ROBERT H. LEE & ASSOCIATES, INC.
ARCHITECTURE PLANNING ENGINEERING
900 LARKSPUR LANDING CIRCLE, #125, LARKSPUR, CA 94939 · (415) 461-8890

CLOSURE PLAN

Facility Information

Facility Name:	Shell Oil Service Station
Facility Address:	230 MacArthur Blvd./Piedmont Oakland, CA
Business Phone:	(415)655-5863
Owner:	Shell Oil Co.
Address:	P.O. Box 4023 Concord, CA 94524
Contact Person:	Ray Newsome
Telephone:	(415)676-1414, ext. 128

Contractor Information

General Contractor:	R.W. Johnston & Sons 801 53rd Avenue Oakland, CA 94601 (415)261-9424
Tank Removal Contractor:	Crosby/Overton 8430 Amelia Street Oakland, CA 94621
Tank Hauler/Cleaner:	H & H Ship 220 China Basin San Francisco, CA 94107 (415)543-4835
Soil Testing Lab:	Hazcat (Mobile Testing Lab) 733 Dartmouth Avenue San Carlos, CA 94070 (415)591-5820
Soil Hauler:	Erickson, Inc. 255 Parr Blvd. Richmond, CA 94801 (415)235-1393
Soil Disposal Location:	Inactive Shell Service Station 1000 Cutting Blvd. Richmond, CA

1) Sampling and Analysis Activities:

A) Samples are retrieved fromeither end of tank, placed in brass tubes and placed into ice. A chain-of-custody is made out and signed and delivered to the lab.

B) Samples are analyzed for:

1) Gasoline tanks:
In soil: T.H.C. (Total Hydrocarbon Count) low boiling fraction.
In water: T.H.C. low boiling fraction and B.T.X. (Benzene, Toluene, Xylene).

2) Decontamination of equipment:

A) Tanks are triple rinsed on site and inerted.
B) Tanks are place on trucks and delivered to a tank facility for final cleaning and torch cutting.

3) Waste Materials to be disposed:

A) Rinse aid from tank cleaning is placed on Bill of Lading and disposed of at a refinery, if applicable. If no refinery is available material must be placed on a Hazardous Waste Manifest and disposed of at a Class I disposal site.
B) Contaminated soil must be placed on a Hazardous Waste Manifest and disposed of at a Class I disposal site.

HAZARDOUS MATERIAL INVENTORY STATEMENT

Chemical Name	Trade Name	Quantity Stored	Major Constituents	UN/NA Number	Physical State Hazard Class	NFPA Hazard I.D. Numbers	MSDS Attached	Manifest Attached
GASOLINE	UNLEADED REGULAR	10,000 GAL.	HYDRO-CARBON BLEND	1203	LIQ.FL.	HEALTH 2 FLAM. 3 REACT. 0	YES	N.A.
GASOLINE	UNLEADED SUPER	8,000 GAL.	HYDRO-CARBON BLEND	1203	LIQ.FL.	HEALTH 2 FLAM. 3 REACT. 0	YES	N.A.
GASOLINE	REGULAR	8,000 GAL.	HYDRO-CARBON BLEND	1203	LIQ.FL.	HEALTH 1 FLAM. 3 REACT. 0	YES	N.A.

MATERIAL SAFETY DATA SHEET

Shell

MSDS NUMBER ▶ 51,161-2 PAGE 1 OF 4

SECTION I NAME

PRODUCT ▶ Shell Super Unleaded Gasoline

CHEMICAL/SYNONYMS ▶ Petrol

CHEMICAL FAMILY ▶ Hydrocarbon

SHELL CODE ▶ 04352 CAS NUMBER ▶ Mixture

24 HOUR EMERGENCY ASSISTANCE

SHELL 713-493-9481

CHEMTREC 800-424-9300

HAZARD RATING

LEAST 0 ▶ SLIGHT 1 ▶ MODERATE 2 ▶ HIGH 3 ▶ EXTREME 4

HEALTH	2
FIRE	4
REACTIVITY	0

SECTION II INGREDIENTS

COMPOSITION	%	TOXICITY DATA
Shell Super Unleaded Gasoline	100	Not Determined
A complex combination of hydrocarbons largely C-4 through C-12. Benzene content typically from 0.5% to 2.5%. May contain up to 10% of various oxygenated hydrocarbons, such as aliphatic alcohols and ethers. Also contains small amounts of other additives which are not considered to be hazardous at the concentrations used.	---	---

SECTION III HEALTH INFORMATION

Inhalation: WARNING. Minimize breathing vapors. Repeated or prolonged exposures to high concentration of vapor may cause pulmonary irritation, headache, dizziness, nausea, incoordination, loss of consciousness or even death.

