5 ppm STEV (designated substances regulation)</td>
<td>5 ppm STEV; 15.5 mg/m3 STEV</td>
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<td>Benzene (71-43-2)</td>
<td>TWAs 50 ppm TWA</td>
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<td>50 ppm TWAEV; 176 mg/m3 TWAEV</td>
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<td>50 ppm TWA; 180 mg/m3 TWA</td>
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<td>2-Methylbutane (In Liquid form) (78-78-4)</td>
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<td>Not established</td>
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<tr>
<td>Gasoline, natural (8006-61-9)</td>
<td>STELs Not established</td>
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<td>Not established</td>
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<tr>
<td>TWAs Not established</td>
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<td>780 ppm TWA; 1480 mg/m3 TWA</td>
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<td>1000 ppm TWAEV; 1880 mg/m3 TWA</td>
<td>1000 ppm TWA; 1900 mg/m3 TWA</td>
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</tr>
<tr>
<td>STELs 1000 ppm STEL</td>
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## Section 9 - Physical and Chemical Properties

### 9.1 Information on Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Material Description</th>
<th>Physical Form</th>
<th>Appearance/Description</th>
<th>General Properties</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Liquid</td>
<td>Clear, colorless, volatile liquid with characteristic alcohol odor.</td>
<td>Boiling Point</td>
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<tr>
<td>Color</td>
<td>Clear, colorless.</td>
<td>Odor</td>
<td>No data available</td>
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<tr>
<td>Taste</td>
<td>No data available</td>
<td>Particulate Type</td>
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<td>Particulate Size</td>
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<td>Aerosol Type</td>
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<td>Odor Threshold</td>
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<td>Physical and Chemical Properties</td>
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<td>Boiling Point</td>
<td>70 C (158 F)</td>
<td>Melting Point</td>
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<td>Decomposition Temperature</td>
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<td>Heat of Decomposition</td>
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<td>pH</td>
<td>No data available</td>
<td>Specific Gravity/Relative Density</td>
<td>0.787 to 0.797 Water=1</td>
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<td>Density</td>
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<td>Bulk Density</td>
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<td>Water Solubility</td>
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<td>Solvent Solubility</td>
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<td>---------</td>
<td>-------------------</td>
<td>------------------</td>
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<td>Viscosity</td>
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<td>Explosive Properties</td>
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<td>Oxidizing Properties:</td>
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<tr>
<td><strong>Volatile</strong></td>
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<tr>
<td>Vapor Pressure</td>
<td>212 mmHg (torr) @ 32 C(69.6 F)</td>
<td>Vapor Density</td>
<td>&gt; 1 Air=1</td>
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<td>Evaporation Rate</td>
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<td>VOC (Wt.)</td>
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<td>VOC (Vol.)</td>
<td>No data available</td>
<td>Volatiles (Wt.)</td>
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<tr>
<td>Volatiles (Vol.)</td>
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<tr>
<td><strong>Flammmability</strong></td>
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<tr>
<td>Flash Point</td>
<td>12.7 C(54.86 F)</td>
<td>Flash Point Test Type</td>
<td>TCC (Tagliabue Closed Cup)</td>
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<td>UEL</td>
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<td>LEL</td>
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<td>Heat of Combustion (AHc)</td>
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<td>Burning Time</td>
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<td>No data available</td>
<td>Ignition Distance</td>
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<td>Flammability (solid, gas)</td>
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<td><strong>Environmental</strong></td>
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<td>Half-Life</td>
<td>No data available</td>
<td>Octanol/Water Partition coefficient</td>
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<td>Coefficient of water/oil distribution</td>
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<td>Bioaccumulation Factor</td>
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<td>Bioconcentration Factor</td>
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<td>Chemical Oxygen Demand</td>
<td>No data available</td>
<td>Persistence</td>
<td>No data available</td>
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<tr>
<td>Degradation</td>
<td>No data available</td>
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</tr>
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</table>

9.2 Other Information

4. No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity
- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability
- Stable

