



1. MATERIAL AND COMPANY IDENTIFICATION

Material Name : **Premium Unleaded Petrol**
Other names : Motor Gasoline, Gasoline, Premium Petrol, Premium Motor Spirit, PMS.
Product Use : Fuel for spark ignition engines
Company : **Kenya Petroleum Refineries Ltd,**
PO Box 90401 – 80100,
Mombasa, KENYA.
Emergency Telephone/Fax Numbers : Tel: + 254 - 041- 3433511-19 / 2220967
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2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Concentration
Hydrocarbons mixture C4 - C12: Paraffins, cycloparrafins, aromatic and olefinic hydrocarbons	86290-81-15	95 - 100 %
Dyes	Mixture	0 – 1%
Benzene	71-43-2	0 - 5 %

3. HAZARDS IDENTIFICATION

Appearance and Odor : Light green, with motor spirit odor

Acute
Swallowed – harmful; may cause lung damage if swallowed
Eye- mildly irritating to eyes
Skin – irritating to skin; will cause redness and inflammation
Inhaled – inhalation may cause irritation to the respiratory system. Prolonged exposure to vapors may cause somnolence and narcosis

Chronic
Prolonged and repeated skin contact may cause dermatitis due to deffating effect. Prolonged or repeated exposure may cause cancer.

4. FIRST AID MEASURES

Inhalation : Remove affected person from contaminated area to fresh air. If not breathing, apply artificial respiration and seek urgent medical advice.

Skin Contact : Remove contaminated clothing. Immediately flush skin with



Eye Contact	: large amounts of water for at least 15 minutes , followed with soap and water if available : Flush eye with plenty of water for 20 minutes while holding eyelids open. If irritation occurs, seek medical advice.
Ingestion	: In the unlikely event of ingestion, obtain medical attention immediately. Do not induce vomiting. If vomiting occurs, keep head below hips to prevent aspiration
First aid facilities	Eye wash and safety showers should be available for emergency use
Advise to Doctor	Treat symptomatically

5. FIRE FIGHTING MEASURES

Fire hazards	: Product is highly flammable. Isolate from sources of heat, naked flames, sparks and oxidizing materials. Take precautions against discharges of static electricity. Earth and bond all process equipment including tanks and drums. Ensure ventilation is adequate to prevent build up of explosive atmosphere. Hazardous combustion products include combustion products such as oxides of carbon.
Extinguishing Media	: Use foam, water spray or fog. CO ₂ , dry chemical powder or sand may be used for small fires only. Do not use water in a jet.
Protective Equipment for Firefighters	: Wear full protective clothing and self-contained breathing apparatus when approaching fire in a confined space.
Additional Advice	: Keep adjacent storage tanks, pipelines and fire exposed surfaces cool by spraying with water. Shut off supply if safe to do so and remove sources of re-ignition. Vapor/air mixtures may ignite explosively and flashback along the vapor trail may occur. Contain residual material at affected sites to prevent material from entering sewers, ditches and waterways.

6. ACCIDENTAL RELEASE MEASURES

Protective measures	: Wear appropriate personal protective equipment. Extinguish or remove all sources of ignition and stop leak if safe to do so. Contain residual material at affected sites to prevent material from entering sewers, ditches and waterways. Keep away from heat, naked flames and sparks.
Clean Up Methods	: For large liquid spills, transfer by mechanical means such as vacuum trucks to a salvage tank. Do not flush away residues with water; retain as contaminated waste. Allow residue to



Additional Advice : evaporate or soak up with appropriate absorbent material, sand or earth. Remove contaminated soil and dispose safely. Maritime spillages should be dealt with using Shipboard Oil Pollution Emergency Plan (SOPEP), as required by MARPOL Annex1 Regulation 26.

7. HANDLING AND STORAGE

General Precautions : Avoid breathing vapors or contact with material. Only use in well ventilated areas. Wash thoroughly after handling. Turn off all battery operated portable electronic devices (cellular phones and pagers).

Handling : For guidance on selection of personal protective equipment (PPE), see chapter 8 of the MSDS. When using, do not eat or drink. Remove ignition sources, oxidising agents and food stuffs. Avoid sparks. Never siphon by mouth. The vapour is heavier than air, spreads along the ground and distant ignition is possible.

Storage : Keep containers closed when not in use. Drums should be packed to a maximum of 3 meters high. Tanks must be specifically designed for use with the product. Bulk storage tanks should be diked (bunded), away from ignition sources and other sources of heat.

Product Transfer : Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge. Do not use compressed air for filling, discharging or handling. Wait 2 minutes after tank filling (for road tanker vehicles) before opening hatches or manholes. Wait 30 minutes after tank filling (for large storage tanks) before opening hatches or manholes.

Recommended Materials : For containers, or container linings use mild steel, stainless steel. Examples of suitable material are: high density polyethylene (HDPE), polypropylene (PP) which has been specifically tested for compatibility with this material.

Container Advice : Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers. Gasoline containers must not be used for storage of other products.



