



MATERIAL SAFETY DATA SHEET

Gasoline

MSDS: 934
REVISION: 08/20/2012

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Gasoline

SYNONYMS: Regular, Premium, Mid-Grade, Subgrade, Gasohol

PRODUCT CODE:

E10 Shell Premium Gasohol (11121031)	Premium 92 Unleaded (11111020)
E10 Shell Midgrade Gasohol (11321031)	Mid Unleaded (11311020)
E10 Shell Regular Gasohol (11221031)	Unleaded Regular (11211020)
E10 Premium Gasohol (13111131)	Unleaded, Premium 91 (1121020)
E10 Midgrade Gasohol (13311131)	Unleaded, Midgrade (11311020)
E10 Regular Gasohol (13211131)	Unleaded Subgrade (11221020)
	Subgrade 90 (11121031)
	Subgrade 86 (11321031)
	Subgrade 84 (11221031)

This Material Safety Data Sheet applies to the listed products and synonym descriptions for Hazard Communication purposes only. Technical specifications vary greatly depending on the product and are not reflected in this document. Consult specification sheets for technical information. This product contains ingredients that are considered to be hazardous as defined by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

IMPORTANT: Read this MSDS before handling or disposing of this product. Pass this information on to employees, customers and product users.

MANUFACTURER: U.S. Oil & Refining Co.
ADDRESS: 3001 Marshall Avenue
Tacoma, WA 98421

EMERGENCY: 253-383-1651
FAX: 253-272-2495
CHEMTREC: 800-424-9300
NATIONAL RESPONSE: 800-424-8802

CHEMICAL FAMILY: Motor Fuels

PREPARED BY: U.S. Oil & Refining Co.

CAS #: 8006-61-9

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Gasoline is a complex blend of hydrocarbons derived from various refinery streams. It contained primarily paraffinic, olefinic, naphthenic, and aromatic hydrocarbons. Gasoline may also contain up to 2.0% benzene and various gasoline additives.

NAME	CAS NUMBER	CONCENTRATION %
Gasoline	8006-61-9	100%
Ethanol	64-17-5	0 – 10%
Toluene	108-88-3	0 – 10%
Benzene	71-43-2	0 – 2%
Cyclohexane	110-82-7	0 – 1%
Ethylbenzene	100-41-4	0 – 3%
Naphthalene	91-20-3	0 – 1%
N-Hexane	110-54-3	0 – 5%
1,2,4 – Trimethylbenzene	95-63-6	0 – 8%
Xylenes	1330-20-7	0 – 10%
Cumene	98-82-8	0 – 0.5%

SECTION 3: HAZARDS IDENTIFICATION

Danger! This product is a highly flammable liquid and vapor. This product contains petroleum hydrocarbons that can pose health risks. Avoid liquid, mist and vapor contact. Harmful or fatal if swallowed. Aspiration hazard can enter lungs and cause damage. May cause irritation or be harmful if inhaled or absorbed through the skin. Avoid prolonged or repeated skin contact.

PHYSICAL STATE: Clear, Bright Liquid/Vapor

ROUTES OF ENTRY: Dermal Contact, Eye Contact, Inhalation, Ingestion

POTENTIAL HEALTH EFFECTS:

EYES: May cause eye irritation, stinging, watering, redness and swelling.

SKIN: Prolonged or repeated skin contact tends to remove skin oils, possibly leading to irritation and dermatitis. It is likely that some components can enter the body by passing through the skin and may cause similar effects as inhaling or ingesting this product.

INGESTION: May irritate the mouth, throat and stomach. This material may cause nausea, vomiting, dizziness, drowsiness, diarrhea, and other central nervous system effects. **DO NOT INDUCE VOMITING.** Aspiration into the lungs can cause chemical pneumonitis.

INHALATION: May cause headache, nausea, blurred vision, and other central nervous system effects. Extremely high concentrations may cause dizziness, loss of consciousness and death.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: This product may contain up to 2.0 weight percent benzene. Benzene can cause anemia, and other blood diseases, including leukemia. Benzene has been classified as a human carcinogen by the EPA, OSHA and IARC. Benzene is also considered a mutagen.