10.3 Possibility of hazardous reactions
- Hazardous polymerization will not occur.

10.4 Conditions to avoid
- Heat, sparks, open flame.

10.5 Incompatible materials
4. Avoid contact with strong oxidizing agents and strong inorganic acids.

10.6 Hazardous decomposition products
- Carbon monoxide and carbon dioxide.
### Section 11 - Toxicological Information

#### 11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Component Name</th>
<th>CAS</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol (95% TO 98%)</td>
<td>64-17-5</td>
<td><strong>Acute Toxicity:</strong> orl-rbt LD50:6300 mg/kg; irl-rat LC50:5900 mg/m3/6H; <strong>Irritation:</strong> eye-rbt 500 mg SEV; skin-rbt 20 mg/24H MOD; <strong>Reproductive:</strong> orl-rat TDLo:22.5 gm/kg (11-20D preg); <strong>Tumorigen/Carcinogen:</strong> orl-mus TD: 400 gm/kg/57W-1</td>
</tr>
<tr>
<td>Gasoline, natural (2% TO 5%)</td>
<td>8006-81-9</td>
<td><strong>Acute Toxicity:</strong> inh-rat TCL0:500 ppm/4W-1; <strong>Irritation:</strong> eye-hmn 140 ppm/8H MLD.</td>
</tr>
<tr>
<td>Benzene (0% TO 0.13%)</td>
<td>71-43-2</td>
<td><strong>Acute Toxicity:</strong> ingestion/oral-Rat LD50: 990 mg/kg; inh-rat LC50:10000 ppm/7H; skin-rat TCL0: 960 uKg/4D-1; <strong>Irritation:</strong> eye-rbt 2 mg/24H SEV; skin-rbt 20 mg/24H MOD; <strong>Reproductive:</strong> inh-rat TCL0: 870 mg/m3/24H (15D pre/1-22D preg); <strong>Tumorigen/Carcinogen:</strong> inh-hmn TC: 150 ppm/15M/8Y-1</td>
</tr>
</tbody>
</table>

#### GHS Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>UN GHS ● Classification criteria not met</td>
</tr>
<tr>
<td>Skin corrosion/Irritation</td>
<td>UN GHS ● Skin Irritation 2</td>
</tr>
<tr>
<td>Serious eye damage/Irritation</td>
<td>UN GHS ● Eye Irritation 2A</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>UN GHS ● Classification criteria not met</td>
</tr>
<tr>
<td>Respiratory sensitization</td>
<td>UN GHS ● Classification criteria not met</td>
</tr>
<tr>
<td>Aspiration Hazard</td>
<td>UN GHS ● Classification criteria not met</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>UN GHS ● Carcinogenicity 1A</td>
</tr>
<tr>
<td>Germ Cell Mutagenicity</td>
<td>UN GHS ● Germ Cell Mutagenicity 1B</td>
</tr>
<tr>
<td>Toxicity for Reproduction</td>
<td>UN GHS ● Classification criteria not met</td>
</tr>
<tr>
<td>STOT-SE</td>
<td>UN GHS ● Classification criteria not met</td>
</tr>
<tr>
<td>STOT-RE</td>
<td>UN GHS ● Classification criteria not met</td>
</tr>
</tbody>
</table>

#### Potential Health Effects

**Inhalation**
- **Acute (Immediate)**
  - High concentration can cause burning and irritation in nose and throat and headaches.
- **Chronic (Delayed)**
  - No data available.

**Skin**
- **Acute (Immediate)**
  - Causes skin irritation.
- **Chronic (Delayed)**
  - No data available.

**Eye**
- **Acute (Immediate)**
  - Causes serious eye irritation.
- **Chronic (Delayed)**
  - No data available.

**Ingestion**

Acute (Immediate)  • This material contains gasoline and is not fit for consumption. May affect the central nervous system. Symptoms may include dizziness, drowsiness, lethargy, coma and death.

Chronic (Delayed)  • No data available.

Other

Chronic (Delayed)  • Chronic exposure to ethanol can cause damage to liver, kidney, and heart.