8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits (OELs)

Material	Source	Type	ppm	mg/m3	Notation
Gasoline	ACGIH	TWA	300 ppm		
Gasoline	ACGIH	STEL	500 ppm		
Benzene	ACGIH	TWA	0.5 ppm		
Benzene	ACGIH	STEL	2.5 ppm		
Benzene	ACGIH	Notation			Skin, A1, BEI

- Exposure Controls** : Use sealed systems as far as possible. Where vapors are generated, especially in enclosed area, and natural ventilation is inadequate, provide adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits. Local exhaust ventilation recommended. Eye washes and showers for emergency use.
- Protective Clothing** : Chemical resistant gloves/gauntlets, boots, and apron. For spillage clean up use chemical resistant knee length boots. Where risk of splashing or in spillage clean up, use chemical resistant one-piece overall with integral hood, of PVC.
- Respiratory Protection** : Where air-filtering respirators are unsuitable (e.g., airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. Where respiratory protective equipment is required, use a full-face mask. If air-filtering respirators are suitable for conditions of use, select a filter suitable for combined particulate/organic gases and vapours [boiling point <65 °C (149 °F)]
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374,) made from the following materials may provide suitable chemical protection: Neoprene rubber. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, and dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.
- Eye Protection** : Chemical splash goggles (chemical mono goggles).
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with the OEL and adequacy of exposure controls.

9. PHYSICAL AND CHEMICAL PROPERTIES



Appearance	: Green liquid with motor spirit odour
Flash point	: < - 40 °C
Boiling point	: IBP : 25 °C; FBP : 205 °C
Vapour pressure	: 35 - 90 (Reid) kPa @ 37.8 °C
Specific gravity (Water =1)	: 0.73 – 0.75 @ 20 °C
Water solubility	: Negligible.
Flammability limits	: LEL : 1.0 % v/v; UEL : 8.0 % v/v
Volatile component	: 100 %
Auto ignition temperature	: > 250 °C Approx
Vapour density (air =1)	: > 3 @ 15 °C

10. STABILITY AND REACTIVITY

Stability	: Stable under normal conditions of use.
Conditions to Avoid	: Heat, flames, and sparks.
Materials to Avoid	: Strong oxidizing agents.
Hazardous Decomposition Products	: Hazardous decomposition products are not expected to form during normal storage. Thermal decomposition is highly dependant on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

11. TOXICOLOGICAL INFORMATION

Basis for Assessment	: Information given is based on similar products, and/or components.
Acute Oral Toxicity	: Low toxicity: LD50 > 2000 mg/kg, Rat. Aspiration into lungs when swallowed or vomited may cause chemical pneumonitis, which can be fatal.
Acute Dermal Toxicity	Low toxicity: LD50 > 2000 mg/kg, Rabbit
Acute Inhalation Toxicity	LC50 > 20 mg/l, 1.00 hr, Rat. High toxicity may cause central nervous system depression resulting in headaches, dizziness and nausea, continued inhalation may result in unconsciousness and/or death.
Skin Irritation	Irritating to skin
Eye Irritation	Moderately irritating to the eyes
Respiratory Irritation	Based on human experience, may cause temporary burning sensation to nose , throat and lungs
Sensitization	Not a skin sensitiser
Repeated Dose Toxicity	: Blood forming organs: repeated exposure affect the bone



	marrow (benzene)
Mutagenicity	May cause heritable genetic damage (benzene). Mutagenicity studies on gasoline and gasoline blending streams have shown predominantly negative results
Carcinogenicity	Known human carcinogen (benzene). May cause leukemia (AML – acute myelogenous leukemia) (benzene)
Reproductive and Developmental Toxicity	Causes foetotoxicity at doses which are maternally toxic (toluene)
Additional Information	: Exposure to very high concentrations of similar material has been associated with irregular heart rhythms and cardiac arrest.

12. ECOLOGICAL INFORMATION

Mobility	: Floats in water, evaporates within a day from water or soil surfaces. Large volumes may penetrate soil and could contaminate ground water. Contains volatile constituents.
Persistence/degradability	: Persists under anaerobic conditions. Major constituents are inherently biodegradable. The volatile constituents will oxidize rapidly by photochemical reactions in the air.
Bioaccumulation	: Contains constituents with potential to bioaccumulate.
Other adverse effects	: Films formed on water may affect oxygen transfer and damage organisms.

13. DISPOSAL CONSIDERATIONS

Material Disposal	: Recover or recycle if possible. Contain spill with sand or earth or absorb with absorbent material. Place used absorbent in suitable sealed containers for disposal.
Local Legislation	: Disposal in Kenya should be in accordance with the <i>Environmental Management and Coordination (Waste Management) Regulations, 2006</i> .

14. TRANSPORT INFORMATION

Identification number	UN 1203
Proper shipping name	Gasoline
DG Class / Division	3
Hazchem code	3 [Y] E
Packing Group	II



15. REGULATORY INFORMATION

Reference is made to the Kenyan *Factories & Other Place of Work (Hazardous Substances) Regulations, 2007*. Other regulations may apply to this material.

16. OTHER INFORMATION

Risk Statement:

R11 Highly flammable
R38 Irritating to skin
R45(2) May cause cancer
R65 Harmful: may cause lung damage if swallowed

Safety statement:

S16 Keep away from sources of ignition – no smoking
S2 Keep out of reach of children
S23 Do not breathe gas/fumes/vapor/spray
S24 Avoid contact with skin
S29 Do not empty in drains
S33 Take precautionary measures against static charges
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection
S43 In case of fire, use foam, dry chemical or CO₂
S51 Use only in well ventilated area
S53 Avoid exposure
S62 If swallowed, do not induce vomiting, seek medical advise immediately and show this MSDS.

Hazard Category:

Toxic, Irritant, Highly Flammable

MSDS Revisions : None.
MSDS Regulation : The contents in the MSDS are in fulfillment of the requirements of the *Factories & Other Place of Work (Hazardous Substances) Regulations, 2007*.

Disclaimer: : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.