

# MSDS **Material Safety Data Sheet**

Holly Refining & Marketing Co - Woods Cross



Gasoline (Oxy Fuel)

MSDS Number: 903250

Revision Date: 12/18/2007

Page 1 of 10

## 1 PRODUCT AND COMPANY IDENTIFICATION

### Manufacturer

Holly Refining & Marketing Company - Woods Cross  
393 South 800 West

Woods Cross, Utah 84087

Contact: Health, Environmental & Safety Representative  
Telephone Number: (801) 299-6600  
FAX Number: (801) 299-6609  
E-Mail:  
Web

Product Name: Gasoline (Oxy Fuel)  
Revision Date: 12/18/2007  
Version: 1  
MSDS Number: 903250  
Common Name: Unleaded gasoline  
Chemical Family: Hydrocarbon mixture  
Synonyms: Gasoline; Unleaded Regular  
Product Use: Motor Fuel

## EMERGENCY OVERVIEW

### 24 Hour Emergency Telephone Numbers:

Spill, Leak, Fire or Accident  
CHEMTREC: (800)424-9300  
California Poison Control System: (800) 356-3129

### Health Hazards/Precautionary Measures:

May be harmful or fatal if swallowed. Aspiration hazard. Possible cancer hazard based on animal data. Vapor harmful. Causes skin irritation. Use ventilation adequate to keep exposure below recommended limits, if any. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards/Precautionary Measures: Extremely flammable liquid and vapor. Vapor can cause flash fire. Keep away from heat, sparks, flames, static electricity or other sources of ignition.

Physical form: Liquid  
Odor: Gasoline  
Appearance: Clear to amber

NFPA Hazard Class:	HMIS Hazard Class
Health: 1 (Slight)	Health: 2*(Moderate)
Flammability: 3 (High)	Flammability: 3 (High)
Reactivity: 0 (Least)	Physical Hazard: 0 (Least)

\*Indicates possible chronic health effects.



## Gasoline (Oxy Fuel)

MSDS Number: 903250

Revision Date: 12/18/2007

Page 2 of 10

### 2 COMPOSITION/INFORMATION ON INGREDIENTS

#### Ingredients:

Cas #	Chemical Name	Perc.
8006619	Gasoline	88-100%
1330207	Xylenes-	1-14%
108883	Toluene	1-9%
95636	1,2,4-Trimethylbenzene	1-5%
71432	Benzene	.4-5%
100414	Ethyl benzene	1-5%
110543	n-Hexane	0-4%
110827	Cyclohexane	0-2%
64175	Ethanol	1-10%

### 3 HAZARDS IDENTIFICATION

#### Route of Entry:

Target Organs: Inadequate evidence available for this material.

Inhalation: Low to moderate degree of toxicity by inhalation.

Skin Contact: Skin irritant. Contact may cause redness, itching, burning and skin damage. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin, leading to dermatitis. Not acutely toxic by skin absorption, but prolonged or repeated skin contact may be harmful.

Eye Contact: Contact may cause mild eye irritation including stinging, watering and redness

Ingestion: Low degree of toxicity by ingestion. ASPIRATION HAZARD - This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

### 4 FIRST AID MEASURES

Inhalation: If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Skin Contact: Remove contaminated shoes and clothing, and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek medical attention.

Eye Contact: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

Note To Physicians: Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents. The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.



## 5 FIRE FIGHTING MEASURES

Flash Point: -49 °F/-45 °C  
Autoignition Temperature: 833 °F/444 °C  
LEL: 1.4%  
UEL: 7.6%  
Flammability Classification: Flammable Liquid

SEE BELOW

### Unusual Fire & Explosion Hazards:

This material is extremely flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

**Extinguishing Media:** Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

**Fire Fighting Instructions:** For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

## 6 ACCIDENTAL RELEASE MEASURES

Extremely flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended.

Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate absorbent material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).



## 7 HANDLING AND STORAGE

**Handling Precautions:** Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

"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 a 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.

**Storage Requirements:** Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

**Portable Containers:**

Static electricity may ignite gasoline vapors when filling portable containers. To avoid static buildup do not use a nozzle lock open device. Use only approved containers for the storage of gasoline. Place the container on the ground before filling. Keep the nozzle in contact with the container during filling. Do not fill any portable container in or on a vehicle or marine craft.



## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls:** If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional engineering controls may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

**Protective Equipment:** **Respiratory:**  
A NIOSH certified air purifying respirator with an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a NIOSH approved self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode if there is potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

**Skin:**  
The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation, and skin damage. Examples of approved materials are nitrile, or Viton® (see glove manufacturer literature for information on permeability). Depending on conditions of use, apron and/or arm covers may be necessary.

