

MATERIAL NAME: E-Grade, Denatured Fuel Ethanol and Ethanol Blends >10% in Gasoline		SDS #: MMP-004
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SAFETY DATA SHEET

SECTION 1 ♦ IDENTIFICATION




Magellan Midstream Partners One Williams Center Tulsa, OK 74172	For Emergency Source Information Contact: ➤ 3E Contact: (877) 852-0015 or +1 (760) 602-8700
GHS PRODUCT IDENTIFIER Ethanol (11-99%) Gasoline Blends, Ethanol Flex Fuels, and E85	CHEMICAL FAMILY: Alcohol/Petroleum Hydrocarbon
PRODUCT USES: Used primarily as a fuel source for internal combustion engines.	

SECTION 2 * HAZARDS IDENTIFICATION

GHS CLASSIFICATIONS		
Aspiration Hazard - Category 1	Carcinogenicity - Category 1A	Flammable Liquid - Category 1
Germ Cell Mutagenicity - Category 1B	Hazardous to the Aquatic Environment – Acute Hazard - Category 3	Skin Corrosion/Irritation - Category 2
Specific Target Organ Toxicity (Repeat Exposure) - Category 1 (liver, kidneys, bladder, blood, bone marrow, nervous system)	Specific Target Organ Toxicity (Single Exposure) - Category 3 (respiratory irritation, narcosis)	
Hazardous to the Aquatic Environment – Chronic Hazard - Category 2	Eye Damage/Irritation - Category 2B	Toxic to Reproduction - Category 1A

GHS LABEL ELEMENTS

Denatured Fuel Ethanol

GHS PICTOGRAMS				SIGNAL WORD
				DANGER

HAZARD STATEMENTS

Causes damage to organs (liver, kidneys, bladder, blood, bone marrow, nervous system) through prolonged or repeated exposure.	May be fatal if swallowed and enters airways.	
Causes skin irritation.	Harmful to aquatic life.	Highly flammable liquid and vapor.
May damage fertility or the unborn child.	May cause drowsiness or dizziness.	
May cause genetic defects.	May cause respiratory irritation.	May cause cancer.

PRECAUTIONARY STATEMENTS

<i>Prevention</i>	
Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed.	
Ground/bond container and receiving equipment.	Use only non-sparking tools.
Use explosion-proof electrical, ventilating, lighting and all material handling equipment.	
Take precautionary measures against static discharge.	Keep out of reach of children.
Do not breathe mist/vapors/spray.	Use only outdoors or in well-ventilated area.
Do not eat, drink or smoke when using this product.	Avoid release to the environment.
Do not handle until all safety precautions have been read and understood.	

Response

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In case of fire: Use water spray, fog, dry chemical fire extinguishers or hand held fire extinguisher.

IF exposed or concerned: Get medical advice/attention.

IF ON SKIN (or hair): Wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing and wash before reuse. If skin irritation occurs, get medical advice/attention.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison control center or doctor/physician if you feel unwell.

Get medical advice/attention if you feel unwell.

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting.

Storage

Store in a well-ventilated place | Keep cool | Store locked up | Keep container tightly closed

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

SUPPLIER INFORMATION

Magellan Midstream Partners

One Williams Center

Tulsa, OK 74172

SECTION 3 ▼ COMPOSITION/INFORMATION OF INGREDIENTS

INGREDIENT	CAS NUMBER	PERCENTAGE (%)
Ethyl alcohol	64-17-5	11-99
Gasoline	8006-61-9	1-89
Toluene	108-88-3	<30
Xylenes (o-, m-, p- isomers)	1330-20-7	<30
1,2,4-Trimethyl benzene	95-63-6	<2
Hexane	110-54-3	<10
Benzene	71-43-2	<10
Ethyl benzene	100-41-4	<1
Naphthalene	91-20-3	<1

SECTION 4 + FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids, Get Medical Aid.

SKIN: Quickly remove contaminated clothing and immediately wash skin with plenty of soap and water for at least 15 minutes. Get medical aid if irritation develops or persists.

INGESTION: Do not induce vomiting. Call a physician and/or transport to an emergency facility immediately.

INHALATION: Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give cardiopulmonary resuscitation. If breathing is difficult, give medical oxygen.

