



# SAFETY DATA SHEET

SDS ID NO.: 0103ARC011

Revision date 03/23/2021

## 1. IDENTIFICATION

**Product Name** ARCO Gasoline with MTBE (México)

**Synonym** Regular gasoline with MTBE; Premium gasoline with MTBE

**Product code** 0103ARC011

**Chemical family** Complex Hydrocarbon Substance

**Recommended use** Fuel.

**Restrictions on use** All others.

**Manufacturer, Importer, or Responsible Party Name and Address**  
**TESORO REFINING & MARKETING COMPANY LLC**  
**A subsidiary of Marathon Petroleum Corporation**  
**539 South Main Street**  
**Findlay, OH 45840**

**SDS Information** +1-419-421-3070

**24 Hour Emergency Telephone** CHEMTREC: +1-800-681-9531 (CCN# 13740)

## 2. HAZARD IDENTIFICATION

### Mexico Regulatory Status

This chemical was classified in accordance with the NOM-018-STPS-2015 Standard.

### Classification

Flammable liquids	Category 1
Skin corrosion/irritation	Category 2
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive toxicity	Category 1B Effects on or via lactation
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 1
Aspiration toxicity	Category 1
Chronic aquatic toxicity	Category 2

### **Hazards Not Otherwise Classified (HNOC)**

Static accumulating flammable liquid

### Label Elements

#### **Danger**

H224 - EXTREMELY FLAMMABLE LIQUID AND VAPOR  
H304 - May be fatal if swallowed and enters airways  
H315 - Causes skin irritation  
H335 - May cause respiratory irritation  
H336 - May cause drowsiness or dizziness  
H340 - May cause genetic defects  
H350 - May cause cancer  
H360 - May damage fertility or the unborn child  
H362 - May cause harm to breast-fed children  
H372 - Causes damage to organs (blood, blood-forming organs, immune system) through prolonged or repeated exposure

H411 - Toxic to aquatic life with long lasting effects  
 May accumulate electrostatic charge and ignite or explode



**Appearance** Clear yellow liquid

**Physical State** Liquid

**Odor** Hydrocarbon

#### 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/hot surfaces. — No smoking  
 P233 - Keep container tightly closed  
 P240 - Ground/bond container and receiving equipment  
 P241 - Use explosion-proof electrical/ventilating/lighting/equipment  
 P242 - Use only non-sparking tools  
 P243 - Take precautionary measures against static discharge  
 P270 - Do not eat, drink or smoke when using this product  
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
 P271 - Use only outdoors or in a well-ventilated area  
 P263 - Avoid contact during pregnancy/while nursing  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection  
 P264 - Wash face, hands and any exposed skin thoroughly after handling  
 P273 - Avoid release to the environment

#### Precautionary Statements - Response

P308 + P313 + P314 - IF exposed, concerned, or you feel unwell: Get medical advice/attention  
 P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
 P332 + P313 - If skin irritation occurs: Get medical advice/attention  
 P363 - Wash contaminated clothing before reuse  
 P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 P312 - Call a POISON CENTER or doctor if you feel unwell  
 P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
 P331 - Do NOT induce vomiting  
 P370 + P378 - In case of fire: Use water spray to extinguish  
 P391 - Collect spillage

#### Precautionary Statements - Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed  
 P235 - Keep cool  
 P405 - Store locked up

#### Precautionary Statements - Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Composition Information

Name	CAS Number	% Concentration
Gasoline	86290-81-5	85-100
Heptane (mixed isomers)	142-82-5	2.5-26
Toluene	108-88-3	1-20

Pentane (mixed isomers)	109-66-0	6-19
Methyl Tert-Butyl Ether	1634-04-4	0-15
Butane (mixed isomers)	106-97-8	0.5-14
Hexane Isomers (other than n-Hexane)	107-83-5	2-12
Xylene (mixed isomers)	1330-20-7	2-10
Benzene	71-43-2	0.1-4.9
n-Hexane	110-54-3	0.2-4.5
Cumene	98-82-8	0-4
1,2,4 Trimethylbenzene	95-63-6	0.5-4
Ethylbenzene	100-41-4	0-2.5
Cyclohexane	110-82-7	0-1.5
Octane (mixed isomers)	111-65-9	0-1.5
Naphthalene	91-20-3	0-0.5

Benzene concentration is percent by volume. All other concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

## 4. FIRST AID MEASURES

### First aid measures

#### **General advice**

In case of accident or if you feel unwell, seek medical advice immediately (show directions for use or safety data sheet if possible).

#### **Inhalation**

Remove to fresh air. If not breathing, utilize bag valve mask or other form of barrier device to institute rescue breathing. If breathing is difficult, ensure airway is clear, give oxygen and continue to monitor. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). Keep affected person warm and at rest. If symptoms occur get medical attention.