The presence of n-hexane in this product represents a distinct hazard of producing peripheral polyneuropathy, a progressive disorder of the nervous

system, which with sufficiently high exposure has the potential of becoming irreversible. Adverse effects include numbness, tingling, pain and loss of muscle control.

Disorders associated with skin, liver, respiratory system, and central nervous system may be aggravated by significant exposure to this product.

**OVER-EXPOSURE
SIGNS/SYMPTOMS:**

Nasal and respiratory tract irritation, central nervous system effects including excitation, euphoria, dizziness, drowsiness, delirium, nausea, headache, seizures, or sudden death could occur as a result of long term and/or high concentration exposure to vapors. May also cause anemia and irregular heart rhythm.

See toxicological information (section 11)

SECTION 4: FIRST AID MEASURES

EYES: Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Seek medical advice if pain or redness continues.

SKIN: In case of contact, immediately flush skin with large amounts of water for at least 15 minutes. Remove contaminated clothing promptly and launder before reuse. Contaminated leather goods should be discarded. Wash exposed area thoroughly with soap and water. If irritation persists or symptoms described in the MSDS develop, seek medical attention.

INGESTION: This material may cause nausea, vomiting, diarrhea and restlessness. **DO NOT INDUCE VOMITING.** Aspiration into the lungs presents a significant chemical pneumonitis hazard. Obtain medical attention promptly. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

INHALATION: If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: In case of ingestion, gastric lavage with activated charcoal can be used promptly to prevent absorption. Individuals intoxicated by the material should be hospitalized immediately, with acute and continuing attention to neurological and cardiopulmonary function. Positive pressure ventilation may be necessary. Persons on disulfiram (Antabuse®) therapy should be aware that the ethyl alcohol in this product is hazardous to them just as is alcohol from any source. Disulfiram reactions (vomiting, headache and even collapse) may follow ingestion of small amounts of alcohol and have also been described from skin contact. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABILITY OF THE PRODUCT:	Flammable
Flammable limits in air (% by volume)	LOWER: Approximately 1.3 UPPER: Approximately 8.2
FLASH POINT:	Approximately -43°C (-45.4°F) (ASTM D-56)
AUTOIGNITION TEMPERATURE:	Approximately 276.6°C (530°F)
PRODUCTS OF COMBUSTION:	These products are carbon oxides (CO, CO ₂), water vapor, smoke, fumes, unburned hydrocarbons and other products of incomplete combustion.
FIRE HAZARDS IN THE PRESENCE OF VARIOUS SUBSTANCES:	Extremely 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. Vapors are heavier than air, and can travel long distance along the ground before reaching a point of ignition and flashing back.
EXPLOSION HAZARDS IN THE PRESENCE OF VARIOUS SUBSTANCES:	Explosive in the presence of open flames, sparks, heat and static discharge. Vapors may create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers.
FIRE-FIGHTING MEDIA AND INSTRUCTIONS:	Flammable liquid and vapor. Use dry chemical, foam, or carbon dioxide to extinguish the fire. Consult foam manufacturer for appropriate media, application rates and water/foam ratio. Water spray may be used to disperse vapors and/or flush spills away from source of ignition. Water spray can be used to cool tanks and exposures. Vapor suppressing foam may be used to suppress vapors. Vapor may cause flash fire. Vapors are heavier than air and may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flashback. Runoff to sewer may create fire or explosion hazard.
SPECIAL FIRE FIGHTING EQUIPMENT:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
UNUSUAL FIRE & EXPLOSION HAZARDS:	This material will release flammable vapors which if exposed to a source of ignition can burn or be explosive in confined spaces. Keep away from heat and open flame.
FIRE FIGHTING ADDITIONAL ADVICE:	Keep adjacent containers cool by spraying with water. If possible remove containers from the danger zone. If the fire cannot be extinguished the only course of action is to evacuate immediately. Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways.