Mutagenic Effects  • Repeated and prolonged exposure may cause mutagenic effects.

Carcinogenic Effects  • Repeated and prolonged exposure may cause cancer.

<table>
<thead>
<tr>
<th>Carcinogenic Effects</th>
<th>CAS</th>
<th>IARC</th>
<th>OSHA</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>Group 1-Carcinogenic</td>
<td>Specifically Regulated Carcinogen</td>
<td>Known Human Carcinogen</td>
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<tr>
<td>Gasoline, natural</td>
<td>8006-81-9</td>
<td>Group 2B-Possible Carcinogen</td>
<td>Not established</td>
<td>Not established</td>
</tr>
</tbody>
</table>

Reproductive Effects  • This material is not fit for consumption. Ingestion of ethanol during pregnancy has been shown to cause birth defects and other reproductive harm.

Key to abbreviations

LD = Lethal Dose

---

Section 12 - Ecological Information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Ethyl Alcohol, Anhydrous, Denatured</th>
<th>Dosage</th>
<th>Species</th>
<th>Duration</th>
<th>Results</th>
<th>Exposure Conditions</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.5 mg/L</td>
<td>Crustacea: Daphnia Magna</td>
<td>48 Hour(s)</td>
<td>EC50</td>
<td>NDA</td>
<td>Data for Gasoline component</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability  • Material data lacking.

12.3 Bioaccumulative potential  • Material data lacking.

12.4 Mobility in Soil  • Material data lacking.

12.5 Results of PBT and vPvB assessment  • PBT and vPvB assessment has not been carried out.

12.6 Other adverse effects

Potential Environmental Effects  • Based upon component information and the use of GHS criteria for classification of mixtures this material this material may cause harm to the aquatic environment. May cause long lasting harmful effects to aquatic life.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product waste  • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
Section 14 - Transport Information

<table>
<thead>
<tr>
<th>DOT</th>
<th>UN1170</th>
<th>Ethanol</th>
<th>3</th>
<th>II</th>
<th>NDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDG</td>
<td>UN1170</td>
<td>Ethanol</td>
<td>3</td>
<td>II</td>
<td>Potential Marine Pollutant</td>
</tr>
<tr>
<td>IATA/ICAO</td>
<td>UN1170</td>
<td>Ethanol</td>
<td>3</td>
<td>II</td>
<td>NDA</td>
</tr>
</tbody>
</table>

14.6 Special precautions for use

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

* Not relevant.

Section 15 - Regulatory Information

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

SARA Hazard Classifications • Acute, Chronic, Fire

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>MA</th>
<th>NJ</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Gasoline, natural</td>
<td>8006-61-9</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>Canada DSL</th>
<th>Canada NDSL</th>
<th>TSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Gasoline, natural</td>
<td>8006-61-9</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

15.2 Chemical Safety Assessment

• No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet. Adequate training and instruction should be given by you to your...
employees and affected personnel. Appropriate warnings and safe handling procedures should be provided by
you to handlers and users. Additionally, the user should review this information, satisfy itself as to its suitability
and completeness, and pass on the information to its employees or customers in accordance with the applicable
federal, state, provincial or local hazard communication requirements. This SDS may not be used as a commercial
specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as
to the fitness for use of the material, or the accuracy or comprehensiveness of the foregoing data and safety
information, nor is any authorization given or implied to practice any patented invention without a license. In
addition, vendor neither assumes nor retains any responsibility for any damage or injury resulting from abnormal
use, from any failure to adhere to appropriate practices, or from any hazards inherent in the nature of the
material. Moreover, unless an employee or a customer accesses or receives a SDS directly from the company,
there is no assurance that a document obtained from alternate sources is the most currently available SDS. The
above information is based on the data of which we are aware and is believed to be correct as of the date hereof.
Since this information may be applied under conditions beyond our control and with which we may be unfamiliar
and since data made available subsequent to the date hereof may suggest modifications of the information, we do
not assume any responsibility for the results of its use. This information is furnished upon condition that the
person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Completed by Clark PTP Staff