#### **Skin contact**

Immediately wash exposed skin with plenty of soap and water while removing contaminated clothing and shoes. May be absorbed through the skin in harmful amounts. Get medical attention if irritation persists. Any injection injury from high pressure equipment should be evaluated immediately by a physician as potentially serious (See NOTES TO PHYSICIAN).

Place contaminated clothing in closed container until cleaned or discarded. If clothing is to be laundered, inform the person performing the operation of contaminant's hazardous properties. Destroy contaminated, non-chemical resistant footwear.

#### **Eye contact**

Flush immediately with large amounts of water for at least 15 minutes. Gently remove contacts while flushing. Eyelids should be held away from the eyeball to ensure thorough rinsing. Gently remove contacts while flushing. Get medical attention if irritation persists.

#### **Ingestion**

Do not induce vomiting because of danger of aspirating liquid into lungs, causing serious damage and chemical pneumonitis. If spontaneous vomiting occurs, keep head below hips, or if patient is lying down, turn body and head to side to prevent aspiration and monitor for breathing difficulty. Never give anything by mouth to an unconscious person. Keep affected person warm and at rest. Get immediate medical attention.

### Most important signs and symptoms, both short-term and delayed with overexposure

#### **Adverse effects**

Irritating to the skin and mucous membranes. Symptoms may include redness, itching, and inflammation. May cause nausea, vomiting, diarrhea, and signs of nervous system depression: headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Aspiration hazard. May cause coughing, chest pains, shortness of breath, pulmonary edema and/or chemical pneumonitis. Prolonged or repeated exposure may cause adverse effects on blood, blood-forming organs, and immune system. Repeated or prolonged skin contact may cause drying, reddening, itching and cracking.

### Indication of any immediate medical attention and special treatment needed

#### **Notes to physician**

INHALATION: This material (or a component) sensitizes the myocardium to the effects of sympathomimetic amines. Epinephrine and other sympathomimetic drugs may initiate

cardiac arrhythmias in individuals exposed to this material. Administration of sympathomimetic drugs should be avoided.

SKIN: Leaks or accidents involving high-pressure equipment may inject a stream of material through the skin and initially produce an injury that may not appear serious. Only a small puncture wound may appear on the skin surface but, without proper treatment and depending on the nature, original pressure, volume, and location of the injected material, can compromise blood supply to an affected body part. Prompt surgical debridement of the wound may be necessary to prevent irreversible loss of function and/or the affected body part. High pressure injection injuries may be **SERIOUS SURGICAL EMERGENCIES**.

INGESTION: This material represents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended.

## 5. FIRE-FIGHTING MEASURES

<b>Suitable extinguishing media</b>	For small fires, Class B fire extinguishing media such as CO <sub>2</sub> , dry chemical, foam or water spray can be used. For large fires, water spray, fog or foam can be used. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.
<b>Unsuitable extinguishing media</b>	Do not use straight water streams to avoid spreading fire.
<b>Specific hazards arising from the chemical</b>	This product has been determined to be an extremely flammable liquid per the OSHA Hazard Communication Standard and should be handled accordingly. May accumulate electrostatic charge and ignite or explode. Vapors may travel along the ground or be moved by ventilation and ignited by many sources such as pilot lights, sparks, electric motors, static discharge, or other ignition sources at locations distant from material handling. Flashback can occur along vapor trail. For additional fire related information, see NFPA 30 or the Emergency Response Guidebook 128.
<b>Hazardous combustion products</b>	Smoke, carbon monoxide, and other products of incomplete combustion.
<b>Explosion data</b>	
<b>Sensitivity to mechanical impact:</b>	No.
<b>Sensitivity to static discharge:</b>	Yes.
<b>Special protective equipment and precautions for firefighters</b>	Firefighters should wear full protective clothing and positive-pressure self-contained breathing apparatus (SCBA) with a full face-piece, as appropriate. Avoid using straight water streams. Water may be ineffective in extinguishing low flash point fires, but can be used to cool exposed surfaces. Avoid excessive water spray application. Water spray and foam must be applied carefully to avoid frothing and from as far a distance as possible. Keep run-off water out of sewers and water sources.
<b>Additional firefighting tactics</b>	<p><b>FIRES INVOLVING TANKS OR CAR/TRAILER LOADS:</b> Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after the fire is out. Do not direct water at source of leak or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. <b>ALWAYS</b> stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles: if this is impossible, withdraw from area and let fire burn.</p> <p><b>EVACUATION:</b> Consider initial downwind evacuation for at least 1000 feet. If tank, rail car or tank truck is involved in a fire, ISOLATE for 5280 feet (1 mile) in all directions; also, consider initial evacuation of 5280 feet (1 mile) in all directions.</p>

NFPA

Health 1

Flammability 3

Instability 0

Special Hazard -

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions</b>	Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Eliminate all ignition sources.
<b>Protective equipment</b>	Use personal protection measures as recommended in Section 8.
<b>Emergency procedures</b>	Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Notify local health and pollution control agencies, if appropriate.
<b>Environmental precautions</b>	Avoid release to the environment. Avoid subsoil penetration. Ethanol in gasoline phase separates in contact with water. Monitor downstream for dissolved ethanol or other appropriate indicators.
<b>Methods and materials for containment</b>	Contain liquid with sand or soil. Prevent spilled material from entering storm drains, sewers, and open waterways.
<b>Methods and materials for cleaning up</b>	Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids. Recover and return free product to proper containers. When recovering free liquids ensure all equipment is grounded and bonded. Use only non-sparking tools.

