

Gasoline Fuel

Spill Assessment

Gather Available Information

Shipping Manifest Required

Product ID: Gasoline

TDG Class: Class 3 Flammable Liquid

UN# & PG: UN1203 PG II

Special Provisions for Transport: Marine Pollutant

Special Provisions Exemption: None

Mixed Load Limited Quantity: 30L up to accumulation of 500L

ERAP Index: None required for road vehicles

Passenger Vehicle Limitation: 5L

Compatibility Issues: Reactive with oxidizing agents and acids.

Manufacture Information

Name/ Client:

Tel:

Cell:

Assess the Volume Spilled

Total volume:

Number of Containers:

Product not spilled:

Product recovered / Contained:

Product Information:

Physical Classification: Liquid

Conditions of Instability: Reactive with oxidizing agents and acids

Color: Clear to slightly yellow or green

Odor: Petroleum gasoline

pH: Not applicable

Molecular Formula: Gasoline is a mixture (not a compound) of variable hydrocarbons (Benzene, Toluene, Xylene, Ethylbenzene, MTBE) obtained from crude oil. It will always have a variable composition between C_6H_{14} and $C_{12}H_{26}$.

Specific Gravity: 0.74 (water = 1)

Solubility: Insoluble in water

Flash Point: -38°C

Vapor Density: 3-4 (air = 1)

Gasoline Fuel

Safety Assessment

Responders Safety

Public Security Perimeter: 50m for small spills; 300m for large spills

Evacuation Perimeter: 800m for major incident involving fire

PPE Requirement for spills: Splash Glasses/ Goggles. Rubber Boots. Gloves (Nitrile, Neoprene, PVC)

Use NIOSH approved respirators (organic vapor cartridge) or SCBA to avoid inhalation of the vapors

Structural Fire Fighters' Protective Clothing: Only provides limited protection. Consider chemical protective clothing at large spills (i.e. TyChem or Saranex)

Routes of Entry: Skin contact, eyes, inhalation and ingestion

Acute Health Effects: Skin contact may cause moderate to severe irritation.

Eye contact may cause mild eye irritation.

Inhalation may cause respiratory tract irritation.

Oral aspiration of liquid drops into lungs may produce severe irritation or burns to the respiratory tract.

Ingestion may cause gastro-intestinal irritation.

Ingestion/Inhalation overexposure may also cause central nervous system depression with symptoms of nausea, headaches, vomiting, dizziness, coma or death.

Decontamination Requirements: Full decon unit should be on standby.

Product Safety Information:

Toxic Vapors: Fires involving gasoline will release toxic gases.

Combustible: Gasoline liquid and vapors are flammable.

Vapors: Products of combustion include carbon dioxides (CO, CO₂), nitrotgen oxides (NO_x), PAHs, phenols, aldehydes, ketones, smoke and irritating vapors as products of incomplete combustion.

Small Fire Hazards: Use dry chemical, CO₂, water spray, fog or foam to extinguish. Do not flood fire with water as gasoline floats on water and may cause the fire to spread.

Large Fire Hazards: Major fires may require withdrawal, allowing tank to burn. Do not flood fire with water as gasoline floats on water and may cause the fire to spread.

Gasoline Fuel

Explosion Hazard: Do not pressurize, cut, weld, braze, solder, grind or expose containers to heat or sources of ignition. Containers may explode in heat of fire. Vapors may form explosive mixture with air.

First Aid Requirements: see MSDS for full details. Contact Manufacture.

Environmental Assessment

Assess the following Conditions

Ambient Temperatures:
Precipitation (%):
Sunrise (time)/ Sunset (time):
Slope or ground contour (% gradient):
Porous Soil (sand/ cobble):
Dense Soil (clay/ bedrock):
Ground cover (foliage/ peat/ marsh / snow):

Assess Distance to Water Body

Into Water Body:
<5m:
5-15m:
>15m:

Identify the Water Body

Distance Marker (km #):

Name of nearby water bodies:

Fisheries assessment reports:

Distance to other tributaries:

Gasoline Fuel

Effects of Product into Water

Toxicity: Classified as a Marine Pollutant/ Deleterious Substance

Immediately toxic to aquatic life

Gasoline spills cause short-term (acute) toxicity to aquatic life in the water column especially in confined areas

Specific Properties: Dispersal /Viscosity – very low and tends to spread to a thin sheen or a micron thick.

Dissolves / solubility – highly soluble; the lighter aromatic compounds of gasoline tend to be more volatile and soluble. These BTEX compounds (up to 50%) tend to be the most water-soluble constituents

Evaporation – Depends on ambient and water temperatures, however gasoline tends to evaporate within 1-2 days

Emulsification – gasoline will not emulsify

Rule of Thumb: *Within three days: a third will dissolve; a third will evaporate; and a third will disperse*

Spill Response: Assess, Contain, Recover & Dispose. Refer to specific guidelines.

Containment Techniques: All containment should be completed before product reaches the collection area. Once product arrives, evacuate the collection area. Consider using: Tarp Containment; Containment Boom; Sandbag Diversion; Culvert Block; Sorbent Boom for Skimming

Recovery: Due to high volatility it is safer to allow product to evaporate. Clean up and collection should only be considered if appropriate vapor monitors can determine if it is safe to approach containment area.

Effects of Product on Air

Specific Properties: Volatility – highly volatile

Evaporation – often completely within 1-2 days

Spill to open environment (no fire): Vapors are heavier than air and may collect in low-lying areas. Vapors in contact with a heat source may ignite and flash back to the source. Inhalation may cause lung irritation.

Hazardous Decompositions (no fires): None

Gasoline Fuel

Effects of Product on Land

Specific Properties: Toxicity – highly acute toxicity to biota
Penetration – will readily penetrate substrate;
nonadhesive

Effects on Land: Gasoline hydrocarbons are relatively mobile in most soil types because of its volatility and solubility. When exposed to sun and air, most of these compounds tend to break down quickly.

Due to its high mobility, assess the soil characteristics for porosity and density. Assess the groundwater depths.

Small Spills (land): Assess, Contain, Recover & Dispose. Refer to specific guidelines.

Considered <100L

Consider on-site treatment if not adjacent to water body

Large Spills (land): Assess, Contain, Recover & Dispose. Refer to specific guidelines.

Containment: Recovery ditch, pits and sumps
Interceptor trench

Recovery: May not be possible due to flammability of product

Freezing Temperatures: Gasoline will saturate both snow and ice