No Annex
Domestic SDS Documents

*FOR INFORMATION REFERENCE ONLY.* A product specific SDS is included with each shipment. Use the SDS sent with each sample for information related to the product supplied per program cycle.
Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier
Product Name • Ethyl Alcohol, Anhydrous, Denatured
Synonyms . E-95; E-98; Fuel Ethanol

1.2 Relevant identified uses of the substance or mixture and uses advised against
Relevant identified use(s) 4. Blending with gasoline for spark ignition engine fuel

1.3 Details of the supplier of the safety data sheet
Clark Laboratories
1801 Route 51 South
Jefferson Hills, PA 15025
412-387-1001

1.4. Emergency telephone number
Transportation Emergency Response
Chemetrec (United States Only) - 24 hour emergency response:
'800)424-9300
International Collect: +1 703 741 5970
SDS Assistance Email: sds@clarktesting.com

Section 2: Hazards Identification

UN GHS
According to Third Revised Edition

2.1 Classification of the substance or mixture
Hazard Statements
4. Flammable Liquids 2 - H225
Skin Irritation 2 - H315
Eye Irritation 2A - H319
Toxic if inhaled- H331
May cause drowsiness or dizziness- H336
Suspected of causing genetic defects - H341
Suspected of causing cancer-H351

2.2 Label elements
Precautionary statements

Prevention:

P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P235 - Keep cool.
P240 - Ground and/or bond container and receiving equipment.
P241 - Use explosion-proof - electrical, ventilating and/or lighting equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P264 - Wash thoroughly after handling.
P273 - Avoid release to the environment.
P280 - Wear protective gloves and eye/face protection.
P281 - Use personal protective equipment as required.

Response:
P370+P378 - In case of fire: Use appropriate media Carbon Dioxide, "alcohol -type foam," or dry chemical for extinction.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P362 - Take off contaminated clothing and wash before reuse.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P321 - Specific treatment, see supplemental first aid information.
P308+P313 - IF exposed or concerned: Get medical advice/attention.

Storage/Disposal:
P405 - Store locked up.
P403+P235 - Store in a well-ventilated place. Keep cool.
P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

3 Other hazards

UN GHS

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

United States (US)
According to OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS

Flammable Liquid
Flammable/Combustible Class IC
Carcinogen
Irritant
Target Organ Effects - Central Nervous System (CNS)

2.2 Label elements

OSHA HCS

Not required

2.3 Other hazards

OSHA HCS

Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance according to United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

3.2 Mixtures

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Identifiers</th>
<th>%(weight)</th>
<th>LD50/LC50</th>
<th>Classifications According to Regulation/Directive</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>CAS:84-17-5 EC Number:200-578-6 UN:UN1170</td>
<td>95% TO 98%</td>
<td>Ingestion/Oral-Rat LD50 7080 mg/kg Inhalation-Rat LC50 124700 mg/m³ 4 Hour (s)</td>
<td><strong>UN GHS:</strong> Flam. Liq. 2; Eye Irrit. 2A; Skin Irrit. 2;</td>
<td>NDA</td>
</tr>
<tr>
<td>Gasoline, natural</td>
<td>CAS:8006-61-9 EC Number:232-349-1 UN:UN1203</td>
<td>2% TO 5%</td>
<td>Inhalation -Rat LC50 300 g/m³ 5 Minute(s)</td>
<td><strong>UN GHS:</strong> Eye Irrit 2; Skin Irrit 2; Carc. 2; STOT SE 3: Narc.; Aquatic Acute 2; Aquatic Chronic 2;</td>
<td>NDA</td>
</tr>
</tbody>
</table>
Percentages provided for components of Gasoline, natural are percentages of these components in the product.

Section 4 - First Aid Measures

4.1 Description of first aid measures

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

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

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

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

4.2 Most important symptoms and effects, both acute and delayed

• Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician • Immediate medical attention after exposure to this material not expected to be necessary. No special treatment indicated related to exposure to this material.