## 7. HANDLING AND STORAGE

<b>Safe handling precautions</b>	<p>NEVER SIPHON THIS PRODUCT BY MOUTH. Use appropriate grounding and bonding practices. Static accumulating flammable liquid. Bonding and grounding may be insufficient to eliminate the hazard from static electricity. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. Vapors may travel along the ground or be moved by ventilation. Flashback may occur along vapor trails. No smoking. Use only non-sparking tools. Avoid contact with skin, eyes and clothing. Avoid breathing fumes, gas, or vapors. Use only with adequate ventilation. Avoid repeated and prolonged skin contact. Use personal protection measures as recommended in Section 8. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water. Do not cut, drill, grind or weld on empty containers since explosive residues may remain. Refer to applicable EPA, OSHA, NFPA and consistent state and local requirements.</p> <p>Hydrocarbons are basically non-conductors of electricity and can become electrostatically charged during mixing, filtering, pumping at high flow rates or loading and transfer operations. If this charge reaches a sufficiently high level, sparks can form that may ignite the vapors of flammable liquids. Sudden release of hot organic chemical vapors or mists from process equipment operating under elevated temperature and pressure, or sudden ingress of air into vacuum equipment may result in ignition of vapors or mists without the presence of obvious ignition sources. Nozzle spouts must be kept in contact with the containers or tank during the entire filling operation.</p> <p>Portable containers should never be filled while in or on a motor vehicle or marine craft. Containers should be placed on the ground. Static electric discharge can ignite fuel vapors when filling non-grounded containers or vehicles on trailers. The nozzle spout must be kept in contact with the container before and during the entire filling operation. Use only approved containers.</p> <p>A buildup of static electricity can occur upon re-entry into a vehicle during fueling especially in cold or dry climate conditions. The charge is generated by the action of dissimilar fabrics (i.e., clothing and upholstery) rubbing across each other as a person enters/exits the vehicle. A flash fire can result from this discharge if sufficient flammable vapors are present. Therefore, do not get back in your vehicle while refueling.</p> <p>Cellular phones and other electronic devices may have the potential to emit electrical charges (sparks). Sparks in potentially explosive atmospheres (including fueling areas such as gas stations) could cause an explosion if sufficient flammable vapors are present. Therefore, turn off cellular phones and other electronic devices when working in potentially explosive atmospheres or keep devices inside your vehicle during refueling.</p>
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High-pressure injection of any material through the skin is a serious medical emergency even though the small entrance wound at the injection site may not initially appear serious. These injection injuries can occur from high-pressure equipment such as paint spray or grease or guns, fuel injectors, or pinhole leaks in hoses or hydraulic lines and should all be considered serious. High pressure injection injuries may be SERIOUS SURGICAL EMERGENCIES (See First Aid Section 4).

**Storage conditions**

Store in properly closed containers that are appropriately labeled and in a cool, well-ventilated area. Do not store near an open flame, heat or other sources of ignition.

