

Safety Data Sheet


Unlead Gasoline (All Grade)

1. Chemical and Company Identification

Revision: 1.0

Chemical Name: Unlead Gasoline
Other Names: Automotive gasoline and low sulfur unleaded gasoline
Recommended use and restrictions on use: Fuel for automotive and motorcycle gasoline engines.
Manufacturers, Importers or Suppliers: Name: Marketing Business Division, CPC Corporation, Taiwan Address: No. 3, Songren Rd., Xinyi Dist., Taipei City 110207, Taiwan (R.O.C.) Telephone: (02)87898989
Emergency contact: TEL : 1912 ; FAX : (06)2296618 Customer Service Center TEL : (02)87259300 ; FAX : (02)87899053 Industrial Safety and Health Office

2. Hazard identification

Chemical Hazard Classification: Flammable liquids Category 1, Skin corrosion/irritation Category 2, Serious eye damage/eye irritation Category 2, Carcinogenicity Category 2, Specific target organ systemic toxicity (repeated exposure) Category 2, Aspiration hazard Category 1, Hazardous to the aquatic environment - acute aquatic hazard Category 2
Label content:  Symbolic representations: Flame, Exclamatory mark, , Health hazard Signal words: Danger Hazard statements: <ol style="list-style-type: none">1. Extremely flammable liquid and vapor.2. Cause skin irritation.3. Cause eye irritation4. Suspected of causing cancer5. Possibly cause death if swallowed and introduced into the respiratory tract.6. May cause damage to organs through prolonged or repeated exposure.7. Toxic to aquatic life Precautions to hazards: <ol style="list-style-type: none">1. Store in a well-ventilated area.2. Keep away from igniting materials – No open flames.3. If accidents occurred or any concerned, seek medical attention.4. Avoid exposure - follow specific instructions.5. Wear protective goggles or safety glasses (if splashing is likely). Other hazards: –

3. Composition/Information on Ingredients

Pure material:

Chinese and English name: 汽油 (Gasoline)
Synonyms: Motor Spirits , Natural Gasoline , Benzin , Petrol
Chemical Abstract Service No. (CAS No.): 8006-61-9
The hazardous ingredient (% of the content): 100

4. First-aid Measures

The first aid measures for different exposure routes: <ul style="list-style-type: none">● Inhalation: If it is safe to enter the affected area, remove the victim from the exposure area to a place with fresh air. If needed, rescue their breathing with a bag valve resuscitator or similar device. Keep them body warm, have them lie still and rest. Send them to hospital for medical treatment immediately.

<ul style="list-style-type: none"> ● Skin contact: Remove contaminated clothing, jewelry, watches, and shoes immediately. Wash the affected area with soap or a neutral detergent and rinse with plenty of water until no chemical residue (at least 15-20 minutes). Seek medical attention if necessary. ● Eye contact: Move the victim away from the contamination area and rinse eyes with plenty of water for at least 15 minutes, open the upper and lower eyelids and rotate the eye ball slowly till no chemical residue remains. Seek ophthalmologist for further treatment if pain persists. ● Ingestion: Make an urgent call for medical suggestions. Don't make the unconscious victim vomit or drink. When the victim is suffering from vomit, keep his/her head lower than the stern. If he/she has lost his/her consciousness, turn his/her head to one side. If needed, send to hospital for medical treatment.
The most important symptoms and hazardous effects: –
The protection of first-aiders: <ol style="list-style-type: none"> 1. Wear protective clothing (including solvent-proof gloves) to protect against contacting contaminants.. 2. Wear chemical safety goggles.
Notes to physicians: If inhaled, considered to treat the victim with oxygen. If swallowed, perform stomach lavage and use active carbon paste.