Ingestion: Harmful or fatal if swallowed resulting in nausea, vomiting, diarrhea and restlessness. Aspiration of vomitus and/or gasoline may lead to severe lung damage and even death.

Skin Contact: Prolonged and repeated liquid contact can cause defatting and drying of the skin resulting in skin irritation and dermatitis. Some components of gasoline may be absorbed through the skin.

NOTE: (1) It has been reported that chronic inhalation exposure to an unleaded motor gasoline, which was fully vaporized, has produced kidney and liver cancers in some laboratory rodents. The studies were sponsored by the American Petroleum Institute. The API test material used was blended to represent a typical unleaded motor gasoline. Shell unleaded gasoline has not been evaluated in this type of animal test. (2) Repeated high level benzene exposure may produce injury of the blood-forming tissues causing blood abnormalities and possibly leukemia; however, exposures to such high levels are not likely to be encountered in gasoline vapor due to the low benzene content.

SECTION IV OCCUPATIONAL EXPOSURE LIMITS

No OSHA limits have been established.

ACGIH/TLV = 300 ppm (8-hours TWA); TLV-STEL = 500 ppm

NOTE: THE ACGIH/TLV limit of 300 ppm is under review. In the interim, minimize exposure to a level which is practical and attainable.

SECTION V EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.

SKIN CONTACT: Flush with water while removing contaminated clothing and shoes. Follow by washing with soap and water. Do not reuse clothing or shoes until cleaned. If irritation persists, get medical attention.

EYE CONTACT: Flush with water for 15 minutes while holding eyelids open. Get medical attention.

INGESTION: Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.

NOTE TO THE PHYSICIAN: If more than 2.0 ml per kg has been ingested and vomiting has not occurred, emesis should be induced with medical supervision. Keep victim's head below hips to prevent aspiration. If symptoms such as loss of gag reflex, convulsions or unconsciousness occur before emesis, gastric lavage using a cuffed endotracheal tube should be considered.

SECTION VI PHYSICAL DATA

BOILING POINT (°F) ▶ 100-425 Approx.	MELTING POINT (°F) ▶ N.A.	VAPOR PRESSURE (mmHg) ▶ 7-14.5 PSI (Reid)
SPECIFIC GRAVITY (H2O=1) ▶ 0.72-0.76	% VOLATILE BY VOLUME ▶ 100 (@ 15°F)	VAPOR DENSITY (AIR=1) ▶ 3.5
SOLUBILITY IN WATER ▶ Negligible	EVAPORATION RATE (BUTYL ACETATE=1) ▶ N.A.	N.A.= Not Available

APPEARANCE AND ODOR

Red color; clear and bright liquid. Characteristic petroleum-hydrocarbon odor.

SECTION VII FIRE AND EXPLOSION HAZARDS

FLASH POINT AND METHOD USED: -40°F Tag Closed Tester

FLAMMABLE LIMITS % VOLUME IN AIR: LOWER 1.4 UPPER 7.6

EXTINGUISHING MEDIA

Use water fog, foam, dry chemical or CO_2. Do not use a direct stream of water. Product will float and can be reignited on surface of water.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS

Danger. Extremely Flammable. Clear fire area of unprotected personnel and isolate. Do not enter confined fire space without full bunker gear including a positive pressure NIOSH approved self-contained breathing apparatus. Cool fire exposed containers with water.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Vapors are heavier than air accumulating in low areas and traveling along the ground away from the handling site.

Do NOT weld, heat or drill on or near container. However, if emergency situations require drilling, only trained emergency personnel should drill.