NOTE TO PHYSICIAN: TREAT SYMPTOMATICALLY AND SUPPORTIVELY

SECTION 5 ⚡ FIRE-FIGHTING MEASURES

SEE SECTION 9 FOR FLAMMABILITY PROPERTIES

HIGHLY FLAMMABLE! This material releases vapors at or below ambient temperatures. When mixed with air in certain proportions and exposed to an ignition source, these vapors can burn in the open or explode in confined spaces. Being heavier than air, flammable vapors may travel long distances along the ground before reaching a point of ignition and flashing back.

SUITABLE EXTINGUISHING MEDIA: Water fog, dry chemical, foam, or Carbon Dioxide. Use water spray to cool nearby containers and structure exposed to fire. Water fog or spray are of value in cooling tanks and containers but may not achieve extinguishment.

HAZARDOUS REACTIONS/DECOMPOSITION: Burning or excessive heating may produce carbon monoxide and carbon dioxide, also other harmful gases/vapors including oxides and/or other compounds of chlorine, manganese, and bromine.

SPECIAL PROTECTIVE ACTIONS FOR FIREFIGHTERS: For fires involving this material, do not enter any enclosed or confined space without proper protective equipment. This may include self-contained breathing apparatus to protect

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against the hazardous effects of combustion products and oxygen deficiencies. If firefighters cannot work upwind of the fire, respiratory protective equipment must be worn. Cool tanks and containers exposed to fire with water. Burning liquid will float on water. Notify appropriate authorities if liquid enters sewer/waterways.

SECTION 6 ❖ ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Evacuate personnel to safe areas. Use personal protective equipment. All equipment used when handling the product must be grounded. Ensure adequate ventilation. Take precautionary measures against static discharges. Keep people away from and upwind of spill/leak. Stop leak if you can do so without risk.
METHODS FOR CONTAINMENT	A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Dike far ahead of liquid spill for later disposal.
METHODS FOR CLEANING UP	Use clean non-sparking tools to collect absorbed material. Dike far ahead of liquid spill for later disposal.
OTHER INFORMATION	Water spray may reduce vapor but may not prevent ignition in closed spaces.

SECTION 7 ✂ HANDLING AND STORAGE

Prior to working with this product workers should be trained on its proper handling and storage

PRECAUTIONS FOR SAFETY HANDLING	<ul style="list-style-type: none"> ➤ Use only as a motor fuel. ➤ Do not siphon by mouth. ➤ Handle as a flammable liquid. ➤ Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion. ➤ Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."
STORAGE PROCEDURES	<ul style="list-style-type: none"> ➤ Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. ➤ Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition. ➤ Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". ➤ Avoid storage near incompatible materials.
INCOMPATIBILITIES	<ul style="list-style-type: none"> ➤ Keep away from strong oxidizers.

SECTION 8 # EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name	ACGIH TLV (2013)	OSHA PEL	NIOSH IDLH
Toluene	TWA: 20 ppm	TWA: 200 ppm	500 ppm
Xylenes (all isomers)	TWA: 100 ppm STEL: 150 ppm	TWA: 100 ppm	900 ppm
Ethyl alcohol	TWA: 1,000 ppm	TWA: 1,000 ppm	3,300 ppm
Hexane	TWA: 50 ppm <i>Skin</i>	TWA: 500	1,100 ppm
Benzene	TWA: 0.5 ppm	TWA: 1 ppm	500 ppm

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	STEL: 2.5 ppm <i>Skin</i>	STEL: 5	
1,2,4-Trimethyl benzene	TWA: 25 ppm	Not Applicable	Not Applicable
Ethyl benzene	TWA: 20 ppm	TWA: 100 ppm	800 ppm
Naphthalene	TWA: 10 ppm STEL: 15 ppm <i>Skin</i>	TWA: 10 ppm	250 ppm

ENGINEERING MEASURES: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits and flammability limits, particularly in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Respiratory

Use a properly fitted, air-purifying or air-supplied respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workplace exposure limits for product or components are exceeded, NIOSH approved equipment should be worn. Proper respirator selection should be determined by adequately trained personnel, based on the contaminants, the degree of potential exposure and published respiratory protection factors. This equipment should be available for non-routine and emergency use.