**Incompatible materials**

Strong oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	Mexico - Occupational exposure limits	ACGIH TLV	NIOSH IDLH
Gasoline 86290-81-5	300 ppm TWA VLE-PPT 500 ppm STEL [PPT-CT]	300 ppm TWA 500 ppm STEL	-
Heptane (mixed isomers) 142-82-5	400 ppm TWA VLE-PPT 1600 mg/m <sup>3</sup> TWA VLE-PPT 500 ppm STEL [PPT-CT]	400 ppm TWA 500 ppm STEL	750 ppm
Toluene 108-88-3	20 ppm TWA VLE-PPT	20 ppm TWA	500 ppm
Pentane (mixed isomers) 109-66-0	600 ppm TWA VLE-PPT	1000 ppm TWA	1500 ppm
Methyl Tert-Butyl Ether 1634-04-4	50 ppm TWA VLE-PPT	50 ppm TWA	-
Butane (mixed isomers) 106-97-8	1000 ppm TWA VLE-PPT	1000 ppm STEL	1600 ppm
Hexane Isomers (other than n-Hexane) 107-83-5	500 ppm TWA VLE-PPT 1000 ppm STEL [PPT-CT]	500 ppm TWA 1000 ppm STEL	-
Xylene (mixed isomers) 1330-20-7	100 ppm TWA VLE-PPT 150 ppm STEL [PPT-CT]	100 ppm TWA 150 ppm STEL	900 ppm
Benzene 71-43-2	0.5 ppm TWA VLE-PPT 2.5 ppm STEL [PPT-CT]	0.5 ppm TWA 2.5 ppm STEL Skin - potential significant contribution to overall exposure by the cutaneous route	500 ppm
n-Hexane 110-54-3	50 ppm TWA VLE-PPT	50 ppm TWA Skin - potential significant contribution to overall exposure by the cutaneous route	1100 ppm
Cumene 98-82-8	50 ppm TWA VLE-PPT	5 ppm TWA	900 ppm
1,2,4 Trimethylbenzene 95-63-6	25 ppm TWA VLE-PPT 125 mg/m <sup>3</sup> TWA VLE-PPT	25 ppm TWA	-
Ethylbenzene 100-41-4	20 ppm TWA VLE-PPT	20 ppm TWA	800 ppm
Cyclohexane 110-82-7	100 ppm TWA VLE-PPT	100 ppm TWA	1300 ppm
Octane (mixed isomers) 111-65-9	300 ppm TWA VLE-PPT 1450 mg/m <sup>3</sup> TWA VLE-PPT	300 ppm TWA	1000 ppm
Naphthalene 91-20-3	10 ppm TWA VLE-PPT 50 mg/m <sup>3</sup> TWA VLE-PPT 15 ppm STEL [PPT-CT]	10 ppm TWA Skin - potential significant contribution to overall exposure by the cutaneous route	250 ppm

**Notes:** No further information available.

**Engineering measures**

Local or general exhaust required in an enclosed area or when there is inadequate ventilation. Use mechanical ventilation equipment that is explosion-proof.

**Personal protective equipment**

<b>Eye protection</b>	Use goggles or face-shield if the potential for splashing exists.
<b>Skin and body protection</b>	Use nitrile rubber, Viton® or PVA gloves for repeated or prolonged skin exposure. Glove suitability is based on workplace conditions and usage. Contact the glove manufacturer for specific advice on glove selection and breakthrough times.
<b>Respiratory protection</b>	Use a NIOSH approved organic vapor chemical cartridge or supplied air respirators when there is the potential for airborne exposures to exceed permissible exposure limits or if excessive vapors are generated. Observe respirator assigned protection factors (APFs) criteria cited in federal OSHA 29 CFR 1910.134. Self-contained breathing apparatus should be used for fire fighting.
<b>Hygiene measures</b>	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing.



## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

<b>Appearance</b>	Clear yellow liquid
<b>Physical State</b>	Liquid
<b>Color</b>	Yellow
<b>Odor</b>	Hydrocarbon
<b>Odor Threshold</b>	No data available.

<b><u>Property</u></b>	<b><u>Values (method)</u></b>
<b>pH</b>	Not applicable
<b>Melting Point / Freezing Point</b>	No data available.
<b>Initial Boiling Point / Boiling Range</b>	21-222 °C / 70-432 °F (ASTM D86)
<b>Flash Point</b>	-43 °C / -45 °F
<b>Evaporation Rate</b>	No data available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Flammability Limit in Air (%):</b>	
<b>Upper Flammability Limit:</b>	7.6
<b>Lower Flammability Limit:</b>	1.4
<b>Explosion Limits</b>	No data available.
<b>Vapor Pressure</b>	5.5-15 psi (ASTM D4814)
<b>Vapor Density</b>	3-4
<b>Specific Gravity / Relative Density</b>	0.76 (0.69-0.76)
<b>Water Solubility</b>	Negligible
<b>Partition Coefficient</b>	2.13-4.5
<b>Autoignition Temperature</b>	280 °C / 536 °F
<b>Decomposition Temperature</b>	No data available.
<b>Kinematic Viscosity</b>	No data available.
<b>Molecular Weight</b>	No data available.
<b>VOC Content (%)</b>	100%

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	The product is non-reactive under normal conditions.
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<b>Chemical stability</b>	The material is stable at 70°F (21°C ), 760 mmHg pressure.
<b>Possibility of hazardous reactions</b>	None under normal processing.
<b>Hazardous polymerization</b>	Will not occur.
<b>Conditions to avoid</b>	Excessive heat, sources of ignition, open flame.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	None known under normal conditions of use.

## 11. TOXICOLOGICAL INFORMATION

### Potential short-term adverse effects from overexposures

<b>Inhalation</b>	May cause irritation of respiratory tract. May cause drowsiness or dizziness. Breathing high concentrations of this material in a confined space or by intentional abuse can cause irregular heartbeats which can cause death.
<b>Eye contact</b>	Exposure to vapor or contact with liquid may cause mild eye irritation, including tearing, stinging, and redness.
<b>Skin contact</b>	Irritating to skin. Effects may become more serious with repeated or prolonged contact. May be absorbed through the skin in harmful amounts. Causes skin irritation.
<b>Ingestion</b>	May be fatal if swallowed or vomited and enters airways. May cause irritation of the mouth, throat and gastrointestinal tract.

