Safety Data Sheet

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) • Blending with gasoline for spark ignition engine fuel

1.3 Details of the supplier of the safety data sheet

Manufacturer • Homeland Energy Solutions

2779 Hwy 24
Lawler, IA 52154
United States
www.homelandenergysolutions.com

Telephone (General) • (563) 238-5555

Telephone (General) • (563) 238-5557 - Fax

1.4 Emergency telephone number

Manufacturer • 1-800-424-9300 - CHEMTREC

Section 2: Hazards Identification

UN GHS

According to Third Revised Edition

2.1 Classification of the substance or mixture

UN GHS •

Flammable Liquids 2 - H225
Skin Irritation 2 - H315
Eye Irritation 2A - H319
Carcinogenicity 1A - H350
Germ Cell Mutagenicity 1B - H340
Hazardous to the aquatic environment Acute 3 - H402
Hazardous to the aquatic environment Chronic 3 - H412

2.2 Label elements

UN GHS

DANGER

Hazard statements

• H225 - Highly flammable liquid and vapour.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.

H340 - May cause genetic defects.
H350 - May cause cancer.
H402 - Harmful to aquatic life.
H412 - Harmful to aquatic life with long lasting effects.

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.

2.3 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

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

Canada

According to WHMIS

2.1 Classification of the substance or mixture

WHMIS

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

2.2 Label elements

WHMIS

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

2.3 Other hazards

WHMIS

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

2.4 Other information

NFPA

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

Hazardous Components					
Chemical Name	**Identifiers**	**%(weight)**	**LD50/LC50**	**Classifications According to Regulation/Directive**	**Comments**
Ethanol	**CAS:**64-17-5 **EC Number:**200-578-6 **UN:**UN1170	95% TO 98%	Ingestion/Oral-Rat LD50 · 7060 mg/kg Inhalation-Rat LC50 · 124700 mg/m³ 4 Hour (s)	**UN GHS:** Flam. Liq. 2; Eye Irrit. 2A; Skin Irrit. 2;	NDA
Gasoline, natural	**CAS:**8006-61-9 **EC Number:**232-349-1 **UN:**UN1203	2% TO 5%	Inhalation-Rat LC50 · 300 g/m³ 5 Minute(s)	**UN GHS:** Eye Irrit 2; Skin Irrit 2; Carc. 2; STOT SE 3: Narc.; Aquatic Acute 2; Aquatic Chronic 2;	NDA
Hexane	**CAS:**110-54-3 **EC Number:**203-777-6	0% TO 1.1%	Ingestion/Oral-Rat LD50 · 25 g/kg Inhalation-Rat LC50 · 48000 ppm 4 Hour(s)	**UN GHS:** Flam Liq. 2; Eye Irrit. 2; Skin Irrit. 2; STOT SE 3: Narc.; Aquatic Acute 3;	Component of Gasoline, natural

2-Methylbutane (In Liquid form)	**CAS:**78-78-4 **EC Number:**201-142-8	0% TO 0.75%	Inhalation-Rat LC50 · 280000 mg/m³ 4 Hour (s)	**UN GHS:** Eye Irrit. 2; Skin Irrit. 2; STOT SE 3: Narc. & Resp. Irrit.;	Component of Gasoline, natural
Pentane	**CAS:**109-66-0 **EC Number:**203-692-4 **UN:**UN1265	0% TO 0.75%	Inhalation-Rat LC50 · 364 g/m³ 4 Hour(s) Ingestion/Oral-Rat LD50 · >2000 mg/kg	**UN GHS:**Eye Irrit 2, Skin Irrit 2, Acute Tox 5 (oral), Aquatic Acute 1	Component of Gasoline, natural
Benzene	**CAS:**71-43-2 **EC Number:**200-753-7 **UN:**UN1114	0% TO 0.13%	Skin-Rabbit LD50 · >9400 µg/kg Inhalation-Rat LC50 · 10000 ppm 7 Hour(s) Ingestion/Oral-Rat LD50 · 1800 mg/kg	**UN GHS:**Eye Irrit 2, Skin Irrit. 2; Carc. Cat 1A; Muta. 1B; Acute Tox 4-Inhl; Aquatic Acute 3; Aquatic Chronic 3;	Component of Gasoline, natural
Butane	**CAS:**106-97-8 **EC Number:**203-448-7 **UN:**UN1011	0% TO 0.13%	Inhalation-Rat LC50 · 658 g/m³ 4 Hour(s)	**UN GHS:** Eye Irrit. 2; Skin Irrit. 2;	Component of Gasoline, natural