Personal Protective Equipment: Hands

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Personal Protective Equipment: Eyes

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, or mists. Keep away from eyes. Eye contact can be avoided by wearing safety glasses or chemical splash goggles.

Personal Protective Equipment: Skin and Body

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Keep away from skin. Skin contact can be minimized by wearing protective gloves such as neoprene, nitrile-butadiene rubber, etc. and, where necessary, impervious clothing and boots. Leather goods contaminated with this product should be discarded. A source of clean water should be available in the work area for flushing eyes and skin. Flame Retardant Clothing is recommended.

SECTION 9 ↩ PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT (760 MM HG): 104 °F/38 °C	PERCENT VOLATILE BY VOLUME: Slight - 100%
SPECIFIC GRAVITY (H₂O = 1): 0.72	VISCOSITY UNITS, TEMP: < 1.4 cSt @ 37.7 °C
EVAPORATION RATE (BuAc = 1): Unavailable	VAPOR DENSITY (AIR =1): 4
VAPOR PRESSURE AT 25°C: 400 mm Hg	SOLUBILITY IN WATER: Negligible
APPEARANCE AND ODOR: Reddish golden brown liquid; petroleum distillates odor.	
FLASH POINT: (Method Used) -40 °F/-40 °C	FLAMMABLE LIMITS: LEL: 1.4% UEL: 7.6%
AUTOIGNITION TEMPERATURE: 49-850 °F / 9.4-454 °C	VOC CONTENT: 100%

SECTION 10 ⇄ STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal temperatures and pressures
HAZARDOUS REACTION POTENTIAL: Will not occur
CONDITIONS TO AVOID: Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.
INCOMPATIBLE PRODUCTS: Keep away from strong oxidizers.
MATERIALS TO AVOID: Contact with nitric and sulfuric acids will form nitroresols that can decompose violently.

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HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

HAZARDOUS POLYMERIZATION: Has not been reported

OTHER PHYSICAL AND CHEMICAL PROPERTIES: If uninhibited, gasoline will cause rusting of copper and alloys containing copper.

SECTION 11 ☼ TOXICOLOGICAL INFORMATION

GASOLINE

Aspiration of gasoline into the lungs will cause chemical pneumonia. Liquid, mist, or vapors can cause eye, skin and respiratory tract irritation and CNS depression. Mild eye irritation may result from contact with liquid, mist, and/or vapors. Liquid may penetrate skin to cause central nervous system depression. Vapor penetration can also cause systematic effects. Skin irritation or more serious disorders may occur upon prolonged and repeated contact due to skin defatting. Irritation of the mouth, throat, and gastrointestinal tract leading to nausea, vomiting, diarrhea and restlessness. CNS Depression similar to that caused by vapor inhalation. Exposure can cause irritation to the nose, throat, and lungs and signs of CNS depression (dizziness, drowsiness, loss of coordination, coma and death), depending on the concentration/duration of exposure. Long-term exposure to unleaded gasoline has also produced kidney damage in laboratory animals. The exact relationship between these results and possible human effects is not known. Persons with pre-existing skin disorders, impaired liver or kidney function, or CNS and chronic respiratory diseases should avoid exposure to this material. This material may contain benzene at concentrations above 0.1%. Benzene is considered to be a known human carcinogen by OSHA, IARC and NTP.

Toxicity

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LD ₅₀ (oral)	Rat	Not Available	LD ₅₀ (dermal)	Rabbit	Not Available	LC ₅₀ (inh)	Rat (5 minutes)	300 g/M ³

RTECS #: LX3300000

TOLUENE

The most common effect of overexposure to toluene is irritation of the mucous membranes, skin and central nervous system depression (headaches, lassitude, light-headedness, incoordination, fatigue, decreased reaction time, etc.). Unlike closely related compound benzene, toluene does not appear to be toxic to the bone marrow. No synergistic effects data available. For the skin, prolonged and repeated exposure can caused defatting and dermatitis.