### Acute toxicological data

Name	Oral LD50	Dermal LD50	Inhalation LC50
Gasoline 86290-81-5	14000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h
Heptane (mixed isomers) 142-82-5	-	3000 mg/kg (Rabbit)	103 g/m <sup>3</sup> (Rat) 4 h
Toluene 108-88-3	> 2000 mg/kg (Rat)	8390 mg/kg (Rabbit)	12.5 mg/L (Rat) 4 h
Pentane (mixed isomers) 109-66-0	> 2000 mg/kg ( Rat )	-	364 mg/L (Rat) 4 h
Methyl Tert-Butyl Ether 1634-04-4	>2000 mg/kg (Rat)	10000 mg/kg (Rabbit)	23576 ppm (Rat) 4 h
Butane (mixed isomers) 106-97-8	-	-	658 mg/L (Rat) 4 h
Hexane Isomers (other than n-Hexane) 107-83-5	> 5000 mg/kg (Rat)	-	-
Xylene (mixed isomers) 1330-20-7	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.04 mg/L (Rat) 4 h
Benzene 71-43-2	> 2000 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	> 20 mg/l (Rat) 4 h
n-Hexane 110-54-3	15000 mg/kg (Rat)	3000 mg/kg (Rabbit)	48000 ppm (Rat) 4 h
Cumene 98-82-8	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 20 mg/L (Rat) 6 h
1,2,4 Trimethylbenzene 95-63-6	3280 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	18,000 mg/m <sup>3</sup> (Rat) 4 h
Ethylbenzene 100-41-4	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	17.2 mg/L (Rat) 4 h
Cyclohexane 110-82-7	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	13.9 mg/L (Rat) 4 h
Octane (mixed isomers) 111-65-9	>2000 mg/kg (Rat)	-	118 g/m <sup>3</sup> (Rat) 4 h
Naphthalene	533 mg/kg (Mouse)	> 2000 mg/kg (Rabbit)	> 340 mg/m <sup>3</sup> (Rat) 1 h



91-20-3

**Immediate and delayed effects as well as chronic effects from short and long-term exposure**

**GASOLINE:** Gasoline blending streams, or naphthas, may be fatal if swallowed and enter the airway. Vapors may be irritating if inhaled. Altered mental state, drowsiness, dizziness, peripheral motor neuropathy, irreversible brain damage (gasoline sniffer's neuropathy), delirium, seizures, and sudden death have been reported from repeated exposure or overexposure. Lifetime exposure of laboratory mice and rats to wholly-vaporized unleaded gasoline produced an increased incidence of liver tumors in female mice at the highest exposure concentration and  $\alpha$ -2 urinary globulin-mediated kidney tumors in male rats. Lifetime repeated application of various gasoline blending streams or naphthas to the skin of mice caused an irritation-dependent increased incidence of skin tumors. These tumors occur through a mechanism of questionable human relevance.

**TOLUENE:** Inhalation abuse of toluene at high concentrations has been associated with adverse effects on the liver, kidney and nervous system, and can cause nervous system depression, cardiac arrhythmias, and death. Studies of workers indicate long-term exposure may be related to impaired color vision and hearing. Some studies of workers suggest long-term exposure may be associated with neurobehavioral and mental functional changes. Laboratory animal studies indicate some changes in reproductive organs after exposure to high airborne concentrations, but no significant effects on mating performance or reproduction were observed. Positive findings include small increases in minor skeletal and visceral malformations and developmental delays following maternal exposure to high concentrations. Adverse effects on the liver, kidney, thymus and nervous system of laboratory animal were observed after very high levels of prolonged and repeated exposure.

**PENTANE and BUTANE:** Laboratory animal studies indicate exposure to extremely high levels (1-10 vol.% in air) may cause cardiac arrhythmias (irregular heartbeats) which may be serious or fatal.

**METHYL TERTIARY BUTYL ETHER (MTBE):** Studies of workers and consumers exposed to MTBE have shown some evidence of transient respiratory irritation and unpleasant odor. Repeat-dose inhalation and gavage studies in laboratory animals show evidence of adverse effects on the kidney, liver and immune system. Inhalation developmental studies in laboratory animals showed some evidence of late resorptions and increased nonviable implants, reduced fetal body weight, and increased soft tissue and skeletal malformations in mice following exposure during gestation. Similar studies in rats and rabbits were negative at the same exposure levels. An increased incidence of nephropathy and renal tumors was observed in lifetime inhalation studies in male rats. These effects appear to be associated with alpha-2-u-globulin accumulation; a phenomenon not believed to be relevant to humans. In addition, findings from lifetime inhalation studies included an increase in testicular tumors in rats and an increase in liver tumors in male and female mice. An increase in lymphomas and leukemia was observed in female rats in lifetime gavage studies. The significance of the animal findings at high exposures are not believed to be directly related to potential human health hazards. Findings from genotoxicity studies have been negative.