MATERIAL SAFETY DATA SHEET

MSDS NUMBER ▶ 51.161-2
PAGE 3 OF 4

SECTION VIII — REACTIVITY

STABILITY ▶ [ ] UNSTABLE [X] STABLE

HAZARDOUS POLYMERIZATION ▶ [ ] MAY OCCUR [X] WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID

Avoid heat, sparks, open flames and strong oxidizing agents. Prevent vapor accumulation.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide and other unidentified organic compounds can be formed upon combustion.

SECTION IX — EMPLOYEE PROTECTION

RESPIRATORY PROTECTION

Under conditions of potential high exposure, the use of a NIOSH-approved respirator is recommended (see Section X). Per 29 CFR 1910.134 use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors. For service station personnel protection, see Section XI.

PROTECTIVE CLOTHING

As required to minimize skin and eye contact, wear impervious gloves, eye protection, and other protective clothing.

ADDITIONAL PROTECTIVE MEASURES

Use explosion-proof ventilation as required to control vapor concentrations.

SECTION X — ENVIRONMENTAL PROTECTION

SPILL OR LEAK PROCEDURES

DANGER! EXTREMELY FLAMMABLE. Eliminate all ignition sources. Handling equipment must be grounded to prevent sparking.
Large spills: Isolate hazard area; deny entry to unnecessary personnel. Wear appropriate respirator and protective clothing. Shut off source of leak if safe to do so; dike and contain. Water fog may be useful in suppressing vapor cloud; contain run-off. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material; place in D.O.T. authorized non-leaking containers for proper disposal. Flush area with water only if flush solutions can be contained and gasoline is recoverable.
Small spills: Take up with an absorbent material such as sand or clay and dispose as above.

WASTE DISPOSAL

Recovered product should be recycled. Waste generated during cleanup which is discarded as a solid waste should be disposed of at a facility approved under RCRA regulations for hazardous waste (See Sec. XIII).

ENVIRONMENTAL HAZARDS

This product is an "oil" under the Clean Water Act. KEEP OUT OF SURFACE WATERS AND ANY WATER COURSES OR SEWERS ENTERING OR LEADING TO SURFACE WATERS. See Section XIII.

MATERIAL SAFETY DATA SHEET

MSDS NUMBER ▶ 51.161-2
PAGE 4 OF 4

SECTION XI — SPECIAL PRECAUTIONS

DANGER! EXTREMELY FLAMMABLE. Avoid heat, sparks, open flames, including pilot lights, and strong oxidizing agents. Use explosion-proof ventilation to prevent vapor accumulation. All handling equipment must be grounded to prevent sparking. Harmful or fatal if swallowed. Do not siphon gasoline by mouth.

FOR USE AS A MOTOR FUEL ONLY. Do not use as a cleaning solvent or for other non-motor fuel uses.

Wash with soap and water before eating, drinking, smoking or using toilet facilities. Launder contaminated clothing before reuse. Under normal working conditions at service stations, a respirator is not warranted. If a major spill occurs, get upwind and notify local emergency personnel. Remember explosion and fire is the most immediate danger.

SECTION XII — TRANSPORTATION REQUIREMENTS

DEPARTMENT OF TRANSPORTATION CLASSIFICATION ▶

[X] FLAMMABLE LIQUID
[ ] COMBUSTIBLE LIQUID
[ ] OXIDIZING MATERIAL
[ ] NON-FLAMMABLE GAS
[ ] FLAMMABLE SOLID
[ ] POISON CLASS A
[ ] CORROSIVE MATERIAL
[ ] NOT HAZARDOUS BY D.O.T. REGULATIONS
[ ] FLAMMABLE GAS
[ ] POISON CLASS B
[ ] IRRITATING MATERIAL
[ ] OTHER—Specify below

D.O.T. PROPER SHIPPING NAME

Gasoline

OTHER REQUIREMENTS

D.O.T. I.D. # UN1203, Guide No. 27

SECTION XIII — OTHER REGULATORY CONTROLS

EPA - Resource Conservation and Recovery Act (RCRA) Regulations
As produced, this material is a product and not a waste. If discarded or, intended to be discarded as is, it is a liquid ignitable hazardous waste as defined in RCRA (40 CFR 261.21). The EPA hazardous waste number is D001. Free liquid ignitable wastes are banned from disposal by landfilling, but if in containers. Product recovery and recycling are recommended where possible.