TOXICITY

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LD ₅₀ (oral)	Rat	636 mg/kg	LD ₅₀ (dermal)	Rabbit	14.1 mL/kg	LC ₅₀ (inh)	Rat (4 hours)	49 g/M ³

Specific organ toxicity, single exposure: No data available

Specific organ toxicity, repeated exposure: No data available

CARCINOGENICITY

IARC	Inadequate evidence in animals	Inadequate evidence in humans	Group 3: not classifiable as a human carcinogen
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NTP Not Listed

California (Prop 65): Listed as carcinogen	NIOSH: Not Listed	ACGIH: A4-Not Classifiable As Human Carcinogen	OSHA: Not Listed
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MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available

Germ cell mutagenicity: Genotoxicity in vitro-rat: Liver and DNA damage

Reproductive toxicity: Have been shown in male/female rats

Teratogenicity: Developmental-rat: Fetotoxicity, stunted fetus. Suspected human reproductive toxicity.

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Skin Corrosion/irritation: Skin-rabbit: irritation over 24 hours	Serious eye damage, irritation -rabbit: No data available
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: XS5250000	

XYLENE

Xylene vapor may cause irritation of the eyes, nose, and throat. At high concentrations, xylene vapor may cause severe breathing difficulties which may be delayed in onset. At high concentrations, it may also cause dizziness, staggering, drowsiness, and unconsciousness. In addition, breathing high concentrations may cause loss of appetite, nausea, vomiting, and abdominal pain. Liquid xylene may be irritating to the eyes and skin. Exposure to high concentrations of xylene vapor may cause reversible damage to the kidneys and liver. Repeated or prolonged exposure to xylene may cause a skin rash. Repeated exposure of the eyes to high concentrations of xylene vapor may cause reversible eye damage.

TOXICITY

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LD ₅₀ (oral)	Rat	4.3 g/kg	LD ₅₀ (dermal)	Rabbit	1,700 mg/kg	LC ₅₀ (inh)	Rat (4 hours)	5,000 ppm
Specific organ toxicity, single exposure: No data available				Specific organ toxicity, repeated exposure: No data available				

CARCINOGENICITY

IARC	Inadequate evidence in animals	Inadequate evidence in humans	Group 3: not classifiable as a human carcinogen
NTP	Suspect Carcinogen		
California (Prop 65): Not Listed as carcinogen	NIOSH: Occupational Carcinogen	ACGIH: A4-Not Classifiable As Human Carcinogen	OSHA: Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: Skin-rabbit: irritation over 24 hours	Serious eye damage, irritation-rabbit: mild eye irritation
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: ZE2100000	

ETHYL ALCOHOL

Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. May cause respiratory tract irritation. May cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation. Long term exposure may cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Prolonged exposure may cause liver, kidney, and heart damage.

TOXICITY

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LD ₅₀ (oral)	Rat	7.06 g/kg	LD ₅₀ (dermal)	Rabbit	No Data	LC ₅₀ (inh)	Rat (10 hours)	20,000 ppm
Specific organ toxicity, single exposure: No data available				Specific organ toxicity, repeated exposure: Liver damage				

CARCINOGENICITY

IARC	Not Listed		
NTP	Not Listed		
California (Prop 65): Not Listed as carcinogen	NIOSH: Not Listed	ACGIH: Not Listed	OSHA: Not Listed

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MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS	
Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: Human oral effects on newborn including retardation and addiction	Teratogenicity: No data available
Skin Corrosion/irritation: Skin-rabbit: skin irritation	Serious eye damage, irritation-rabbit: mild eye irritation, Draize Test
Synergistic effects: No data available	Aspiration hazard: No data available
RTECS #: KQ6300000	

HEXANE

May cause respiratory tract irritation. Exposure produces central nervous system depression. Inhalation of vapors may cause drowsiness and dizziness. Chronic exposure may cause liver damage. Adverse reproductive effects have been reported in animals. Laboratory experiments have resulted in mutagenic effects.

TOXICITY

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LD ₅₀ (oral)	Rat	15.8 g/kg	LD ₅₀ (dermal)	Rabbit	No Data	LC ₅₀ (inh)	Rat (4 hours)	48,000 ppm
Specific organ toxicity, single exposure: May cause drowsiness or dizziness				Specific organ toxicity, repeated exposure: may cause damage to organs from repeated or prolonged exposure. May cause nervous system damage.				

CARCINOGENICITY

Testicular tumors shown in rats.