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media • SMALL FIRES: Dry chemical, CO2, water spray or alcohol-resistant foam.
LARGE FIRES: Water spray, fog or alcohol-resistant foam.
CAUTION: For mixtures containing a high percentage of an alcohol or polar solvent, alcohol-resistant foam may be more effective.

Unsuitable Extinguishing Media • No data available.

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

Hazardous Combustion Products  May form toxic materials, carbon dioxide and carbon monoxide.

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

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures
Personal Precautions  Do not touch damaged containers or spilled material unless wearing 
  appropriate protective clothing. Ventilate enclosed areas. Stay upwind. 
Emergency Procedures  ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate 
  area) As an immediate precautionary measure, isolate spill or leak area for at least 
  50 meters (150 feet) in all directions. If tank, rail car or tank truck is involved in a fire, 
  ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation 
  for 800 meters (1/2 mile) in all directions. LARGE SPILL: Consider initial downwind 
  evacuation for at least 300 meters (1000 feet) Keep unauthorized personnel away. 
  Stay upwind. Keep out of low areas. 

6.2 Environmental precautions 

4. Prevent entry into waterways or sewers.

6.3 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.

6.4 Reference to other sections
  Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - 
  Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling 
Handling  Use good safety and industrial hygiene practices. Keep away from heat and sparks. 
  Take precautionary measures against static charges. Do not use sparking tools. 
  Ground container when transferring product. Use only with adequate ventilation.

7.2 Conditions for safe storage, including any incompatibilities 
Storage  Store locked up. Store in a cool, dry, well-ventilated place. Keep away from fire. Keep 
  container closed when not in use.

7.3 Specific end use(s)
  Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters
<table>
<thead>
<tr>
<th>Substance</th>
<th>Result</th>
<th>ACGIH</th>
<th>Brazil</th>
<th>Canada Ontario</th>
<th>Canada Quebec</th>
<th>NIOSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentane (109-88-0)</td>
<td>TWAs 600 ppm TWA</td>
<td>470 ppm TWA; 1400 mg/m3 TWA</td>
<td>600 ppm TWA; 1770 mg/m3</td>
<td>120 ppm TWAEV; 350 mg/m3</td>
<td>120 ppm TWA; 350 mg/m3 TWA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>STELs Not established mg/m3 STEV</td>
<td>Not established</td>
<td>750 ppm STEV; 20th Not established</td>
<td>established</td>
<td>Not established</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ceilings Not established</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
<td>610 ppm Ceiling (15 min); 1800 mg/m3 Ceiling (15 min)</td>
<td></td>
</tr>
<tr>
<td>Butane (106-97-8)</td>
<td>TWAs 1000 ppm TWA</td>
<td>470 ppm TWA; 1090 mg/m3 TWA</td>
<td>800 ppm TWAEV; 1900 mg/m3</td>
<td>800 ppm TWAEV; 1900 mg/m3</td>
<td>800 ppm TWA; 1900 mg/m3 TWA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>STELs 2.5 ppm STEL</td>
<td>Not established</td>
<td>2.5 ppm STEV (applies to workplaces to which the designated substance regulation does not apply); 2.5 ppm STEV (designated substances regulation)</td>
<td>5 ppm STEV; 15.5 mg/m3 STEV</td>
<td>1 ppm STEL</td>
<td></td>
</tr>
<tr>
<td>Benzene (71-43-2)</td>
<td>TWAs 0.5 ppm TWA</td>
<td>Not established</td>
<td>0.5 ppm TWAEV (applies to workplaces to which the designated substance regulation does not apply); 0.5 ppm TWAEV (designated substances regulation)</td>
<td>1 ppm TWAEV; 3 mg/m3 TWAEV</td>
<td>0.1 ppm TWA</td>
<td></td>
</tr>
<tr>
<td>Hexane (110-54-3)</td>
<td>TWAs 50 ppm TWA</td>
<td>Not established</td>
<td>50 ppm TWAEV; 176 mg/m3 TWAEV</td>
<td>50 ppm TWAEV; 176 mg/m3 TWAEV</td>
<td>50 ppm TWA; 180 mg/m3 TWA</td>
<td></td>
</tr>
<tr>
<td>2-Methylbutane (in Liquid form) (78-78-4)</td>
<td>TWAs 600 ppm TWA</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
<td></td>
</tr>
<tr>
<td>Gasoline, natural (8006-81-9)</td>
<td>STELs Not established</td>
<td>Not established</td>
<td>Not established</td>
<td>500 ppm STEV; 160 mg/m3 STEV</td>
<td>established</td>
<td></td>
</tr>
<tr>
<td>Ethanol (64-17-5)</td>
<td>TWAs Not established</td>
<td>Not established</td>
<td>300 ppm TWAEV; 890 mg/m3</td>
<td>Not established</td>
<td>Not established</td>
<td></td>
</tr>
<tr>
<td></td>
<td>STELs 1000 ppm STEL</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
<td></td>
</tr>
</tbody>
</table>