5. Fire-fighting Measures

Suitable fire extinguishing media: Dry powder(ABC or BC), carbon dioxide, foam, and water mist. For large fires: Use foam or fine water mist.
Specific hazards may be encountered during fire-fighting: Severe fire hazard. Vapor/air mixture can easily explode if it is above the flash point. Vapor is heavier than air. Vapor or gas can ignite and cause backfires even far from the fire source. Invisible vapor can spread quickly and can be ignited by sources such as welding, electric motors, and switches.
Specific fire-fighting methods: <ol style="list-style-type: none"> 1. Isolate all fire sources in the leakage area. If there is no potential danger, enter the affected area and try to remove the storage containers. Cool the containers in the vicinity of the affected area with water mist to prevent explosion under pressure until extinguishment. When spraying water, stand far away from the storage tank. 2. Fire on goods or in the storage area: Put out the fire with the automatic sprinkling device or water branches and cool the containers with water mist until extinguishment. If impossible to put out the fire in such a way, take the following precautions: Evacuate unnecessary people and isolate the fire locale, do not allow any unauthorized people inside, and allow the fire to burn off. Leave the fire locale immediately when noise made by the safety venting device becomes loud or color of the storage tank changes due to the fire. 3. Fire on a large vessel, train or tank truck: Springing up radius: 800 meters (1/2 mile). Water may be ineffective.
Special equipment for the protection of firefighters: <ol style="list-style-type: none"> 1. The fire fighters must use personal protective equipment and respirators, and extinguish the fire from windward side. 2. Do not enter confined space without proper personal protective equipment or personal self-contained respirator.

6. Accidental release measures

Personal precautions: Avoid heat, flame, spark and other igniting substances.
Environmental precautions: <ol style="list-style-type: none"> 1. If no danger is present, eliminate any flame close to the vapor and shut off the leakage. 2. Use water mist to reduce vapor. 3. Evacuate uninvolved people immediately, isolate the hazardous area and do not allow any people unconcerned to enter. 4. Ensure adequate ventilation before entering confined spaces. 5. Consult the precautions related to exposure control/personal protection, and take further prevention actions including those against air pollution.
Methods for cleaning up:

1. Minor leakage: Absorb the leakage with sand or other non-combustible substances. Collect the oil leakage into a suitable container.
 2. Heavy leakage: Contain with dikes for later disposal.
- If possible, remove the contaminated soil. Heavy leakage shall be disposed according to “the Remedial Institution of Soil and Groundwater Pollution” and the relevant regulations.

7. Handling and storage

- Handling:
1. Vapor can enter the lungs through inhalation; do not let it contact the eyes, skin, or clothing.
 2. Never inhale its vapor, oil mist etc..
 3. As described under “Precautions against Exposure” below, use personal protective equipment or coat, and clean thoroughly after operation. Before re-use, wash the contaminated clothing thoroughly.
 4. Do not place it close to any flame, spark or hot surface, only place it at a well-ventilated place when using or storing this substance.

- Storage:
1. Store separately from any incompatible materials.
 2. No open flames at the storage tank and working place. Never use any device or tool that can generate spark.
 3. When loading into or unloading from a storage tank, do not start the truck power supply, check the electric circuits, perform repairs and maintenance, wash or drive the truck.
 4. Store in a dry and well-ventilated area at room temperature.
 5. Protect the containers against impact or damage, keep them away from inflammables.
 6. Store in approved safety containers.
 7. Store only limited quantities and keep the container closed tight when not in use.
 8. Empty the container which still has hazardous vapor or liquid inside.
 9. Earthing must be made to avoid generation of static electricity.
 10. Handle/dispose it in accordance with the latest version of “Storage and Disposal Regulations for Industrial Wastes and Facility Standard”.
 11. May also consult U.S. OSHA 29 CFR 1910.106.

8. Exposure Controls and Personal Protection

- Engineering control:
- Provide a local ventilation system.
 - Measures against explosion must be taken on all the ventilation devices.
 - Make sure that the recommended exposure limit not be exceeded.

Control parameters:

Hazardous Ingredient	8 hours time weighted average exposure limits (TWA)	Short-term exposure limits (STEL)	Maximum exposure limits (CEILING)	Biological standards
Gasoline	300 ppm (890 mg/m ³)	375 ppm	—	—

- Personal protective equipment:
- Respiratory protection: Use appropriate respiratory protective devices when gasoline concentration exceeds permissible levels.
 - Hand protection: Wear proper chemical-resistant gloves when handling gasoline.
 - Eye protection: Avoid getting gasoline in your eyes. Wear anti-splashing safety goggles if eye contact is possible.
 - Skin and body protection: Wear appropriate protective clothing if skin and body contact is possible.

- Hygiene measures:
1. Check the safety goggles, chemical-resistant gloves and clothing, and respiratory protective devices for any damages.
 2. Remove contaminated clothing promptly after work, wash thoroughly before reuse or discard, and inform laundry personnel of the hazards of the contaminants.
 3. No smoking or eating in the workplace.
 4. Wash hands thoroughly after handling this substance
 5. Keep the workplace clean.