IARC	Not Listed
NTP	Not Listed
California (Prop 65): Not listed as carcinogen	NIOSH: Not Listed
	ACGIH: Not Listed
	OSHA: Not Listed

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: overexposure may cause reproductive disorders based on lab animals. May damage fertility in humans.	Teratogenicity: No data available
Skin Corrosion/irritation: No data available	Serious eye damage, irritation -rabbit: mild eye irritation
Synergistic effects: No data available	Aspiration hazard: May be fatal if swallowed and enters airway.
RTECS #: MN9275000	

BENZENE

Acute inhalation effects may cause respiratory tract irritation drowsiness, unconsciousness, and central nervous system depression. Potential symptoms of overexposure by inhalation are dizziness, headache, vomiting, visual disturbances, staggering gait, hilarity, fatigue, and other symptoms of CNS depression.

Chronic exposures may cause bone marrow abnormalities with damage to blood forming tissues. May cause anemia and other blood cell abnormalities. Chronic exposure to benzene has been associated with an increased incidence of leukemia and multiple myeloma (tumor composed of cells of the type normally found in the bone marrow). This substance has caused adverse reproductive and fetal effects in laboratory animals.

Toxicity

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LD ₅₀ (oral)	Rat	930 mg/kg	LD ₅₀ (dermal)	Rabbit	9.4 ml/kg	LC ₅₀ (inh)	Mouse (4 hours)	9,980 ppm

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Specific organ toxicity, single exposure: May cause drowsiness or dizziness		Specific organ toxicity, repeated exposure: may cause damage to organs from repeated or prolonged exposure. May cause nervous system damage.	
CARCINOGENICITY			
IARC	Sufficient evidence in animals	Sufficient evidence in humans	Group 1: classifiable as a human carcinogen
NTP	Carcinogen		
California (Prop 65): Listed as carcinogen	NIOSH: Potential Occupational Carcinogen	ACGIH: A1 - Confirmed human carcinogen	OSHA: Select Carcinogen
MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS			
Respiratory or Skin sensitization: No data available		Germ cell mutagenicity: lab testing shows mutagenic effects (in vivo). Genotoxicity in humans (in vivo) lymphocyte. Genotoxic damage shown in mice.	
Reproductive toxicity: inhalation toxicity in mouse, including embryonic and fetal effects including death		Teratogenicity: Rat inhalation include effects include stunted fetus and death Mouse inhalation include effects include cytological changes and abnormalities to blood and lymphatic system.	
Skin Corrosion/irritation: will cause skin irritation		Serious eye damage, irritation -rabbit: mild eye irritation	
Synergistic effects: damage to bone marrow		Aspiration hazard: May be fatal if swallowed and enters airway.	
RTECS #: CY1400000			

1,2,4 TRIMETHYL BENZENE

Acute inhalation effects respiratory tract irritation. The toxicological properties of this substance have not been fully investigated. May cause drowsiness, unconsciousness, and central nervous system depression. Vapors may cause dizziness or suffocation. Prolonged or repeated skin contact may cause dermatitis. May cause anemia and other blood cell abnormalities. Prolonged exposure may produce a narcotic effect. Prolonged or repeated exposure may cause nausea, dizziness, and headache.

TOXICITY								
Type Of Dose	Specie	Result	Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LD ₅₀ (oral)	Rat	5.0 g/kg	LD ₅₀ (dermal)	Rabbit	No Data	LC ₅₀ (inh)	Rat (4 hours)	18 g/M ³
Specific organ toxicity, single exposure: No data available				Specific organ toxicity, repeated exposure: No data available				

CARCINOGENICITY								
IARC	Not Listed							
NTP	Not Listed							
California (Prop 65): Not Listed as carcinogen	NIOSH: Not Listed		ACGIH: Not Listed				OSHA: Not Listed	
MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS								
Respiratory or Skin sensitization: No data available				Germ cell mutagenicity: test performed on rats showed negative results				
Reproductive toxicity: No data available				Teratogenicity: No data available				
Skin Corrosion/irritation: No data available				Serious eye damage, irritation -rabbit: mild eye irritation				
Synergistic effects: No data available				Aspiration hazard: May be fatal if swallowed and enters airway.				
RTECS #: DC3325000								

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ETHYL BENZENE

Exposure to ethyl benzene may cause irritation of the skin and mucous membranes. It may also cause transient eye irritation at concentrations of 200 ppm. Breathing very high levels can cause dizziness and throat and eye irritation. Breathing lower levels has resulted in hearing effects and kidney damage in animals.