**XYLENE:** Overexposure to airborne xylene may cause upper respiratory tract irritation, headache, cyanosis, blood serum changes, nervous system damage and narcosis. Impaired neurological function has been reported in workers exposed to solvents including xylene. Laboratory animal studies have shown evidence of impaired hearing after prolonged exposure high airborne concentrations. Laboratory animal studies suggest some changes in reproductive organs after exposure to high airborne concentrations of xylene without an effect on reproduction. Skeletal and visceral malformations, developmental delays, and increased fetal resorptions were observed in laboratory animals after extremely high airborne concentrations with evidence of maternal toxicity. Adverse effects on the liver, kidney, and bone marrow were observed in laboratory animals after prolonged and repeated exposure to high airborne concentrations of xylene.

**BENZENE:** Benzene exposure may cause skin, eye and respiratory irritation. Excessive exposures may cause central nervous system effects. Numerous studies of workers

exposed to airborne benzene for prolonged or repeated periods show strong evidence that overexposure can cause cancer of the blood, AML (acute myeloid leukemia), along with other disorders indicating damage to the blood forming organs including aplastic anemia, leukopenia, thrombocytopenia, and the development of myelodysplastic syndrome. Some studies of pregnant women occupationally exposed to benzene suggest associations with an increased risk of miscarriage, stillbirth, reduced birth weight, and gestational age. Prolonged and repeated exposure to benzene has induced chromosomal aberrations in circulating human lymphocytes, in bone marrow cells of laboratory animals, and in sperm cells of both humans and laboratory animals.

**N-HEXANE:** Short-term overexposure to n-hexane vapor may cause headache, nausea, vomiting, dizziness, lightheadedness, loss of consciousness, coma, and even death in humans. Respiratory effects of overexposure may include nose, throat, and lung irritation, coughing, wheezing, and shortness of breath. Direct and prolonged contact with liquid may cause dryness and redness of the skin. Long-term or repeated overexposure to n-hexane can cause peripheral nerve damage. Initial signs are numbness of the fingers and toes. Motor/muscle weakness can occur in the digits, but may also involve muscles of the arms, forearms, and thighs. Onset of these signs may be delayed for several months to a year after initial exposure. Repeated and sustained inhalation exposure to high vapor concentrations of n-hexane resulted in degenerative changes in the testes and reduced sperm count in male laboratory rats.

**CUMENE:** High airborne concentrations of cumene may cause irritation of the eyes, skin, and respiratory tract. Excessive exposures may cause central nervous system effects. Lifetime inhalation exposure of mice to cumene resulted in lung tumors in both males and females and liver tumors in females. Rats similarly exposed to cumene exhibited male-specific kidney tumors.

**1,2,4-TRIMETHYLBENZENE:** Contact with eyes can cause serious eye irritation, redness, and pain. Brief inhalation exposure to high vapor concentrations may cause respiratory irritation. Overexposure by inhalation and ingestion can cause confusion, dizziness, drowsiness, headache, vomiting, cough, and sore throat. Long-term overexposure has been associated with asthmatic bronchitis. Direct prolonged skin contact can cause irritation, redness and dry skin.

**ETHYLBENZENE:** Lifetime exposure studies of rodents to ethylbenzene reported elevated kidney tumors in male and female rats exposed to the highest concentration tested. Tumors of the lungs were elevated in male mice and in the livers of females exposed at the highest concentration tested. Effects on the liver, kidney, lung, thyroid, and pituitary of these animals as well. Laboratory animal studies (rats) demonstrated hearing loss in combination with exposure to noise.

**NAPHTHALENE:** Excessive exposure to naphthalene may cause nausea, vomiting, diarrhea, blood in the urine, and a yellow color to the skin. Lifetime inhalation exposure of laboratory rodents to naphthalene resulted in cancers of the respiratory tract in male and female rats. A small increase in cancer of the lung was observed in female mice, but no evidence of lung cancer was observed in male mice. Long-term exposure to excessive airborne naphthalene concentrations may result in destruction of red blood cells, a condition referred to as hemolytic anemia.

**CARBON MONOXIDE:** Chemical asphyxiant with no warning properties (such as odor). At 400-500 ppm for 1 hour headache and dyspnea may occur. If activity is increased, symptoms of overexposure may include nausea, irritability, increased respiration, tinnitus, sweating, chest pain, confusion, impaired judgement, dizziness, weakness, drowsiness, ataxia, irregular heart beat, cyanosis and pallor. Levels in excess of 1000 ppm can result in collapse, loss of consciousness, respiratory failure and death. Extremely high concentrations (12,800 ppm) can cause immediate unconsciousness and death in 1-3 minutes. Repeated anoxia can lead to central nervous system damage and peripheral neuropathy, with loss of sensation in the fingers, amnesia, and mental deterioration and possible congestive heart failure. Damage may also occur to the fetus, lung, liver, kidney, spleen, cardiovascular system and other organs.