**Eye/Face:**  
Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

**Other Protective Equipment:**  
A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

Suggestions for the use of specific protective materials are based on readily available published data. Users should check with specific manufacturers to confirm the performance of their products.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear to amber	Boiling Point:	80-440 °F/26-227 °C
Physical State:	Liquid	Freezing/Melting Pt.:	No data
Odor:	Gasoline	Solubility:	Negligable
pH:	N/A	Spec Grav./Density:	0.72-0.75 @ 60°F
Vapor Pressure:	350-760 mm Hg @ 100 °F		
Vapor Density:	>1		
Bulk Density:	6.17 lbs/gal		
Percent Volatile:	100%		



## Gasoline (Oxy Fuel)

MSDS Number: 903250

Revision Date: 12/18/2007

Page 6 of 10

### 10 STABILITY AND REACTIVITY

Stability:	Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Extremely flammable liquid and vapor. Vapor can cause flash fire.
Conditions to avoid:	Avoid all possible sources of ignition.
Materials to avoid (incompatibility):	Contact with strong oxidizing agents such as chlorine, dichromates, or permanganates can cause fire or explosion.
Hazardous Decomposition products:	The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of combustion products (eg, oxides of carbon, sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels.
Hazardous Polymerization:	Will not occur.

### 11 TOXICOLOGICAL INFORMATION

Gasoline (CAS# 8006619)

Carcinogenicity:

Two year inhalation studies of wholly vaporized unleaded gasoline produced increased incidences of kidney tumors in male rats and liver tumors in female mice. Follow-up studies suggest that occurrence of the kidney tumors may be linked to alpha-2-u-globulin nephropathy, and most likely unique to the male rat. Epidemiology data collected from a study of more than 18,000 petroleum marketing and distribution workers showed no increased risk of leukemia, multiple myeloma, or kidney cancer from gasoline exposure. Unleaded gasoline has been identified as a possible carcinogen by IARC.

Because solvent extracts of gasoline exhaust particulates caused skin cancer in laboratory animals, IARC has categorized gasoline engine exhaust as a possible human cancer hazard.

Target Organs:

A two year inhalation study of wholly vaporized unleaded gasoline produced nephropathy in male rats, characterized by the accumulation of alpha-2-u-globulin in epithelial cells of the proximal tubules, and necrosis and hyperplasia of surrounding cells. Follow-up studies have demonstrated that these changes are unique to the male rat.

Although prolonged exposure to n-hexane, a component of gasoline, has resulted in adverse male reproductive effects in experimental animal studies, no adverse male reproductive effects were found in studies conducted with gasoline.

Developmental:

No evidence of developmental toxicity was found in pregnant laboratory animals (rats and mice) exposed to up to 9,000 ppm vapor of unleaded gasoline via inhalation.

Xylenes (CAS# 1330-20-7)

Target Organs): A six week inhalation study with xylene produced hearing loss in rats.

Developmental: Both mixed pyrenes and the individual isomers produced limited evidence of developmental toxicity in laboratory animals. Inhalation and oral administration of xylene resulted in decreased fetal weight, increased incidences of delayed ossification, skeletal variations and resummptions.

Toluene (CAS# 108-88-3)

Target Organs: Epidemiology studies suggest that chronic occupational overexposure to toluene may damage color vision. Subchronic and chronic inhalation studies with toluene produced kidney and liver damage, hearing loss and central nervous system (brain) damage in laboratory animals. Intentional misuse by deliberate inhalation of high concentrations of toluene has been shown to cause liver, kidney, and central nervous system damage, including hearing loss and visual disturbances.

Developmental: Exposure to toluene during pregnancy has demonstrated limited evidence of developmental toxicity in

# MSDS *Material Safety Data Sheet*

Holly Refining & Marketing Co - Woods Cross



## Gasoline (Oxy Fuel)

MSDS Number: 903250

Revision Date: 12/18/2007

Page 7 of 10

laboratory animals. The effects seen include decreased fetal body weight and increased skeletal variations in both inhalation and oral studies.

### Benzene (CAS# 71-43-2)

**Carcinogenicity:** Benzene is an animal carcinogen and is known to produce acute hydrogenous leukemia (a form of cancer) in humans. Benzene has been identified as a human carcinogen by NTP, IARC and OSHA.

**Target Organs:** Prolonged or repeated exposures to benzene vapors has been linked to bone marrow toxicity which can result in blood disorders such as leukopenia, thrombocytopenia, and atlantic anemia. All of these diseases can be fatal.

**Developmental:** Exposure to benzene during pregnancy demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased body weight and increased skeletal variations in rodents. Alterations in hematologists have been observed in the fetuses and offspring of pregnant mice.

**Mutagenicity:** Benzene exposure has resulted in chromosomal aberrations in human lymphocytes and animal bone marrow cells, and DNA damage in mammalian cells if vitro.

### Ethyl Benzene (CAS# 100-41-4)

**Carcinogenicity:** Rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study demonstrated limited evidence of kidney, liver, and lung cancer. Ethyl benzene has been listed as a possible human carcinogen by IARC. Ethyl benzene has not been listed as a carcinogen by NTP, or OSHA.

**Target Organs:** In rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a up year inhalation study there was mild damage to the kidney (tubular hyperplasia), liver (eosinophilio foci, hypertrophy, necrosis), thyroid (hyperplasia) and pituitary (hyperplasia).