EPA - Clean Water Act (CWA)
This product is classified as an oil under Section 311 of the Clean Water Act. Spills entering (a) surface waters or (b) any watercourses or sewers entering/leading to surface waters that cause a sheen MUST be reported to the National Response Center, 800-424-8802.

BE SAFE
READ OUR PRODUCT SAFETY INFORMATION ... AND PASS IT ON

John P Lepori

SHELL OIL COMPANY
PRODUCT SAFETY AND COMPLIANCE
OIL AND CHEMICAL PRODUCTS
P.O. BOX 4320
HOUSTON, TEXAS 77210

DATE PREPARED
May 05, 1983

MATERIAL SAFETY DATA SHEET

Shell

MSDS NUMBER ▶ 51,270-2

SECTION I — NAME	
PRODUCT	▶ Shell Unleaded Gasoline
CHEMICAL SYNONYMS	▶ Petrol
CHEMICAL FAMILY	▶ Hydrocarbon
SHELL CODE	▶ 0214[illegible]
C.A.S. NUMBER	▶ Mixture

24 HOUR EMERGENCY ASSISTANCE

SHELL 713-473-[illegible]

CHEMTREC 800-424-9300

HAZARD RATING: LEAST 0, SLIGHT 1, MODERATE 2, HIGH 3, EXTREME 4

HEALTH	2
FIRE	4
REACTIVITY	0

SECTION II — INGREDIENTS

COMPOSITION	%	TOXICITY DATA
Shell Unleaded Gasoline	100	Not Determined
A complex combination of hydrocarbons largely C-4 through C-12. Benzene content typically from 0.5% to 2.5%. May contain up to 10% of various oxygenated hydrocarbons, such as aliphatic alcohols and ethers. Also contains small amounts of other additives which are not considered to be hazardous at the concentrations used.	---	

SECTION III — HEALTH INFORMATION

Inhalation: WARNING. Minimize breathing vapors. Repeated or prolonged exposures to high concentration of vapor may cause pulmonary irritation, headache, dizziness, nausea, incoordination, loss of consciousness or even death.

Ingestion: Harmful or fatal if swallowed resulting in nausea, vomiting, diarrhea and restlessness. Aspiration of vomitus and/or gasoline may lead to severe lung damage and even death.

Skin Contact: Prolonged and repeated liquid contact can cause defatting and drying of the skin resulting in skin irritation and dermatitis. Some components of gasoline may be absorbed through the skin.

NOTE: (1) It has been reported that chronic inhalation exposure to an unleaded motor gasoline, which was fully vaporized, has produced kidney and liver cancers in some laboratory rodents. The studies were sponsored by the American Petroleum Institute. The API test material used was blended to represent a typical unleaded motor gasoline. Shell unleaded gasoline has not been evaluated in this type of animal test. (2) Repeated high level benzene exposure may produce injury of the blood-forming tissues causing blood abnormalities and possibly leukemia; however, exposures to such high levels are not likely to be encountered in gasoline vapor due to the low benzene content.

SECTION IV — OCCUPATIONAL EXPOSURE LIMITS

No OSHA limits have been established.

ACGIH/TLV = 300 ppm (8-hours TWA); TLV-STEL = 500 ppm

NOTE: THE ACGIH/TLV limit of 300 ppm is under review. In the interim, minimize exposure to a level which is practical and attainable.

MATERIAL SAFETY DATA SHEET

Shell

MSDS NUMBER ▶ 51,270-2

SECTION V — EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.

SKIN CONTACT: Flush with water while removing contaminated clothing and shoes. Follow by washing with soap and water. Do not reuse clothing or shoes until cleaned. If irritation persists, get medical attention.

EYE CONTACT: Flush with water for 15 minutes while holding eyelids open. Get medical attention.