### 8.2 Exposure controls

**Engineering Measures/Controls**
- Local exhaust ventilation. Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values.

**Respiratory**
- An appropriate NIOSH/MSHA-approved respirator or self-contained breathing apparatus should be worn when any exposure limit is exceeded.
- Wear safety glasses with splash guards or goggles.

**Eye/Face**
- Wear appropriate gloves.

**Hands**
- Wear protective clothing.

**Skin/Body**
- Follow best practice for site management and disposal of waste.

**Environmental Exposure Controls**

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**Key to abbreviations**
- ACGIH = American Conference of Governmental Industrial Hygiene
- MSHA = Mine Safety and Health Administration
- NIOSH = National Institute of Occupational Safety and Health
- OSHA = Occupational Safety and Health Administration
- STEV = Short Term Exposure Value
- STEL = Short Term Exposure Limits are based on 15-minute exposures
- TWAEV = Time-Weighted Average Exposure Value
- TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures
9.1 Information on Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Material Description</th>
<th>Physical Form</th>
<th>Appearance/Description</th>
<th>Physical and Chemical Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Form</td>
<td>Liquid</td>
<td>Clear, colorless</td>
<td></td>
</tr>
<tr>
<td>Taste</td>
<td>No data available</td>
<td>Particulate Type</td>
<td>No data available</td>
</tr>
<tr>
<td>Particulate Size</td>
<td>No data available</td>
<td>Aerosol Type</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
<td>Physical and Chemical</td>
<td>No data available</td>
</tr>
<tr>
<td>Properties</td>
<td></td>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>Boiling Point</td>
<td>70 C (158 F)</td>
<td>Melting Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
<td>Heat of Decomposition</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
<td>Specific Gravity/Relative</td>
<td>0.787 to 0.797 Water=1</td>
</tr>
<tr>
<td>Density</td>
<td>No data available</td>
<td>Bulk Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Soluble</td>
<td>Solvent Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------</td>
<td>--------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
<td>Explosive Properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Vapor Pressure** 212 mmHg (torr) @ 32 C(89.6 F)  
**Vapor Density** > 1 Air=1

<table>
<thead>
<tr>
<th>Evaporation Rate</th>
<th>No data available</th>
<th><strong>VOC (Vol.)</strong></th>
<th>No data available</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Volatiles (Vol.)</strong></td>
<td>No data available</td>
<td><strong>Volatiles (Wt.)</strong></td>
<td>No data available</td>
</tr>
</tbody>
</table>

**Flammability**

<table>
<thead>
<tr>
<th>Flash Point</th>
<th>12.7 C(54.86 F)</th>
<th><strong>Flash Point Test Type</strong></th>
<th>TCC (Tagliabue Closed Cup)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UEL</td>
<td>No data available</td>
<td>UEL</td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Autoignition</strong></td>
<td>No data available</td>
<td><strong>Self-Accelerating Decomposition Temperature (SADT)</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Heat of Combustion (AHc)</strong></td>
<td>No data available</td>
<td><strong>Burning Time</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Flame Duration</strong></td>
<td>No data available</td>
<td><strong>Flame Height</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Flame Extension</strong></td>
<td>No data available</td>
<td><strong>Ignition Distance</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Environmental**