SECTION 6: ACCIDENTAL RELEASE MEASURES

**PERSONAL
PRECAUTIONS:**

Immediately contact emergency personnel. An accidental release will cause an immediate fire or explosion hazard. Eliminate all ignition sources and stop spill/release if it can be done without risk. Isolate hazard area and restrict entry to emergency crew. Stay upwind and away from spill and notify personnel downwind. Keep unauthorized personnel out. Wear appropriate protective equipment including respiratory protection as conditions warrant. (Section 8). Do not enter or stay in area unless monitoring indicates that it is safe to do so.

Do not touch or walk through spilled material. Tanks, vessels or other confined spaces which have contained material should be freed of vapors before entering. The container should be checked to ensure a safe atmosphere before entry. Empty containers may contain toxic, flammable, or explosive residues or vapors. Do not cut, grind, drill, weld or reuse empty containers that contained this material. Do not transfer this material to another container unless the container receiving the material is labeled with proper DOT shipping name, hazard class and other information that describes the material and its hazards.

**ENVIRONMENTAL
PRECAUTIONS:**

Contain spill in smallest possible area. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. If facility or operation has an "oil or hazardous substance contingency plan", activate its procedures.

Flammable. Review Fire Fighting Measures Section before proceeding with clean up.

Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 800-424-8802. For highway or railway spills, contact Chemtrec at 800-424-9300. Additional reporting may be required to state and local agencies.

**METHODS FOR CLEANING
UP:**

Contain spilled material to ensure runoff does not reach a drainage ditch or waterway. Do not flush away residues with water. For small spills, use absorbent pads or add absorbent (soil may be used in the absence of other suitable materials) and use a nonsparking or explosion-proof means to transfer material to a sealable, appropriate container for disposal. For large spills, dike spilled material or otherwise contain to facilitate removal with appropriate spill response personnel and equipment. Place spilled material in an appropriate container for disposal and dispose in accordance with Federal, State and Local regulations. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.

SECTION 7: HANDLING & STORAGE

HANDLING:

Highly flammable liquid and vapor. Use only as a motor fuel. Keep containers closed except when ready to use. Open container slowly to relieve any pressure. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

Prior to refueling, stop all engines and auxiliary equipment. Turn off all electronic equipment including cellular phones. Do not leave nozzle unattended during filling or refueling a vehicle.

Do not ingest. Do not get in eyes, on skin or on clothing. Use only with adequate ventilation. Avoid breathing vapor or mist. Keep away from heat, sparks and flame. Wash thoroughly after handling. In case of fire, use foam, dry chemical or carbon dioxide as described in the Fire Fighting Measures Section of the MSDS. "Empty" container contains residue (liquid and/or vapor) and may explode in heat of a fire. Do not pressurize, cut, weld, braze, solder, or drill on or near this container. Use good personal hygiene practices. After handling this material, wash hands before eating, drinking, or using toilet facilities. Keep out of reach of children. Failure to use caution may cause serious injury or illness. To prevent ingestion and exposure - Do not siphon by mouth to transfer material between containers. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames.

STORAGE:

Store in a segregated and approved area. Only store this product in approved and properly labeled gasoline containers and keep containers tightly closed and sealed until read to use. Post area "No Smoking or Open Flame". Avoid all possible sources of ignition (spark or flame). Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes. Keep container in a cool, dry, well-ventilated area. Containers should be able to withstand pressures expected from warming or cooling in storage. Drums must be equipped with self closing valves, pressure vacuum bungs, and flame arresters. Protect containers against physical damage. Post area "No smoking or Open Flame". "Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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

PERSONAL PROTECTION:

SKIN: 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 material. Flame Retardant (FR) Clothing may be recommended.

RESPIRATORY: Use a properly fitted, air-purifying or air-fed 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 material and the safe working limits of the selected respirator.

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

EYE: Eye protection (chemical-type goggles and/or face shield) should be worn whenever there is a likelihood of splashing or spraying liquid. Contact lenses should not be worn. Eye wash water should be provided.