9. Physical and Chemical Properties

Appearance (physical state, color etc.): Transparent liquid.	Odor: Slight gasoline smell.
Odor threshold value: <1ppm	Melting point: -60°C(-76°F)
pH value: Medium	Boiling point/range: 30°C~210 °C(86°F~410°F)
Flammability (solid, gas): /	Flash point: -43°C ~ -38°C(-45 °F ~ -36°F)
Decomposition temperature: –	Test method: Opened cup
Auto-ignition temperature: 280°C~456°C(536°F~853°F)	Explosion limits: 1.2 %~7.6 %
Vapor pressure: 45~60 kPa @ 37.8°C(Tao-Yuan Oil Refinery)	Vapor density (Air=1): 3~5
Density: 0.7573@15°C	Solubility: Water solubility: <0.1% Soluble in anhydrous alcohol, ethers, benzene, chloroform
Octanol / Water partition coefficient (log Kow): 2.13~4.5	Evaporation rate: 10~11 (Butyl acetate = 1)

10. Stability and reactivity

Stability: Stable at ambient temperature and atmospheric pressure.
Possible hazardous reactions under specific condition: No polymerization reaction.
Conditions to avoid: <ol style="list-style-type: none"> 1. Avoid heat, flame, spark and other igniting sources. 2. The container may be subject to breaking or explosion if exposure to heat source. 3. Keep away from water sources and sewages. 4. Harmful gases may accumulate in confined spaces.
Materials to avoid: Avoid contact with strong oxidizers, such as acids, bases, metals, halogens, peroxides, and flammable substances, as reactions can occur easily.
Hazardous decomposition products: Toxic and harmful gases such as carbon oxides.

11. Toxicological information

Routes of exposure: Eye contact, skin contact, inhalation, ingestion.
Symptoms: Headache, nausea, dizziness, drowsiness, temporary corneal epithelial disturbance, corneal congestion, and swelling.
Acute toxicity: <ul style="list-style-type: none"> ● Ingestion: Causes irritation and gastrointestinal burns accompanied by nausea, vomiting, and diarrhea. Initial absorption may cause central nervous system excitation followed by depression. Symptoms include mild excitement, restlessness, nervousness, excitability, convulsions, weakness, blurred vision, headache, dizziness, drowsiness, confusion, unconsciousness, seizures, and coma. Temporary liver damage is possible. ● Inhalation: Exposure to concentrations of 160-270 ppm for several hours can irritate the throat. At 2000 ppm for 30 minutes, mild anesthesia can occur. Other central nervous system depression symptoms include headache, nausea, vomiting, dizziness, drowsiness, facial flushing, blurred vision, slurred speech, difficulty swallowing, unsteady gait, confusion, and euphoria. At higher concentrations, symptoms can escalate to difficulty breathing, pulmonary edema, and bronchopneumonia. Further exposure can cause severe central nervous system depression, including weak respiration and pulse, nervousness, convulsions, excitability, and lack of coordination. Severe poisoning can lead to confusion, unconsciousness, coma, and seizures. Additionally, it can affect the liver, kidneys, spleen, brain, myocardium, and pancreas, potentially leading to death due to respiratory or circulatory failure or ventricular fibrillation. Extremely high concentrations can cause asphyxiation. ● Skin contact: Liquid causes irritation with redness and pain. Prolonged or extensive contact can cause blistering and, in extreme cases, epidermal damage. A 12-year-old child partially immersed in a small pool of gasoline for an hour experienced hypotension, abdominal pain, disseminated intravascular coagulation, temporary hematuria, and elevated serum amylase levels. Autopsy findings included cerebral edema, bilateral lung inflammation, cardiac ventricular enlargement, toxic nephropathy, and fatty infiltration of the liver. ● Eye contact: Concentrations of 270-900 ppm can cause irritation before symptoms like noticeable conjunctival congestion appear. Liquid splashes in the eyes cause pain, severe discomfort, and temporary corneal epithelial disturbance. Corneal congestion and swelling can occur.