TOXICITY

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LD ₅₀ (oral)	Rat	3.5 g/kg	LD ₅₀ (dermal)	Rabbit	17.8 mL/kg	LC ₅₀ (inh)	Rat (4 hours)	55 g/M ³

Specific organ toxicity, single exposure: No data available	Specific organ toxicity, repeated exposure: No data available
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CARCINOGENICITY

IARC	Sufficient evidence in animals	Inadequate evidence in humans	Group 2B: Possibly carcinogenic to humans
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NTP	Not Listed
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California (Prop 65): Listed as carcinogen	NIOSH: Occupational Carcinogen	ACGIH: A4-Not Classifiable As Human Carcinogen	OSHA: Possible Select Carcinogen
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MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: No data available	Serious eye damage, irritation-rabbit: No data available
Synergistic effects: No data available	Aspiration hazard: No data available

RTECS #: DA0700000

NAPHTHALENE

Inhalation may cause respiratory tract irritation. Hemolytic anemia (destruction of red blood cells) is the primary health concern for humans exposed to naphthalene for either short or long periods of time. Other effects may include nausea, profuse perspiration, vomiting, kidney damage and liver damage. Chronic exposure may cause lung damage.

TOXICITY

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LD ₅₀ (oral)	Rat	490 mg/kg	LD ₅₀ (dermal)	Rabbit	>20 g/kg	LC ₅₀ (inh)	Rat (1 hour)	No Data

Specific organ toxicity, single exposure: No data available	Specific organ toxicity, repeated exposure: No data available
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CARCINOGENICITY

IARC	Sufficient evidence in animals	Inadequate evidence in humans	Group 2B: Possibly carcinogenic to humans
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NTP	Listed as reasonably anticipated to be a human carcinogen
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California (Prop 65): Listed as carcinogen	NIOSH: Not Listed	ACGIH: Not Listed	OSHA: Not Listed
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MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Respiratory or Skin sensitization: No data available	Germ cell mutagenicity: No data available
Reproductive toxicity: No data available	Teratogenicity: No data available
Skin Corrosion/irritation: Testing showed no irritation	Serious eye damage, irritation-rabbit: mild eye irritation
Synergistic effects: No data available	Aspiration hazard: No data available

RTECS #: QJ0525000

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SECTION 12 * ECOLOGICAL INFORMATION

GASOLINE

TOXICITY

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LC ₅₀	-----	No Data	EC ₅₀	-----	No Data
EC ₅₀	-----	No Data	EC ₅₀	Microtox	11.5 mg/L 48 Hours

PERSISTENCE AND DEGRADABILITY

Readily biodegradable in the environment. The presence of ethanol in this product may impede the biodegradation of benzene, toluene, ethyl benzene and xylene in groundwater, resulting in elongated plumes of these constituents.

BIOACCUMULATIVE POTENTIAL

Log P _{ow}	2.1 - 6.0	BCF	No Data
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MOBILITY IN SOIL

K _{oc} (Soil/water Partition Coefficient)	No Data
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TOLUENE

TOXICITY

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LC ₅₀	Goldfish	13 mg/L 96 Hours	EC ₅₀	Water Flea	11.5 mg/L 48 Hours
EC ₅₀	Green algae	>433 mg/L 72 Hours	EC ₅₀	Microtox	19.7 mg/L 48 Hours

BIOACCUMULATIVE POTENTIAL

Log P _{ow}	2.65	BCF	8.317
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XYLENE

TOXICITY

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LC ₅₀	Striped Bass	2 mg/L	LC ₅₀	Water Flea	0.6 mg/L 48 Hours
EC ₅₀	Green algae	72 mg/L 14 day	EC ₅₀	Microtox	8.4 µg/L 48 Hours
Log P _{ow}	2.77 - 3.15	BCF	No Data		

ETHYL ALCOHOL

TOXICITY

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LC ₅₀	Rainbow trout	12.9 g/L 96 Hours	EC ₅₀	Water Flea	9.2 g/L 48 Hours
EC ₅₀	Green algae	No Data	EC ₅₀	Microtox	34.6 g/L 30 minutes
Log P _{ow}	-0.32				