OTHER: Use good personal hygiene practices. In case of skin contact, wash with mild soap and water or a waterless hand cleaner. Immediately remove soiled clothing and wash thoroughly before reuse. Discard oil-soaked leather goods.

PERSONAL PROTECTIVE EQUIPMENT IN CASE OF A LARGE SPILL: Splash goggles. Full suit. Vapor respirator. Boots. Gloves. Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the material. Suggested protective clothing might not be adequate. Consult a specialist before handling this material.

Established Occupational Exposure Limits

SUBSTANCE	VALUE	TIME/TYPE	SOURCE
Gasoline	300 PPM	TWA	ACGIH
Gasoline	500 PPM	STEL	ACGIH
Benzene	0.5 PPM	TWA – Skin	ACGIH
Benzene	2.5 PPM	STEL - Skin	ACGIH
Benzene	1 PPM	TWA	OSHA
Benzene	5 PPM	STEL	OSHA
Benzene	500 PPM	IDLH	NIOSH
Cyclohexane	300 PPM	TWA	OSHA/ACGIH
Ethylbenzene	100 PPM	TWA	OSHA/ACGIH
Ethylbenzene	125 PPM	STEL	ACGIH
Ethylbenzene	800 PPM	IDLH	NIOSH
Trimethylbenzenes	25 PPM	TWA	ACGIH
Naphthalene	10 ppm	TWA	OSHA/ACGIH
Naphthalene	15 ppm	STEL	OSHA/ACGIH
N-Hexane	50 PPM	TWA – Skin	ACGIH
N-Hexane	500 PPM	TWA	OSHA
N-Hexane	1,100 PPM	IDLH	NIOSH
Ethanol	1,000 PPM	TWA	ACGIH
Toluene	50 PPM	TWA – Skin	ACGIH
Toluene	100 PPM	TWA	NIOSH
Toluene	150 PPM	STEL	NIOSH
Toluene	200 PPM	TWA	OSHA
Toluene	300 PPM	CEIL	OSHA
Toluene	500 PPM	IDLH	OSHA
Toluene	500 PPM	10 min peak/8 hr shift	OSHA
Xylenes	100 PPM	TWA	OSHA/ACGIH
Xylenes	150 PPM	STEL	ACGIH
Xylenes	900 PPM	IDLH	NIOSH

Consult local authorities for acceptable exposure limits.

SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
COLOR:	Transparent, clear to amber, or red
ODOR:	Petroleum hydrocarbon, Gasoline odor
BOILING POINT:	37.7-204.4°C (100-400°F)
SPECIFIC GRAVITY:	0.72-0.83 (Water=1)
VISCOSITY:	Less Than 1 CST
VAPOR PRESSURE:	Approximately 7-15 Reid Vapor Pressure (@ 100 oF)
VAPOR DENSITY:	Approximately 3.5 (Air=1)
VOLATILITY:	Appreciable
MATERIALS TO AVOID:	Strong oxidizers or strong acids
HAZARDOUS DECOMPOSITION PRODUCTS:	These products are carbon oxides (CO, CO ₂), nitrogen oxides (NO _x), particulate matter, and VOC's.

SECTION 10: STABILITY & REACTIVITY

STABILITY & REACTIVITY:	The material is stable. Stable under normal ambient and anticipated conditions of storage and handling. Extremely flammable liquid and vapor. Vapor can cause flash fire.
INCOMPATIBILITY WITH VARIOUS SUBSTANCES:	Reactive with strong oxidizers
HAZARDOUS POLYMERIZATION:	Not expected to occur.
CONDITIONS TO AVOID (STABILITY):	Heat, sparks, open flame, and build up of static electricity. Avoid high temperatures and all sources of ignition. Keep away from strong oxidizing agents.

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICITY DATA

CARCINOGENICITY: Benzene has been identified by the EPA and IARC as a human carcinogen. Gasoline mixtures are listed as a possible carcinogen by IARC and NIOSH. Risk of cancer depends on duration and level of exposure.