COMBUSTION ENGINE EXHAUST: Lifetime inhalation studies with laboratory animals exposed to gasoline engine exhaust did not produce any carcinogenic effects in mice, rats, or hamsters. Laboratory animal skin painting studies of gasoline engine exhaust condensates/extracts produced an increase in tumors.

### Adverse effects related to the physical, chemical and toxicological characteristics

<b>Signs and symptoms</b>	Irritating to the skin and mucous membranes. Symptoms may include redness, itching, and inflammation. May cause nausea, vomiting, diarrhea, and signs of nervous system depression: headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Aspiration hazard. May cause coughing, chest pains, shortness of breath, pulmonary edema and/or chemical pneumonitis. Prolonged or repeated exposure may cause damage to organs. Repeated or prolonged skin contact may cause drying, reddening, itching and cracking.
<b>Acute toxicity</b>	The chemical substance or mixture has been evaluated with the data available and does not satisfy the classification criteria.
<b>Skin corrosion/irritation</b>	Causes skin irritation.
<b>Serious eye damage/eye irritation</b>	The chemical substance or mixture has been evaluated with the data available and does not satisfy the classification criteria.
<b>Sensitization</b>	The chemical substance or mixture has been evaluated with the data available and does not satisfy the classification criteria.
<b>Mutagenic effects</b>	May cause genetic defects.

### **Carcinogenicity** May cause cancer.

Name	ACGIH (Class)	IARC (Class)	NTP	OSHA
Gasoline 86290-81-5	Confirmed animal carcinogen (A3)	Possible human carcinogen (2B)	Not Listed	Not Listed
Toluene 108-88-3	Not classifiable (A4)	Not classifiable (3)	Not Listed	Not Listed
Methyl Tert-Butyl Ether 1634-04-4	Not Listed	Not classifiable (3)	Not Listed	Not Listed
Xylene (mixed isomers) 1330-20-7	Not classifiable (A4)	Not classifiable (3)	Not Listed	Not Listed
Benzene 71-43-2	Confirmed human carcinogen (A1)	Carcinogenic to humans (1)	Known to be human carcinogen	Known carcinogen
Cumene 98-82-8	Not Listed	Possible human carcinogen (2B)	Reasonably anticipated to be a human carcinogen	Not Listed
Ethylbenzene 100-41-4	Confirmed animal carcinogen (A3)	Possible human carcinogen (2B)	Not Listed	Not Listed
Naphthalene 91-20-3	Confirmed animal carcinogen (A3)	Possible human carcinogen (2B)	Reasonably anticipated to be a human carcinogen	Not Listed

<b>Reproductive toxicity</b>	Suspected of damaging fertility or the unborn child. May cause harm to breastfed babies.
<b>Specific Target Organ Toxicity (STOT) - single exposure</b>	May cause respiratory irritation. May cause drowsiness or dizziness.
<b>Specific Target Organ Toxicity (STOT) - repeated exposure</b>	Causes damage to organs (blood, blood-forming organs, immune system) through prolonged or repeated exposure.
<b>Aspiration hazard</b>	May be fatal if swallowed or vomited and enters airways.