<table>
<thead>
<tr>
<th>Half-Life</th>
<th>No data available</th>
<th><strong>Octanol/Water Partition coefficient</strong></th>
<th>No data available</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coefficient of water/oil distribution</strong></td>
<td>No data available</td>
<td><strong>Bioaccumulation Factor</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Biodegradation Factor</strong></td>
<td>No data available</td>
<td><strong>Biochemical Oxygen Demand/BOD5</strong></td>
<td>data available</td>
</tr>
<tr>
<td><strong>Chemical Oxygen Demand</strong></td>
<td>No data available</td>
<td><strong>Persistence</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Degradation</strong></td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 9.2 Other Information

*No additional physical and chemical parameters noted.*

### Section 10: Stability and Reactivity

#### 10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

#### 10.2 Chemical stability

- Stable

#### 10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

#### 10.4 Conditions to avoid

- Heat, sparks, open flame.

#### 10.5 Incompatible materials

*Avoid contact with strong oxidizing agents and strong inorganic acids.*

#### 10.6 Hazardous decomposition products

- Carbon monoxide and carbon dioxide.
11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Component Name</th>
<th>CAS</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol (95% TO 98%)</td>
<td>64-17-5</td>
<td>Acute Toxicity: oral-rat LD50:6300 mg/kg; ihl-rat LC50:5900 mg/m3/8H;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Irritation: eye-rbt 500 mg SEV; skn-rbt 20 mg/24H MOD;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reproductive: oral-rat TDL0:22.5 gm/kg (11-20D preg);</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tumorigen/Carcinogen: oral-mus TD :400 gm/kg/57W-I</td>
</tr>
<tr>
<td>Gasoline, natural (2% TO 5%)</td>
<td>8006-81-9</td>
<td>Acute Toxicity: ihl-rat TCL0:500 ppm/4W-I;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Irritation: eye-hmn 140 ppm/8H MLD</td>
</tr>
<tr>
<td>Benzene (0% TO 0.13%)</td>
<td>71-43-2</td>
<td>Acute Toxicity: Ingestion/Oral-Rat LD50: 930 mg/kg; ihl-rat LC50:10000 ppm/7H; skn-rat TDL0:960 uKg/4D-I;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Irritation: eye-rbt 2 mg/24H SEV; skn-rbt 20 mg/24H MOD;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reproductive: ihl-rat TCL0:670 mg/m3/24H (15D pre/1-22D preg);</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tumorigen/Carcinogen: ihl-hmn TC :150 ppm/15M/8Y-I</td>
</tr>
</tbody>
</table>

GHS Properties

Acute toxicity
Skin corrosion/Irritation
Serious eye damage/Irritation
Skin sensitization
Respiratory sensitization
Aspiration Hazard
Carcinogenicity
Germ Cell Mutagenicity
Toxicity for Reproduction
STOT-SE
STOT-RE

Classification

UN GHS • Classification criteria not met
UN GHS • Skin Irritation 2
UN GHS • Eye Irritation 2A
UN GHS • Classification criteria not met
UN GHS • Classification criteria not met
UN GHS • Classification criteria not met
UN GHS • Carcinogenicity 1A
UN GHS • Germ Cell Mutagenicity 1B
UN GHS • Classification criteria not met
UN GHS • Classification criteria not met
UN GHS • Classification criteria not met

Potential Health Effects

Inhalation
Acute (Immediate) • High concentration can cause burning and irritation in nose and throat and headaches.
Chronic (Delayed) • No data available.

Skin
Acute (Immediate) • Causes skin irritation.
Chronic (Delayed) • No data available.

Eye
Acute (Immediate) • Causes serious eye irritation.
Chronic (Delayed) • No data available.

Ingestion
Acute (Immediate)  
• This material contains gasoline and is not fit for consumption. May affect the central nervous system. Symptoms may include dizziness, drowsiness, lethargy, coma and death.

Chronic (Delayed)  
• No data available.