INGESTION: Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.*

*NOTE TO THE PHYSICIAN: If more than 2.0 ml per kg has been ingested and vomiting has not occurred, emesis should be induced with medical supervision. Keep victim's head below hips to prevent aspiration. If symptoms such as loss of gag reflex, convulsions or unconsciousness occur before emesis, gastric lavage using a cuffed endotracheal tube should be considered.

SECTION VI — PHYSICAL DATA

BOILING POINT (°F)	▶ 100-425 Approx.	MELTING POINT (°F)	▶ N.A.	VAPOR PRESSURE	▶ 7-14.5 psi (Reid)
SPECIFIC GRAVITY (H_2O=1)	▶ 0.72-0.76	% VOLATILE BY VOLUME	▶ 100 (at 415°F)	VAPOR DENSITY (AIR=1)	▶ 3.5
SOLUBILITY IN WATER	▶ Negligible	EVAPORATION RATE (BUTYL ACETATE=1)	▶ N.A.	N.A.= Not Available	

APPEARANCE AND ODOR

Colorless to bronze color; clear and bright liquid. Characteristic petroleum-hydrocarbon odor.

SECTION VII — FIRE AND EXPLOSION HAZARDS

FLASH POINT AND METHOD USED	FLAMMABLE LIMITS % VOLUME IN AIR: LOWER	UPPER
-40°F Tag Closed Tester	1.3	7.6

EXTINGUISHING MEDIA

Use water fog, foam, dry chemical or CO_2. Do not use a direct stream of water. Product will float and can be reignited on surface of water.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS

Danger. Extremely Flammable. Clear fire area of unprotected personnel and isolate. Do not enter confined fire space without full bunker gear including a positive pressure NIOSH approved self-contained breathing apparatus. Cool fire exposed containers with water.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Vapors are heavier than air accumulating in low areas and traveling along the ground away from the handling site.

Do NOT weld, heat or drill on or near container. However, if emergency situations require drilling, only trained emergency personnel should drill.

MATERIAL SAFETY DATA SHEET

SECTION VIII — REACTIVITY

STABILITY ▶ ☐ UNSTABLE ☒ STABLE

HAZARDOUS POLYMERIZATION ▶ ☐ MAY OCCUR ☒ WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID

Avoid heat, sparks, open flames and strong oxidizing agents. Prevent vapor accumulation.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide and other unidentified organic compounds can be formed upon combustion.

SECTION IX — EMPLOYEE PROTECTION

RESPIRATORY PROTECTION

Under conditions of potential high exposure, the use of a NIOSH-approved respirator is recommended (see Section X). Per 29 CFR 1910.134 use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors. For service station personnel protection, see Section XI.

PROTECTIVE CLOTHING

As required to minimize skin and eye contact, wear impervious gloves, eye protection, and other protective clothing.

ADDITIONAL PROTECTIVE MEASURES

Use explosion-proof ventilation as required to control vapor concentrations.

SECTION X — ENVIRONMENTAL PROTECTION

SPILL OR LEAK PROCEDURES

DANGER! EXTREMELY FLAMMABLE. Eliminate all ignition sources. Handling equipment must be grounded to prevent sparking.
Large spills: Isolate hazard area; deny entry to unnecessary personnel. Wear appropriate respirator and protective clothing. Shut off source of leak if safe to do so; dike and contain. Water fog may be useful in suppressing vapor cloud; contain run-off. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material; place in D.O.T. authorized non-leaking containers for proper disposal. Flush-area with water only if flush solutions can be contained and gasoline is recoverable.
Small spills: Take up with an absorbent material such as sand or clay and dispose as above.

WASTE DISPOSAL

Recovered product should be recycled. Waste generated during cleanup which is discarded as a solid waste should be disposed of at a facility approved under RCRA regulations for hazardous waste (See Sec. XIII).

ENVIRONMENTAL HAZARDS

This product is an "oil" under the Clean Water Act. KEEP OUT OF SURFACE WATERS AND ANY WATER COURSES OR SEWERS ENTERING OR LEADING TO SURFACE WATERS. See Section XIII.