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	This product should be considered toxic to aquatic organisms, with the potential to cause long lasting adverse effects in the aquatic environment.
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Name	Fish	Crustacea	Algae/aquatic plants
Gasoline 86290-81-5	96-hr LC50 = 11 mg/l Rainbow trout (static)	48-hr LC50 = 7.6 mg/l Daphnia magna	72-hr EC50 = 56 mg/l Algae
Heptane (mixed isomers) 142-82-5	96-hr LC50 = 375 mg/L Tilapia	-	-
Toluene 108-88-3	96-hr LC50 <= 10 mg/l Rainbow trout	48-hr EC50 = 5.46-9.83 mg/l Daphnia magna 48-hr EC50 = 11.5 mg/l Daphnia magna (Static)	72-hr EC50 = 12.5 mg/l Algae
Pentane (mixed isomers) 109-66-0	96-hr LC50 >1 - <10 mg/L Rainbow trout	48-hr EC50 = 9.7 mg/L Daphnia magna	-
Methyl Tert-Butyl Ether 1634-04-4	96-hr LC50 = 672 mg/l Fathead minnow (flow-through)	EC50 = 542 mg/l Daphnia magna	72-hr EC50 = 800 mg/l Algae
Xylene (mixed isomers) 1330-20-7	96-hr LC50 = 8 mg/l Rainbow trout	48-hr LC50 = 3.82 mg/l Daphnia magna	72-hr EC50 = 11 mg/l Algae
Benzene 71-43-2	96-hr LC50 = 5.3 mg/l Rainbow trout (flow-through)	48-hr EC50 = 8.76-15.6 mg/l Daphnia magna (Static)	72-hr EC50 = 29 mg/l Algae
n-Hexane 110-54-3	96-hr LC50 = 2.5 mg/l Fathead minnow	-	-
Cumene 98-82-8	96-hr LC50 = 6.04-6.61 mg/l Fathead minnow (Flow-through) 96-hr LC50 = 2.7 mg/l Rainbow trout (semi-static)	48-hr EC50 = 7.9-14.1 mg/l Daphnia magna (static)	72-hr EC50 = 2.6 mg/l Algae
1,2,4 Trimethylbenzene 95-63-6	96-hr LC50 = 7.19-8.28 mg/l Fathead minnow (flow-through)	48-hr EC50 = 6.14 mg/L Daphnia magna	-
Ethylbenzene 100-41-4	96-hr LC50 = 4 mg/L Rainbow trout	48-hr EC50 = 1-4 mg/L Daphnia magna	72-hr EC50 = 1.7-7.6 mg/l Algae
Cyclohexane 110-82-7	96-hr LC50 = 3.96-5.18 mg/l Fathead minnow	48-hr EC50 = 1.7-3.5 mg/L Bay shrimp	72-hr EC50 = 500 mg/l Algae
Octane (mixed isomers) 111-65-9	-	48-hr LC50 = 0.38 mg/l Daphnia magna	-
Naphthalene 91-20-3	96-hr LC50 = 0.91-2.82 mg/l Rainbow trout (static) 96-hr LC50 = 1.99 mg/l Fathead minnow (static)	48-hr LC50 = 1.6 mg/l Daphnia magna	-

**Persistence and degradability** Expected to be inherently biodegradable.

**Bioaccumulation** Has the potential to bioaccumulate.

**Mobility in soil** May partition into air, soil and water.

**Other adverse effects** No information available.

## 13. DISPOSAL CONSIDERATIONS

**Description of waste residues** This material may be a flammable liquid waste.

**Safe handling of wastes** Handle in accordance with applicable local, state, and federal regulations. Use personal protection measures as required. Use appropriate grounding and bonding practices. Use only non-sparking tools. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. No smoking.

**Disposal of wastes / methods of disposal** The user is responsible for determining if any discarded material is a hazardous waste (40 CFR 262.11). Dispose of in accordance with federal, state and local regulations.

**Contaminated packaging disposal** Empty containers should be completely drained and then discarded or recycled, if possible. Do not cut, drill, grind or weld on empty containers since explosive residues may be present. Dispose of in accordance with federal, state and local regulations.

## 14. TRANSPORT INFORMATION

### DOT

UN/Identification No: UN 1203  
 UN Proper Shipping Name: Gasoline  
 Transport Hazard Class(es): 3  
 Packing Group: II

### SCT

UN/Identification No: UN 1203  
 UN Proper Shipping Name: Gasoline  
 Transport Hazard Class(es): 3  
 Packaging group: II

### IATA

UN/Identification No: UN 1203  
 UN Proper Shipping Name: Gasoline  
 Transport Hazard Class(es): 3  
 Packing Group: II  
 ERG code: 3H

### IMDG

UN/Identification No: UN 1203  
 UN Proper Shipping Name: Gasoline  
 Transport Hazard Class(es): 3  
 Packing Group: II  
 EmS No: F-E, S-E  
 Marine Pollutant: Yes

## 15. REGULATORY INFORMATION

### Regulatory Information

**US TSCA Chemical Inventory** This product and/or its components are listed on the TSCA Chemical Inventory or are exempt.

### Pollutant Emission and Transfer Registry (RETC)

Name	Threshold Quantity
Toluene 108-88-3	1000 kg/yr 5000 kg/yr
Xylene (mixed isomers) 1330-20-7	1000 kg/yr 5000 kg/yr
Benzene 71-43-2	500 kg/yr 2500 kg/yr
Cumene 98-82-8	1000 kg/yr 5000 kg/yr

**Persistent Organic Pollutants:** Not applicable.  
**Export Notification Requirements:** Not applicable.  
**Ozone Depleting Substances:** Not applicable.

## 16. OTHER INFORMATION

Prepared by Toxicology & Product Safety

**Abbreviations used in the document**

CAS: Chemical Abstracts Service; ACGIH: American Conference of Governmental Industrial Hygienists; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; OSHA: Occupational Safety and Health Administration; TLV: Threshold Limit Value; TWA: Time Weighted Average Limit; STEL: Short Term Exposure Limit; LD(50): Mean Lethal Dose (50); LC(50): Mean Lethal Concentration (50); DOT: Department of Transportation; IATA: International Air Transport Association; IMDG: International Maritime Dangerous Goods Code.

**Revision Notes**

Revision date 03/23/2021

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is intended as guidance for safe handling, use, processing, storage, transportation, accidental release, clean-up and disposal and is not considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.