Chronic toxicity or long term toxicity:

- Ingestion: No effective data available.
- Inhalation: Except for a few cases, most reports of repeated inhalation exposure come from deliberate gasoline sniffing rather than workplace exposure. Reported symptoms include headache, nausea, fatigue, loss of appetite and weight, pallor, dizziness, insomnia, memory loss, nervousness, confusion, muscle weakness and cramps, peripheral neuropathy, polyneuritis, and neurasthenia. It is unclear if some of these symptoms are caused by leaded gasoline. Liver and kidney damage is also possible.
- Skin contact: Repeated or prolonged contact with liquid can cause irritation, dermatitis, and defatting of the skin, which presents as dryness, cracking, or burns and blisters. Some people may develop allergies, possibly due to additives.
- Eye contact: Repeated or prolonged exposure can cause conjunctivitis and potentially irreversible corneal damage and conjunctival injury over time.

Toxicity data:

(Unleaded gasoline) LD50: 13,600 mg/kg Acute Oral in rabbit

LD50: >5 ml/kg Acute Dermal in rabbit.

Special hazards:

Inhalation can harm the human body, causing respiratory tract irritation, skin and eye irritation, liver damage, central nervous system depression, nerve damage, and cancer risk in humans.

12. Ecological information

Ecotoxicity:

- LC50 (fish): —
- EC50 (aquatic invertebrates): —
- Bioconcentration factor (BCF) : 3.5 ~ 3.9

Persistence and degradability:

The main components are biodegradable. Under anaerobic microbial conditions, they persist. In the air, volatile components rapidly oxidize through photochemical reactions.

Bioaccumulative potential:

Based on log Kow: 2.13~4.5 and water solubility: <0.1%, it indicates high lipid solubility. Once inside an organism, these substances tend to accumulate in fatty tissues and are not easily excreted, leading to significant bioaccumulation.

Mobility in soil:

The hydrocarbon components of gasoline are not easily soluble in water but can adsorb to soil. Volatile components can evaporate from the water or soil surface within a day. Large amounts of gasoline can permeate the soil and potentially contaminate groundwater.

Other adverse effects:

Gasoline is classified as toxic to aquatic organisms. LL/EL50: 1~10 mg/l. (LL/EL50 expressed as the nominal amount of product required to prepare an aqueous test extract). The thin film formed on the water surface can affect oxygen transfer and harm aquatic life.

13. Disposal Considerations

Methods of waste disposal:

1. Place the contaminated chemicals into a discardable container. Discard such a container in accordance with laws and regulations. While removal of such contaminated chemicals, notify the local authority in charge of environmental protection for approval.
2. Refer to the U.S. EPA 40 CFR 262 regulations, harmful hazard code: D001, D018.
3. Dispose in accordance with the latest version of "Waste Clearance Act" and other related environmental protection regulations.
4. If possible, recycle and reuse waste materials

14. Transport information

United Nations number(UN No): UN1203

UN Proper shipping name: Automotive gasoline or gasoline

Transport hazard class(es): Class 3, Flammable Liquids.

Packing group: I

Marine pollutant(Yes/No): NO

Specific transport measures and precautionary conditions: —

15. Regulatory information

Applicable regulations:

1. Regulations for the Occupational Safety and Health Equipments and Measures
2. Regulation of Labelling and Hazard Communication of Hazardous Chemicals
3. Rules of Preventions for Organic Solvent Poisoning.
4. Standards of Permissible Exposure Limits of Airborne Hazardous Substances in Workplace.
5. Road Traffic Safety Regulations
6. Waste Clearance Act
7. Storage and Disposal Regulations for Industrial Wastes and Facility Standard
8. Soil and Groundwater Pollution Remediation Act
9. Establishment Standard and Safety Control Regulation for Manufacturing, Storing, Processing Public Hazardous Substances and Flammable Pressurized Gases Places
10. Marine Pollution Control Act

16. Other information

References	1. Marathon Petroleum Company MSDS ID NO.: 0126MAR019 2. The Agency for Toxic Substances and Disease Registry (ATSDR) 3. Kenya Sheel Ltd. 4. Chevron regular unleaded gasoline 5. OHS 33796、10950、10680、17260、16810、18210、02610 6. Standards of Permissible Exposure Limits of Airborne Hazardous Substances in Workplace 7. OSHA GHS	
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Note	In the provided information, the symbol "—" indicates that there is currently no relevant data available, while the symbol "—" means that the field is not applicable to the substance.	

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