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 Hazards

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

- 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

Exposure Limits/Guidelines						
	Result	**ACGIH**	**Brazil**	**Canada Ontario**	**Canada Quebec**	**NIOSH**
Pentane (109-66-0)	TWAs	600 ppm TWA	470 ppm TWA; 1400 mg/m3 TWA	600 ppm TWAEV; 1770 mg/m3 TWAEV	120 ppm TWAEV; 350 mg/m3 TWAEV	120 ppm TWA; 350 mg/m3 TWA
	STELs	Not established	Not established	750 ppm STEV; 2210 mg/m3 STEV	Not established	Not established
	Ceilings	Not established	Not established	Not established	Not established	610 ppm Ceiling (15 min); 1800 mg/m3 Ceiling (15 min)
Butane (106-97-8)	TWAs	1000 ppm TWA	470 ppm TWA; 1090 mg/m3 TWA	800 ppm TWAEV; 1900 mg/m3 TWAEV	800 ppm TWAEV; 1900 mg/m3 TWAEV	800 ppm TWA; 1900 mg/m3 TWA
Benzene (71-43-2)	STELs	2.5 ppm STEL	Not established	2.5 ppm STEV (applies to workplaces to which the designated substance regulation does not apply); 2.5 ppm STEV (designated substances regulation)	5 ppm STEV; 15.5 mg/m3 STEV	1 ppm STEL
	TWAs	0.5 ppm TWA	Not established	0.5 ppm TWAEV (applies to workplaces to which the designated substance regulation does not apply); 0.5 ppm TWAEV (designated substance regulation)	1 ppm TWAEV; 3 mg/m3 TWAEV	0.1 ppm TWA
Hexane (110-54-3)	TWAs	50 ppm TWA	Not established	50 ppm TWAEV; 176 mg/m3 TWAEV	50 ppm TWAEV; 176 mg/m3 TWAEV	50 ppm TWA; 180 mg/m3 TWA
2-Methylbutane (In Liquid form) (78-78-4)	TWAs	600 ppm TWA	Not established	Not established	Not established	Not established
Gasoline, natural (8006-61-9)	STELs	Not established	Not established	Not established	500 ppm STEV; 1480 mg/m3 STEV	Not established
	TWAs	Not established	Not established	Not established	300 ppm TWAEV; 890 mg/m3 TWAEV	Not established
Ethanol (64-17-5)	TWAs	Not established	780 ppm TWA; 1480 mg/m3 TWA	1000 ppm TWAEV; 1900 mg/m3 TWAEV	1000 ppm TWAEV; 1880 mg/m3 TWAEV	1000 ppm TWA; 1900 mg/m3 TWA
	STELs	1000 ppm STEL	Not established	Not established	Not established	Not established

Exposure Limits/Guidelines (Con't.)		
	Result	**OSHA**
Pentane (109-66-0)	TWAs	1000 ppm TWA; 2950 mg/m3 TWA
	Ceilings	25 ppm Ceiling
	STELs	5 ppm STEL (see 29 CFR 1910.1028)

Benzene (71-43-2)	TWAs	10 ppm TWA (applies to industry segments exempt from the benzene standard at 29 CFR 1910.1028); 1 ppm TWA
Hexane (110-54-3)	TWAs	500 ppm TWA; 1800 mg/m3 TWA
Ethanol (64-17-5)	TWAs	1000 ppm TWA; 1900 mg/m3 TWA

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.

Personal Protective Equipment

Pictograms
- 

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.