MATERIAL SAFETY DATA SHEET

SECTION XI — SPECIAL PRECAUTIONS

DANGER! EXTREMELY FLAMMABLE. Avoid heat, sparks, open flames, including pilot lights, and strong oxidizing agents. Use explosion-proof ventilation to prevent vapor accumulation. All handling equipment must be grounded to prevent sparking. Harmful or fatal if swallowed. Do not siphon gasoline by mouth.

FOR USE AS A MOTOR FUEL ONLY. Do not use as a cleaning solvent or for other non-motor fuel uses.

Wash with soap and water before eating, drinking, smoking or using toilet facilities. Launder contaminated clothing before reuse. Under normal working conditions at service stations, a respirator is not warranted. If a major spill occurs, get upwind and notify local emergency personnel. Remember explosion and fire is the most immediate danger.

SECTION XII — TRANSPORTATION REQUIREMENTS

DEPARTMENT OF TRANSPORTATION CLASSIFICATION ▶

☒ FLAMMABLE LIQUID	☐ COMBUSTIBLE LIQUID	☐ OXIDIZING MATERIAL	☐ NON-FLAMMABLE GAS
☐ FLAMMABLE SOLID	☐ POISON CLASS A	☐ CORROSIVE MATERIAL	☐ NOT HAZARDOUS BY D.O.T. REGULATIONS
☐ FLAMMABLE GAS	☐ POISON CLASS B	☐ IRRITATING MATERIAL	☐ OTHER—Specify below

D.O.T. PROPER SHIPPING NAME

Gasoline

OTHER REQUIREMENTS

D.O.T. I.D. # UN1203, Guide No. 27

SECTION XIII — OTHER REGULATORY CONTROLS

EPA - Resource Conservation and Recovery Act (RCRA) Regulations
As produced, this material is a product and not a waste. If discarded or intended to be discarded as is, it is a liquid ignitable hazardous waste as defined in RCRA (40 CFR 261.21). The EPA hazardous waste number is D001. Free liquid ignitable wastes are banned from disposal by landfilling bulk or in containers. Product recovery and recycling are recommended where possible.

EPA - Clean Water Act (CWA)
This product is classified as an oil under Section 311 of the Clean Water Act. Spills entering (a) surface waters or (b) any watercourses or sewers entering/leading to surface waters that cause a sheen MUST be reported to the National Response Center, 800-424-8802.

BE SAFE
READ OUR PRODUCT SAFETY INFORMATION
...AND PASS IT ON

John P. [illegible]

SHELL OIL COMPANY
PRODUCT SAFETY AND COMPLIANCE
OIL AND CHEMICAL PRODUCTS
P.O. BOX 4320
HOUSTON, TEXAS 77210

DATE PREPARED
May 05, 1983

MATERIAL SAFETY DATA SHEET

Shell

MSDS NUMBER ▶ 51,180-2 PAGE 1 OF 4

SECTION I — NAME

PRODUCT ▶ Shell Regular Gasoline

CHEMICAL SYNONYMS ▶ Petrol

CHEMICAL FAMILY ▶ Hydrocarbon

SHELL CODE ▶ 02200 | CAS NUMBER ▶ Mixture

24 HOUR EMERGENCY ASSISTANCE

SHELL 713-473-5461

CHEMTREC 800-424-9300

HAZARD RATING

LEAST 0 | SLIGHT 1 | MODERATE 2 | HIGH 3 | EXTREME 4

HEALTH	2
FIRE	4
REACTIVITY	0

SECTION II — INGREDIENTS

COMPOSITION	%	TOXICITY DATA
Shell Regular Gasoline	100	Not Determined
A complex combination of hydrocarbons largely C-4 through C-12. Contains tetraethyl lead and tetramethyl lead. Benzene content typically from 0.5% to 2.5%. May contain up to 10% of various oxygenated hydrocarbons, such as aliphatic alcohols and ethers. Also contains small amounts of other additives which are not considered to be hazardous at the concentrations used.	---	---

SECTION III — HEALTH INFORMATION

Inhalation: BARKING. Minimize breathing vapors. Repeated or prolonged exposures to high concentration of vapor may cause pulmonary irritation, headache, dizziness, nausea, incoordination, loss of consciousness or even death.

Ingestion: Harmful or fatal if swallowed resulting in nausea, vomiting, diarrhea and restlessness. Aspiration of vomitus and/or gasoline may lead to severe lung damage and even death.