HEXANE

TOXICITY

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LC ₅₀	fathead minnow	2.5 mg/L 96 hours	EC ₅₀	Water Flea	3.87 mg/L 48 Hours
EC ₅₀	Green algae	12.8 g/L 3 hours	EC ₅₀	Microtox	No Data

MATERIAL NAME: E-Grade, Denatured Fuel Ethanol and Ethanol Blends >10% in Gasoline		SDS #: MMP-004
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BIOACCUMULATIVE POTENTIAL			
Log P _{ow}	3.9	BCF	No Data

BENZENE					
TOXICITY					
Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LC ₅₀	fathead minnow	15-32 mg/L 96 hours	EC ₅₀	Water Flea	10 mg/L 48 Hours
EC ₅₀	Green algae	29 mg/L 72 Hours	EC ₅₀	Microtox	No Data

BIOACCUMULATIVE POTENTIAL			
Log P _{ow}	1.83	BCF	4.265

1,2,4 TRIMETHYL BENZENE					
TOXICITY					
Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LC ₅₀	fathead minnow	7.72 mg/L 96 hours	EC ₅₀	Water Flea	6.14 mg/L 48 Hours
EC ₅₀	Green algae	No Data	EC ₅₀	Microtox	No Data

BIOACCUMULATIVE POTENTIAL			
Log P _{ow}	3.63	BCF	120.2

Log P _{ow}			3.44		
ETHYL BENZENE					
TOXICITY					
Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LC ₅₀	Sheepshead minnow	88 mg/L 96 hours	EC ₅₀	Water Flea	1.8-2.4 mg/L 48 Hours
EC ₅₀	Green algae	4.6 mg/L 72 Hours	EC ₅₀	Microtox	9.68 mg/L 30 Min

BIOACCUMULATIVE POTENTIAL			
Log P _{ow}	3.118	BCF	No Data


NAPHTHALENE					
TOXICITY					
Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LC ₅₀	fathead minnow	1-6.5 mg/L 96 hours	EC ₅₀	Water Flea	2.16 mg/L 48 Hours
EC ₅₀	Green algae	0.4 mg/L 96 Hours	EC ₅₀	Microtox	0.93 mg/L 30 Min

BIOACCUMULATIVE POTENTIAL			
Log P _{ow}	3.3	BCF	85.1

SECTION 13 * DISPOSAL CONSIDERATIONS
Not Meant To Be All Inclusive - Check Local, State, And Federal Laws And Regulations
Maximize product recovery for reclaim and reuse. Implement waste minimization principles. EPA U.S. Waste Codes: "Ignitable hazardous waste" (D001), unless proven otherwise. Use approved treatment, transporters, and disposal sites in compliance with all laws.
Waste Disposal Method: Should not be released into the environment.
Contaminated Packaging: Dispose of in accordance with local regulations.
US EPA Waste Number: D018 and D001

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SECTION 14 ☐ TRANSPORTATION INFORMATION

Not Meant To Be All Inclusive - Check Local, State, And Federal Laws And Regulations			
Element	U.S. DOT	IMDG	IATA
UN Number	UN 3475	UN 3475	UN 3475
UN Proper Shipping Name	Ethanol and Gasoline Mixture	Ethanol and Gasoline Mixture	Ethanol and Gasoline Mixture
Hazard Class(es)	3	3	3
Placard/Label			
Environmental Hazard	No	No	No
Packing Group	II	II	II