### n-Hexane (CAS# 110-54-3)

**Target Organs:** Excessive exposure to n-hexane can result in peripheral neuropathies. The initial symptoms are symmetrical sensory numbness and parenthesis of distal portions of the extremities. Motor weakness is typically observed in muscles of the toes and fingers but may also involve muscles of the arms, thighs and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of exposure. The neurotoxic properties of n-hexane are potentiated by exposure to methyl ethyl ketone and methyl isobutyl ketone.

Prolonged exposure to high concentrations of n-hexane (>1,000 ppm) has resulted in decreased sperm count and degenerative changes in the testes of rats but not those of mice.

### Acute Data:

#### Gasoline:

Dermal LD50>5 ml/kg (Rabbit)

LC50> 4500 ppm (Rat)

Oral LD50= 18.75 ml/kg (Rat)

#### 1, 2, 4-Trimethyl Benzene:

Dermal LD50 = No data available

LC50 = 18 gm/m<sup>3</sup>/4hr (Rat)

Oral LD50 = 3-6 g/kg (Rat)

#### Benzene:

Dermal LD50> 9400 mg/kg (Rabbit), (Guinea Pig)

LC50= 9980 ppm (Mouse); 10000 ppm/7hr. (Rat)

Oral LD50= 4700 mg/kg (Mouse); 930 mg/kg (Rat); 5700 mg/kg (Mammal)

#### Cyclohexane:

Dermal LD50=>2g/kg (Rabbit)



## Gasoline (Oxy Fuel)

MSDS Number: 903250

Revision Date: 12/18/2007

Page 8 of 10

LC50> 4,044 ppm (4-hr., Rat)  
Oral LD50> 2g/kg (Rat)

### Ethyl Benzene:

Dermal LD50= 17800 mg/kg (Rabbit)  
LC50=4000 Pam's or.; 13367 ppm (Rat)  
Oral LD50=3500 mg/kg (Rat)

### n-Hexane:

Dermal LD50 = >2,000 mg/kg (Rabbit)  
LC50> ,3 367 ppm (4-hr., Rat)  
Oral LD50>5,000 mg/kg (Rat)

### Toluene:

Dermal LD50 = 14 g/kg (Rabbit)  
LC50 = 8,000 ppm (4-hr., Rat)  
Oral LD50 = 2.5 - 7.9 g/kg (Rat)

### Xylene:

Dermal LD50 >3.16 ml/kg (Rabbit)  
LC50= 5000 Pam's hr. (Rat)  
Oral LD50 = 4300 mg/kg (Rat)

## 12

### ECOLOGICAL INFORMATION

Spilling of gasoline can result in environmental damage.

Gasoline floats on water and evaporates rapidly from water or soil surfaces. However, spilled gasoline may penetrate soil and could contaminate groundwater.

Gasoline is biodegradable but in situations of low oxygen, such as in soil below grade or in groundwater, may persist for many years.

Gasoline does not readily dissolve in water but will be adsorbed to soils. Gasoline in the environment can be toxic to plants and animals.

## 13

### DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of ignitability (D001) and benzene (D018). If the spilled or released material impacts soil, water, or other media, characteristic testing of the contaminated materials may be required prior to their disposal. Further, this material, once it becomes a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

# MSDS Material Safety Data Sheet

Holly Refining & Marketing Co - Woods Cross



Gasoline (Oxy Fuel)

MSDS Number: 903250

Revision Date: 12/18/2007

Page 9 of 10

## 14 TRANSPORT INFORMATION

DOT Shipping Description: Gasoline, 3, UN 1203, II  
Bulk Package Placard/Marking: Flammable/1203  
Non-Bulk Package Label: Flammable  
Packaging References: 49 CFR 173.150, 173.242  
Emergency Response Guide: 128  
Hazardous Substance/RQ: None

## 15 REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories):

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

SARA 313 and 40 CFR 372:

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

CAS Number	Component	Weight %
1330207	Xylenes	1-14%
108883	Toluene	1-9%
95636	1,2,4-Trimethylbenzene	1-5%
71432	Benzene	.4-5%
100414	Ethyl benzene	1-5%
110543	n-Hexane	0-4%
110827	Cyclohexane	0-2%
64175	Ethanol	1-10%

California Proposition 65:

Warning: This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Component	Effect
Benzene	Cancer, Developmental and Reproductive Toxicant
Toluene	Developmental Toxicant
Unleaded Gasoline	Cancer

Carcinogen Identification:

This material has not been identified as a carcinogen by NTP, IARC, or OSHA. See Section 11 for carcinogenicity information of individual components, if any. Diesel exhaust is a probable cancer hazard based on tests in laboratory animals. It has been identified as a carcinogen by IARC.

EPA (CERCLA) Reportable Quantity:

None

WHMIS Class:

B2-Flammable Liquid  
D2B-Materials causing other toxic effects - Toxic Material

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

# MSDS *Material Safety Data Sheet*

Holly Refining & Marketing Co - Woods Cross



Gasoline (Oxy Fuel)

MSDS Number: 903250

Revision Date: 12/18/2007

Page 10 of 10

16

## OTHER INFORMATION

Issue Date: 12/18/2007  
Previous Issue Date: None  
Revised Sections: N/A  
MSDS Number: 903250

### Disclaimer of Expressed and Implied Warranties:

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

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