TARGET ORGANS: Potential gasoline components which have demonstrated developmental and or target organ issues include: n-hexane, toluene, xylenes, benzene, ethyl benzene, trimethylbenzene, cyclohexane, and naphthalene.

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:	This product is potentially toxic to aquatic organisms and should be kept out of sewage and drainage systems and all bodies of water. On release to the environment the lighter, product components will readily evaporate, but the remainder may become dispersed in the water column or adsorbed to soil or sediment. Primary components of this product are considered biodegradable in aerobic conditions.
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SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:

The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Due to the varying nature of the material, any generated wastes will require an adequate characterization of physical and chemical properties to ensure proper disposal. Disposal of this material, solutions and any by-products should at all times comply with all applicable federal, state, and local environmental regulations.

Consult your state and local authorities.

SECTION 14: TRANSPORT INFORMATION

REGULATORY INFORMATION	UN NUMBER	EMERGENCY RESPONSE GUIDEBOOK	PROPER SHIPPING NAME	CLASS	PACKING GROUP
DOT Classification	UN1203	Guide 128	Gasoline, UN1203	3	II
International Maritime Dangerous Goods (IMDG)	UN1203	Guide 128	Gasoline, UN1203	3	II
International Civil Aviation Org./International Air Transport Assoc (ICAO, IATA)	UN1203	Guide 128	Gasoline, UN1203	3	II

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

EPA SARA Sections 302, 304, & 313 and CERCLA:

This material contains the following chemicals subject to the reporting requirements of SARA 302, SARA 304, SARA 313, CERCLA and 40 CFR 372:

Chemical Name	CAS Number	Material Concentration	CERCLA/SARA Section 302 TPQ (lbs.)	CERCLA/SARA Section 304 RQ (lbs.)
Cumene	98-82-8	<0.5		5,000
Benzene	71-43-2	<2.0		10
Cyclohexane	110-82-7	<1		1,000
Ethylbenzene	100-41-4	<2		1,000
1,2,4 TriMethylbenzene	95-63-6	<8		
Naphthalene	91-20-3	<1		100
N-Hexane	110-54-3	<5		5,000
Toluene	108-88-3	<10		1,000
Xylenes	1330-20-7	<10		100

Carcinogen Identification:

This mixture may contain chemicals that have been identified as a carcinogen by NTP, IARC, or OSHA.

EPA SARA 311/312 TITLE III HAZARD CATEGORIES:

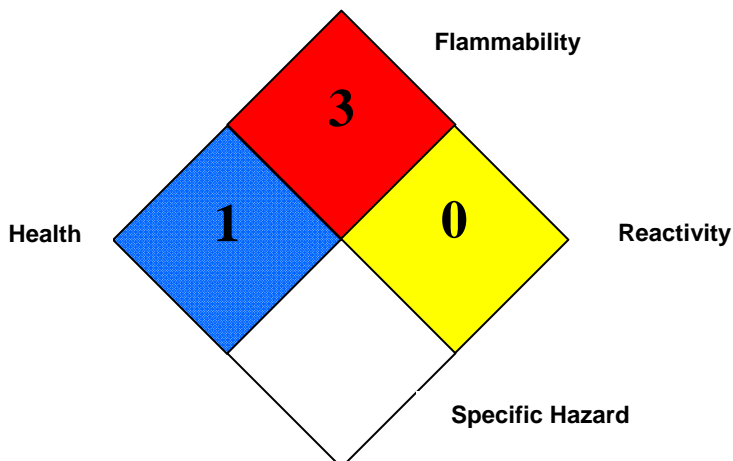
Acute Health Hazard:	Yes
Chronic Health Hazard:	Yes
Fire Hazard:	Yes
Pressure Hazard:	No
Reactive Hazard:	No

SECTION 16: OTHER INFORMATION

HAZARDOUS MATERIAL
INFORMATION SYSTEM
(USA):

HMIS III		
HEALTH	*	2
FLAMMABILITY		3
PHYSICAL HAZARD		0
PERSONAL PROTECTION		

NATIONAL FIRE
PROTECTION
ASSOCIATION (USA):



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