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

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	**Appearance/Description**	Clear, colorless, volatile liquid with characteristic alcohol odor.
Color	Clear, Colorless.	**Odor**	Alcohol odor.
Taste	No data available	**Particulate Type**	No data available
Particulate Size	No data available	**Aerosol Type**	No data available
Odor Threshold	No data available	**Physical and Chemical Properties**	No data available
General Properties			
Boiling Point	70 C(158 F)	**Melting Point**	No data available
Decomposition Temperature	No data available	**Heat of Decomposition**	No data available
pH	No data available	**Specific Gravity/Relative Density**	0.787 to 0.797 Water=1
Density	No data available	**Bulk Density**	No data available

Water Solubility	Soluble	**Solvent Solubility**	No data available
Viscosity	No data available	**Explosive Properties**	No data available
Oxidizing Properties:	No data available		
Volatility			
Vapor Pressure	212 mmHg (torr) @ 32 C(89.6 F)	**Vapor Density**	> 1 Air=1
Evaporation Rate	No data available	**VOC (Wt.)**	No data available
VOC (Vol.)	No data available	**Volatiles (Wt.)**	No data available
Volatiles (Vol.)	No data available		
Flammability			
Flash Point	12.7 C(54.86 F)	**Flash Point Test Type**	TCC (Tagliabue Closed Cup)
UEL	No data available	**LEL**	No data available
Autoignition	No data available	**Self-Accelerating Decomposition Temperature (SADT)**	No data available
Heat of Combustion (ΔHc)	No data available	**Burning Time**	No data available
Flame Duration	No data available	**Flame Height**	No data available
Flame Extension	No data available	**Ignition Distance**	No data available
Flammability (solid, gas)	No data available		
Environmental			
Half-Life	No data available	**Octanol/Water Partition coefficient**	No data available
Coefficient of water/oil distribution	No data available	**Bioaccumulation Factor**	No data available
Bioconcentration Factor	No data available	**Biochemical Oxygen Demand BOD/BOD5**	No data available
Chemical Oxygen Demand	No data available	**Persistence**	No data available
Degradation	No data available		

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.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Component Name	CAS	Data
Ethanol (95% TO 98%)	64-17-5	**Acute Toxicity:** orl-rbt LD50:6300 mg/kg; ihl-rat LC50:5900 mg/m3/6H; **Irritation:** eye-rbt 500 mg SEV; skn-rbt 20 mg/24H MOD; **Reproductive:** orl-rat TDLo:22.5 gm/kg (11-20D preg); **Tumorigen/Carcinogen:** orl-mus TD :400 gm/kg/57W-I
Gasoline, natural (2% TO 5%)	8006-61-9	**Acute Toxicity:** ihl-rat TCLo:500 ppm/4W-I; **Irritation:** eye-hmn 140 ppm/8H MLD
Hexane (0% TO 1.1%)	110-54-3	**Acute Toxicity:** orl-rat LD50:25 gm/kg; ihl-rat LC50:48000 ppm/4H; **Irritation:** eye-rbt 10 mg MLD; **Reproductive:** ihl-rat TCLo:1000 ppm/6H (8-16D preg); **Tumorigen/Carcinogen:** ihl-rat TCLo:1000 ppm/4H/59W-I
2-Methylbutane (In Liquid form) (0% TO 0.75%)	78-78-4	**Acute Toxicity:** ihl-rat LC50:280000 mg/m3/4H
Pentane (0% TO 0.75%)	109-66-0	**Acute Toxicity:** orl-rat LD50:>2000 mg/kg; ihl-rat LC50:364 gm/m3/4H
Benzene (0% TO 0.13%)	71-43-2	**Acute Toxicity:** Ingestion/Oral-Rat LD50 · 930 mg/kg; ihl-rat LC50:10000 ppm/7H; skn-rat TDLo:960 uL/kg/4D-I; **Irritation:** eye-rbt 2 mg/24H SEV; skn-rbt 20 mg/24H MOD; **Reproductive:** ihl-rat TCLo:670 mg/m3/24H (15D pre/1-22D preg); **Tumorigen/Carcinogen:** ihl-hmn TC :150 ppm/15M/8Y-I
Butane (0% TO 0.13%)	106-97-8	**Acute Toxicity:** ihl-rat LC50:658 gm/m3/4H