Skin Contact: Prolonged and repeated liquid contact can cause defatting and drying of the skin resulting in skin irritation and dermatitis. Some components of gasoline may be absorbed through the skin.

NOTE: (1) It has been reported that chronic inhalation exposure to an unleaded motor gasoline, which was fully vaporized, has produced kidney and liver cancers in some laboratory rodents. The studies were sponsored by the American Petroleum Institute. The API test material used was designed to represent a typical unleaded motor gasoline. Shell unleaded gasoline has not been evaluated in this type of animal test. (2) Repeated high level benzene exposure may produce injury of the blood-forming tissues causing blood abnormalities and possibly leukemia; however, exposures to such high levels are not likely to be encountered in gasoline vapor due to the low benzene content.

SECTION IV — OCCUPATIONAL EXPOSURE LIMITS

No OSHA limits have been established.

ACGIH/TLV = 300 ppm (8-hours TWA); TLV-STEL = 500 ppm

NOTE: THE ACGIH/TLV limit of 300 ppm is under review. In the interim, minimize exposure to a level which is practical and attainable.

SECTION V — EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.

SKIN CONTACT: Flush with water while removing contaminated clothing and shoes. Follow by washing with soap and water. Do not reuse clothing or shoes until cleaned. If irritation persists, get medical attention.

EYE CONTACT: Flush with water for 15 minutes while holding eyelids open. Get medical attention.

INGESTION: Do not induced vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.*

*NOTE TO THE PHYSICIAN: If more than 2.0 ml per kg has been ingested and vomiting has not occurred, emesis should be induced with medical supervision. Keep victim's head below hips to prevent aspiration. If symptoms such as loss of gag reflex, convulsions or unconsciousness occur before emesis, gastric lavage using a cuffed endotracheal tube should be considered.

SECTION VI — PHYSICAL DATA

BOILING POINT (°F)	▶ 100-435 Approx.	MELTING POINT (°F)	▶ N.A.	VAPOR PRESSURE (mmHg)	▶ 7-14.5 PSI (Reid)
SPECIFIC GRAVITY (H2O = 1)	▶ 0.72-0.76	% VOLATILE BY VOLUME	▶ 100 (at 413°F)	VAPOR DENSITY (AIR = 1)	▶ 3-4
SOLUBILITY IN WATER	▶ Negligible	EVAPORATION RATE (BUTYL ACETATE = 1)	▶ N.A.	N.A. = Not Available	

APPEARANCE AND ODOR

Colorless to bronze color; clear and bright liquid. Characteristic petroleum-hydrocarbon odor.

SECTION VII — FIRE AND EXPLOSION HAZARDS

FLASH POINT AND METHOD USED: -40°F TAG Closed Tester

FLAMMABLE LIMITS — VOLUME % IN AIR: LOWER ▶ 1.3 UPPER ▶ 7.6

EXTINGUISHING METHOD

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS

Use water fog, foam, dry chemical or CO_2. Do not use a direct stream of water. Product will float and can be reignited on surface of water.

Danger. Extremely Flammable. Clear fire area of unprotected personnel and isolate. Do not enter confined fire space without full bunker gear including a positive pressure NIOSH approved self-contained breathing apparatus. Cool fire exposed containers with water.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Vapors are heavier than air accumulating in low areas and traveling along the ground away from the handling site.

Do NOT weld, heat or drill on or near container. However, if emergency situations require drilling, only trained emergency personnel should drill.

MATERIAL SAFETY DATA SHEET

SECTION VIII — REACTIVITY

STABILITY ▶ [ ] UNSTABLE [X] STABLE

HAZARDOUS POLYMERIZATION ▶ [ ] MAY OCCUR [X] WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID

Avoid heat, sparks, open flames and strong oxidizing agents. Prevent vapor accumulation.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide and other unidentified organic compounds can be formed upon combustion.

SECTION IX — EMPLOYEE PROTECTION

RESPIRATORY PROTECTION

Under conditions of potential high exposure, the use of a NIOSH-approved respirator is recommended (see Section X). Per 29 CFR 1910.134 use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors. For service station personnel protection, see Section XI.