Other  
Chronic (Delayed)  
• Chronic exposure to ethanol can cause damage to liver, kidney, and heart.

Mutagenic Effects  
• Repeated and prolonged exposure may cause mutagenic effects.

Carcinogenic Effects  
• Repeated and prolonged exposure may cause cancer.

<table>
<thead>
<tr>
<th>Carcinogenic Effects</th>
<th>CAS</th>
<th>IARC</th>
<th>OSHA</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>Group 1-Carcinogenic</td>
<td>Specifically Regulated Carcinogen</td>
<td>Known Human Carcinogen</td>
</tr>
<tr>
<td>Gasoline, natural</td>
<td>8006-61-9</td>
<td>Group 2B-Possible Carcinogen</td>
<td>Not established</td>
<td>Not established</td>
</tr>
</tbody>
</table>

Reproductive Effects  
• This material is not fit for consumption. Ingestion of ethanol during pregnancy has been shown to cause birth defects and other reproductive harm.

Key to abbreviations  
LD = Lethal Dose

Section 12 - Ecological Information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Ethyl Alcohol, Anhydrous, Denatured</th>
<th>Dosage</th>
<th>Species</th>
<th>Duration</th>
<th>Results</th>
<th>Exposure Conditions</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>= 1.5 mg/L</td>
<td>Crustacea: Daphnia Magna</td>
<td>48 Hour(s)</td>
<td>EC50</td>
<td>NDA</td>
<td>Data for Gasoline component</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability  
• Material data lacking.

12.3 Bioaccumulative potential  
• Material data lacking.

12.4 Mobility in Soil  
• Material data lacking.

12.5 Results of PBT and vPvB assessment  
• PBT and vPvB assessment has not been carried out.

12.6 Other adverse effects  
Potential Environmental Effects  
• Based upon component information and the use of GHS criteria for classification of mixtures this material this material may cause harm to the aquatic environment. May cause long lasting harmful effects to aquatic life.

Section 13 - Disposal Considerations

13.1 Waste treatment methods  
Product waste  
• Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
**Section 14 - Transport Information**

<table>
<thead>
<tr>
<th>DOT</th>
<th>14.1 UN number</th>
<th>14.2 UN proper shipping name</th>
<th>14.3 Transport hazard class(es)</th>
<th>14.4 Packing group</th>
<th>14.5 Environmental hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UN1170</td>
<td>Ethanol</td>
<td>3</td>
<td>II</td>
<td>NDA</td>
</tr>
<tr>
<td>TDG</td>
<td>UN1170</td>
<td>Ethanol</td>
<td>3</td>
<td>II</td>
<td>Potential Marine Pollutant</td>
</tr>
<tr>
<td>IATA/ICAO</td>
<td>UN1170</td>
<td>Ethanol</td>
<td>3</td>
<td>II</td>
<td>NDA</td>
</tr>
</tbody>
</table>

14.6 Special precautions for user
- None known.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
- Not relevant.

**SHIPPING AS A LIMITED QUANTITY**

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**Section 15 - Regulatory Information**

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

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

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>MA</th>
<th>NJ</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Gasoline, natural</td>
<td>8006-61-9</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**15.2 Chemical Safety Assessment**
- No Chemical Safety Assessment has been carried out.

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**Section 16 - Other Information**
NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet. Adequate training and instruction should be given by you to your employees and affected personnel. Appropriate warnings and safe handling procedures should be provided by you to handlers and users. Additionally, the user should review this information, satisfy itself as to its suitability and completeness, and pass on the information to its employees or customers in accordance with the applicable federal, state, provincial or local hazard communication requirements. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the fitness for use of the material, or the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, vendor neither assumes nor retains any responsibility for any damage or injury resulting from abnormal use, from any failure to adhere to appropriate practices, or from any hazards inherent in the nature of the material. Moreover, unless an employee or a customer accesses or receives a SDS directly from the company, there is no assurance that a document obtained from alternate sources is the most currently available SDS. The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Completed by Clark PTP Staff
No Annex