GHS Properties	Classification
Acute toxicity	**UN GHS** • Classification criteria not met
Skin corrosion/Irritation	**UN GHS** • Skin Irritation 2
Serious eye damage/Irritation	**UN GHS** • Eye Irritation 2A
Skin sensitization	**UN GHS** • Classification criteria not met
Respiratory sensitization	**UN GHS** • Classification criteria not met
Aspiration Hazard	**UN GHS** • Classification criteria not met
Carcinogenicity	**UN GHS** • Carcinogenicity 1A
Germ Cell Mutagenicity	**UN GHS** • Germ Cell Mutagenicity 1B
Toxicity for Reproduction	**UN GHS** • Classification criteria not met
STOT-SE	**UN GHS** • Classification criteria not met
STOT-RE	**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.

Carcinogenic Effects				
	CAS	IARC	OSHA	NTP
Benzene	71-43-2	Group 1-Carcinogenic	Specifically Regulated Carcinogen	Known Human Carcinogen
Gasoline, natural	8006-61-9	Group 2B-Possible Carcinogen	Not established	Not established

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

Ethyl Alcohol, Anhydrous, Denatured					
Dosage	Species	Duration	Results	Exposure Conditions	Comments
= 1.5 mg/L	**Crustacea:** Daphnia Magna	48 Hour(s)	EC50	NDA	Data for Gasoline component

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.

Packaging waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN1987	Alcohols, n.o.s. (Ethanol and gasoline)	3	II	NDA
TDG	UN1987	ALCOHOLS, N.O.S.	3	II	Potential Marine Pollutant
IATA/ICAO	UN1987	Alcohol N.O.S	3	II	NDA

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.

Section 15 - Regulatory Information

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

SARA Hazard Classifications
- Acute, Chronic, Fire

State Right To Know				
Component	**CAS**	**MA**	**NJ**	**PA**
Ethanol	64-17-5	Yes	Yes	Yes
Gasoline, natural	8006-61-9	Yes	Yes	No
Hexane	110-54-3	Yes	Yes	Yes
2-Methylbutane (In Liquid form)	78-78-4	Yes	Yes	Yes
Pentane	109-66-0	Yes	Yes	Yes
Benzene	71-43-2	Yes	Yes	Yes
Butane	106-97-8	Yes	Yes	Yes

Inventory				
Component	**CAS**	**Canada DSL**	**Canada NDSL**	**TSCA**
Ethanol	64-17-5	Yes	No	Yes
Gasoline, natural	8006-61-9	Yes	No	Yes
Hexane	110-54-3	Yes	No	Yes
2-Methylbutane (In Liquid form)	78-78-4	Yes	No	Yes
Pentane	109-66-0	Yes	No	Yes
Benzene	71-43-2	Yes	No	Yes
Butane	106-97-8	Yes	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

● Gasoline, natural	8006-61-9	2% TO 5%	B2, D2A
● Pentane	109-66-0	0% TO 0.75%	B2
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	B2
● Benzene	71-43-2	0% TO 0.13%	B2, D2A, D2B
● Butane	106-97-8	0% TO 0.13%	A, B1
● Ethanol	64-17-5	95% TO 98%	B2, D2B
● Hexane	110-54-3	0% TO 1.1%	B2, D2A, D2B

Canada - WHMIS - Ingredient Disclosure List

● Gasoline, natural	8006-61-9	2% TO 5%	1 %
● Pentane	109-66-0	0% TO 0.75%	1 %
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
● Benzene	71-43-2	0% TO 0.13%	0.1 %
● Butane	106-97-8	0% TO 0.13%	1 %
● Ethanol	64-17-5	95% TO 98%	0.1 %
● Hexane	110-54-3	0% TO 1.1%	1 %

Environment

Canada - CEPA - Priority Substances List

● Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
● Pentane	109-66-0	0% TO 0.75%	Not Listed
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
● Benzene	71-43-2	0% TO 0.13%	Priority Substance List 1 (substance considered toxic)
● Butane	106-97-8	0% TO 0.13%	Not Listed
● Ethanol	64-17-5	95% TO 98%	Not Listed
● Hexane	110-54-3	0% TO 1.1%	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

● Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
● Pentane	109-66-0	0% TO 0.75%	Not Listed
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
● Benzene	71-43-2	0% TO 0.13%	Not Listed
● Butane	106-97-8	0% TO 0.13%	Not Listed
● Ethanol	64-17-5	95% TO 98%	Not Listed
● Hexane	110-54-3	0% TO 1.1%	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

● Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
● Pentane	109-66-0	0% TO 0.75%	Not Listed
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
● Benzene	71-43-2	0% TO 0.13%	5 ppm STEL (Cancer hazard, Flammable, See 29 CFR 1910.1028, 15 min); 0.5 ppm Action Level; 1 ppm TWA
● Butane	106-97-8	0% TO 0.13%	Not Listed
● Ethanol	64-17-5	95% TO 98%	Not Listed
● Hexane	110-54-3	0% TO 1.1%	Not Listed

Environment

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

● Gasoline, natural	8006-61-9	2% TO 5%	Not Listed

● Pentane	109-66-0	0% TO 0.75%	Not Listed
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
● Benzene	71-43-2	0% TO 0.13%	(including Benzene from gasoline)
● Butane	106-97-8	0% TO 0.13%	Not Listed
● Ethanol	64-17-5	95% TO 98%	Not Listed
● Hexane	110-54-3	0% TO 1.1%	

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

● Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
● Pentane	109-66-0	0% TO 0.75%	Not Listed
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
● Benzene	71-43-2	0% TO 0.13%	10 lb final RQ (received an adjusted RQ of 10 lbs based on potential carcinogenicity in an August 14, 1989 final rule); 4.54 kg final RQ (received an adjusted RQ of 10 lbs based on potential carcinogenicity in an August 14, 1989 final rule)
● Butane	106-97-8	0% TO 0.13%	Not Listed
● Ethanol	64-17-5	95% TO 98%	Not Listed
● Hexane	110-54-3	0% TO 1.1%	5000 lb final RQ; 2270 kg final RQ

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

● Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
● Pentane	109-66-0	0% TO 0.75%	Not Listed
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
● Benzene	71-43-2	0% TO 0.13%	Not Listed
● Butane	106-97-8	0% TO 0.13%	Not Listed
● Ethanol	64-17-5	95% TO 98%	Not Listed
● Hexane	110-54-3	0% TO 1.1%	Not Listed

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

● Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
● Pentane	109-66-0	0% TO 0.75%	Not Listed
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
● Benzene	71-43-2	0% TO 0.13%	Not Listed
● Butane	106-97-8	0% TO 0.13%	Not Listed
● Ethanol	64-17-5	95% TO 98%	Not Listed
● Hexane	110-54-3	0% TO 1.1%	Not Listed

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

● Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
● Pentane	109-66-0	0% TO 0.75%	Not Listed
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
● Benzene	71-43-2	0% TO 0.13%	Not Listed
● Butane	106-97-8	0% TO 0.13%	Not Listed
● Ethanol	64-17-5	95% TO 98%	Not Listed
● Hexane	110-54-3	0% TO 1.1%	Not Listed

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

● Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
● Pentane	109-66-0	0% TO 0.75%	Not Listed
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
● Benzene	71-43-2	0% TO 0.13%	0.1 % de minimis concentration
● Butane	106-97-8	0% TO 0.13%	Not Listed
● Ethanol	64-17-5	95% TO 98%	Not Listed
● Hexane	110-54-3	0% TO 1.1%	1.0 % de minimis concentration

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

● Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
● Pentane	109-66-0	0% TO 0.75%	Not Listed
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
● Benzene	71-43-2	0% TO 0.13%	Not Listed
● Butane	106-97-8	0% TO 0.13%	Not Listed
● Ethanol	64-17-5	95% TO 98%	Not Listed
● Hexane	110-54-3	0% TO 1.1%	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

● Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
● Pentane	109-66-0	0% TO 0.75%	Not Listed
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
● Benzene	71-43-2	0% TO 0.13%	carcinogen, initial date 2/27/87
● Butane	106-97-8	0% TO 0.13%	Not Listed
● Ethanol	64-17-5	95% TO 98%	Not Listed
● Hexane	110-54-3	0% TO 1.1%	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

● Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
● Pentane	109-66-0	0% TO 0.75%	Not Listed
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
● Benzene	71-43-2	0% TO 0.13%	developmental toxicity, initial date 12/26/97
● Butane	106-97-8	0% TO 0.13%	Not Listed
● Ethanol	64-17-5	95% TO 98%	developmental toxicity, initial date 10/1/87 (when in alcoholic beverages)
● Hexane	110-54-3	0% TO 1.1%	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

● Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
● Pentane	109-66-0	0% TO 0.75%	Not Listed
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
● Benzene	71-43-2	0% TO 0.13%	24 µg/day MADL (oral); 49 µg/day MADL (inhalation)
● Butane	106-97-8	0% TO 0.13%	Not Listed
● Ethanol	64-17-5	95% TO 98%	Not Listed
● Hexane	110-54-3	0% TO 1.1%	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

● Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
● Pentane	109-66-0	0% TO 0.75%	Not Listed
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
● Benzene	71-43-2	0% TO 0.13%	6.4 µg/day NSRL (oral); 13 µg/day NSRL (inhalation)
● Butane	106-97-8	0% TO 0.13%	Not Listed
● Ethanol	64-17-5	95% TO 98%	Not Listed
● Hexane	110-54-3	0% TO 1.1%	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

● Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
● Pentane	109-66-0	0% TO 0.75%	Not Listed
● 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
● Benzene	71-43-2	0% TO 0.13%	Not Listed
● Butane	106-97-8	0% TO 0.13%	Not Listed

• Ethanol	64-17-5	95% TO 98%	Not Listed
• Hexane	110-54-3	0% TO 1.1%	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
• Pentane	109-66-0	0% TO 0.75%	Not Listed
• 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
• Benzene	71-43-2	0% TO 0.13%	male reproductive toxicity, initial date 12/26/97
• Butane	106-97-8	0% TO 0.13%	Not Listed
• Ethanol	64-17-5	95% TO 98%	Not Listed
• Hexane	110-54-3	0% TO 1.1%	Not Listed

United States - Pennsylvania

Labor

U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

• Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
• Pentane	109-66-0	0% TO 0.75%	Not Listed
• 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
• Benzene	71-43-2	0% TO 0.13%	
• Butane	106-97-8	0% TO 0.13%	Not Listed
• Ethanol	64-17-5	95% TO 98%	Not Listed
• Hexane	110-54-3	0% TO 1.1%	Not Listed

U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

• Gasoline, natural	8006-61-9	2% TO 5%	Not Listed
• Pentane	109-66-0	0% TO 0.75%	Not Listed
• 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
• Benzene	71-43-2	0% TO 0.13%	
• Butane	106-97-8	0% TO 0.13%	Not Listed
• Ethanol	64-17-5	95% TO 98%	Not Listed
• Hexane	110-54-3	0% TO 1.1%	Not Listed

United States - Rhode Island

Labor

U.S. - Rhode Island - Hazardous Substance List

• Gasoline, natural	8006-61-9	2% TO 5%	Toxic; Flammable
• Pentane	109-66-0	0% TO 0.75%	Toxic; Flammable
• 2-Methylbutane (In Liquid form)	78-78-4	0% TO 0.75%	Not Listed
• Benzene	71-43-2	0% TO 0.13%	Toxic (skin); Flammable (skin); Carcinogen (skin)
• Butane	106-97-8	0% TO 0.13%	Toxic; Flammable
• Ethanol	64-17-5	95% TO 98%	Toxic; Flammable
• Hexane	110-54-3	0% TO 1.1%	Toxic; Flammable

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

Last Revision Date • 12/March/2012

Preparation Date • 12/March/2012

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- The information contained herein is believed to be accurate. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.

Key to abbreviations

NDA = No Data Available