PROTECTIVE CLOTHING

As required to minimize skin and eye contact, wear impervious gloves, eye protection, and other protective clothing.

ADDITIONAL PROTECTIVE MEASURES

Use explosion-proof ventilation as required to control vapor concentrations.

SECTION X — ENVIRONMENTAL PROTECTION

SPILL OR LEAK PROCEDURES

DANGER! EXTREMELY FLAMMABLE. Eliminate all ignition sources. Handling equipment must be grounded to prevent sparking.
Large spills: Isolate hazard area; deny entry to unnecessary personnel. Wear appropriate respirator and protective clothing. Shut off source of leak if safe to do so; dike and contain. Water fog may be useful in suppressing vapor cloud; contain run-off. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material; place in D.O.T. authorized non-leaking containers for proper disposal. Flush area with water only if flush solutions can be contained and gasoline is recoverable.
Small spills: Take up with an absorbent material such as sand or clay and dispose as above.

WASTE DISPOSAL

Recovered product should be recycled. Waste generated during cleanup which is discarded as a solid waste should be disposed of at a facility approved under RCRA regulations for hazardous waste. (See Sec. XIII).

ENVIRONMENTAL HAZARDS

This product is an "oil" under the Clean Water Act. KEEP OUT OF SURFACE WATERS AND ANY WATER COURSES OR SEWERS ENTERING OR LEADING TO SURFACE WATERS. See Section XIII.

MATERIAL SAFETY DATA SHEET

SECTION XI — SPECIAL PRECAUTIONS

DANGER! EXTREMELY FLAMMABLE. Avoid heat, sparks, open flames, including pilot lights, and strong oxidizing agents. Use explosion-proof ventilation to prevent vapor accumulation. All handling equipment must be grounded to prevent sparking. Harmful or fatal if swallowed. Do not siphon gasoline by mouth.

FOR USE AS A MOTOR FUEL ONLY. Do not use as a cleaning solvent or for other non-motor fuel uses.

Wash with soap and water before eating, drinking, smoking or using toilet facilities. Launder contaminated clothing before reuse. Under normal working conditions at service stations, a respirator is not warranted. If a major spill occurs, get upwind and notify local emergency personnel. Remember explosion and fire is the most immediate danger.

SECTION XII — TRANSPORTATION REQUIREMENTS

DEPARTMENT OF TRANSPORTATION CLASSIFICATION ▶

[X] FLAMMABLE LIQUID	[ ] COMBUSTIBLE LIQUID	[ ] OXIDIZING MATERIAL	[ ] NON-FLAMMABLE GAS
[ ] FLAMMABLE SOLID	[ ] POISON CLASS A	[ ] CORROSIVE MATERIAL	[ ] NOT HAZARDOUS BY D.O.T. REGULATIONS
[ ] FLAMMABLE GAS	[ ] POISON CLASS B	[ ] IRRITATING MATERIAL	[ ] OTHER

D.O.T. PROPER SHIPPING NAME

Gasoline

OTHER REQUIREMENTS

D.O.T. I.D. # UN1203, Guide No. 27

SECTION XIII — OTHER REGULATORY CONTROLS

EPA - Resource Conservation and Recovery Act (RCRA) Regulations
As produced, this material is a product and not a waste. If discarded or intended to be discarded as is, it is a liquid ignitable hazardous waste as defined in RCRA (40 CFR 261.21). The EPA hazardous waste number is D001. Free liquid ignitable wastes are banned from disposal by landfilling bulk or in containers. Product recovery and recycling are recommended where possible.

EPA - Clean Water Act (CWA)
This product is classified as an oil under Section 311 of the Clean Water Act. Spills entering (a) surface waters or (b) any watercourses or sewers entering/leading to surface waters that cause a sheen MUST be reported to the National Response Center, 800-424-8802.

John P. [signature]
SHELL OIL COMPANY
PRODUCT SAFETY AND COMPLIANCE
OIL AND CHEMICAL PRODUCTS
P.O. BOX 4320
HOUSTON, TEXAS 77210

DATE PREPARED
May 05, 1983