SECTION 15 ☐ REGULATORY INFORMATION

Agency	Listing Guidance only, consult specific regulations
OSHA	All ingredients are listed as hazardous under 29 CFR 1910.1200
CERCLA RQ's (40 CFR Part 102)	Naphthalene – 100 pounds
	Xylene - 100 pounds
	Toluene - 1,000 pounds
TSCA 8(a)	Naphthalene
TSCA 8(b)	All components are listed or exempted
SARA (40 CFR Part 355) TPQ's	None of the ingredients are listed
SARA 302/304/311/312 extremely hazardous substances	None of the ingredients are listed
SARA 302/304 emergency planning and notification	None of the ingredients are listed
SARA 302/304/311/312 hazardous chemicals	Gasoline; Xylene; Toluene; n-Hexane; Naphthalene; 1,2,4-Trimethylbenzene; Ethylbenzene; Benzene
RCRA	Benzene - U019
	Naphthalene – U165
	Xylene - U239
State Regulations: Massachusetts, New Jersey, and Pennsylvania	Xylene Toluene, Hexane, Benzene, Ethyl benzene ,1,2,4 Trimethyl Benzene, and Naphthalene
New York - all listed except 1,2,4 Trimethyl Benzene	
SARA 311/312 SDS distribution - chemical inventory - hazard identification	Gasoline: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Xylene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Toluene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; n-Hexane: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Naphthalene: Fire hazard, Immediate(acute) health hazard, Delayed (chronic) health hazard; 1,2,4-

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	Trimethylbenzene: Fire hazard, Delayed (chronic) health hazard; Ethylbenzene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Benzene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard.
EPA Form R Toxic Chemical Release Inventory	Toluene, Xylene, Hexane, 1,2,4 Trimethyl Benzene, Benzene, Ethyl benzene and Naphthalene
Clean Water Act (CWA) 307	Toluene, Benzene, Ethylbenzene and Naphthalene
Clean Water Act (CWA) 311	Xylene, Toluene, Benzene, Ethylbenzene and Naphthalene
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Listed
Clean Air Act Section 602 Class I Substances	Not Listed
Clean Air Act Section 602 Class II Substances	Not Listed

SECTION 16 ☒ OTHER INFORMATION

 <p>NFPA LABEL</p>	 <p>HMIS III LABEL</p> <p><u>Personal Protection Index</u> NPCA recommends that PPE codes be determined by the employer, who is familiar with the actual conditions under which chemicals in the facility are used.</p>
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Acronym List

°F=degrees Fahrenheit	°C=degrees Celsius	ACGIH= American Conference of Industrial Hygienists
APR=Air Purifying Respirator	BCF= Bioconcentration Factor	BuAc=Butyl Acetate
CANUTEC= Canadian Transport Emergency Centre	CAS=Chemical Abstract Service	CERCLA= Comprehensive Environmental Response, Compensation, and Liability Act
CHEMTREC= Chemical Transportation Emergency Center	CNS=Central Nervous System	CWA=Clean Water Act
DOT=Department of Transportation	EC50= Effective Concentration Fifty	EPA=Environmental Protection Agency
g/Kg=Grams per Kilogram	g/M ³ =Grams per Cubic Meter	GHS=Global Harmonization System
H ₂ O=Water	HAP=Hazardous Air Pollutants	HMIS= Hazardous Materials Identification System
IARC= International Agency for Research on Cancer	IATA= International Air Transport Association	IMDG= International Maritime Dangerous Goods
LC ₅₀ =Lethal Concentration Fifty	LD ₅₀ =Lethal Dose Fifty	LEL=Lower Explosive Limit
Log P _{ow} =Octanol/water partition coefficient	mg/Kg=Milligrams per Kilogram	mg/L=Milligrams per Liter
mL/Kg=Milliliters per Kilogram	mm HG=millimeters of mercury	NFPA=National Fire Protection Association
NIOSH= National Institute for Occupational Safety and Health	NTP=National Toxicology Program	OSHA=Occupational Safety and Health Administration
PEL=Permissible Exposure Limit	ppm=Parts per Million	RCRA=Resource Conservation and Recovery Act

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RQ=Reportable Quantities	RTECS=Registry of Toxic Effects of Chemical Substances	SARA= Superfund Amendments and Reauthorization Act
SDS=Safety Data Sheet	SETIQ= Emergency Transportation System for the Chemical Industry; Mexico	STEL=Short Term Exposure Limit
TLV=Threshold Limit Value	TPQ=Threshold Planning Quantity	TSCA=Toxic Substance and Control Act
TWA=Time Weighted Average	UEL=Upper Explosive Limit	VOC=Volatile Organic Compounds

SDS REVISIONS: Reformatted to meet GHS Requirements

SDS CREATION DATE: 05/30/14 **REVISION #0:** 05/30/14

DISCLAIMER

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SDS DEVELOPER:  DATE: 05/30/14
Cass Willard, CIH