



Safety Data Sheet

Rev: 04.06.2021

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Name: Gasoline

Safety Data Sheet Number: 002

MARPOL Annex I Category: Gasoline (unleaded) and Spirits

REACH Registration Number: 01-2119471335-39-0020

1.2 Relevant identified uses of the substance or mixture and uses advised against

Intended Use: Laboratory test sample

Uses Advised Against: Other uses are not recommended unless an assessment is completed, prior to commencement of that use, which demonstrates that the use will be controlled.

1.3 Details of the manufacturer of the substance or mixture

Clark Laboratories

1801 Route 51 South

Jefferson Hills, PA 15025

412-387-1001

1.4 Emergency telephone number

Transportation Emergency Response

Chemtrec- 24 hour emergency response: (800)424-9300

International Collect: +1 703 741 5970

SDS Assistance Email: sds@clarktesting.com

Section 2: Hazards Identification

2.1 Classification of the substance or mixture

CLP Classification (EC No 1272/2008)

DANGER

HAZARDS

H226: Flammable liquid and vapor.

H304: May be fatal if swallowed and enters airways

H315: Causes skin and eye irritation

H340: May cause genetic defects

H350: May cause cancer

H361: Suspected of damaging the unborn child

H372: Causes damage to organs (blood/blood forming organs) through prolonged or repeated exposure.

H336: May cause drowsiness or dizziness.

H411: Toxic to aquatic life with long lasting effects.

PRECAUTIONS

P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking

P233: Keep container tightly closed.

P235: Keep cool.

P240: Ground and bond container and receiving equipment.

P242: Use non-sparking tools.

P243: Take action to prevent static discharges.

P261: Avoid breathing dust/fume/gas/mist/vapors/spray.

P264: Wash thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P271: Use only outdoors or in a well ventilated area.

P280: Wear protective gloves / protective clothing / eye protection / face protection

P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

P304+P340: If INHALED: Remove person to fresh air and keep air and keep comfortable for breathing.

P312: Call a POISON CENTER/doctor/if you feel unwell.

P313: Get medical advice/attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before reuse> Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention.

P331: Do not induce vomiting

P352: Wash with plenty of water.

P361: Take off immediately all contaminated clothing.

P370 + P378: In case of fire: Use foam, CO2, or dry chemical for extinction.

P391: Collect spillage

P403: Store in a well-ventilated place.

P405: Store locked up.

P501: Dispose of contents/container to approved disposal facility.

2.2 Label Elements



2.3 Other hazards

Does not meet the criteria for persistent, bioaccumulative and toxic (PBT) or very persistent, very bioaccumulative (vPvB) substances.

Section 3: Composition / Information on Ingredients

Name	CAS NUMBER	EINECS #	% (Weight)
Gasoline	8006-61-9	232-349-1	100

Methyl-t-butyl ether	1634-04-4	216-653-1	<15*
Ethyl-t-butyl ether	628-81-9	211-055-7	Varies*
Toluene	108-88-3	203-625-9	<13
Hexane	110-54-3	203-777-6	<6
Ethanol	64-17-5	200-578-6	<10
Butane	106-97-8	203-448-7	<20
Benzene	71-43-2	200-753-7	<5
Xylenes	1330-20-7	215-535-7	<14
Ethylbenzene	100-41-4	202-849-4	<3
1,2,4-Trimethylbenzene	95-63-6	202-436-9	<4
Napthalene	91-20-3	202-049-5	<1

*Added only in selected marketing areas.

3.2 Mixture

Component CASRN EINECS REACH

Registration No.

Concentration¹ CLP

Classification²

DSD

Classification³

Gasoline 86290-81-5 289-220-8 01-2119471335-39 >90 H350,H340,H30

4

Carc.Cat.2; R45

Muta.Cat.2; R46

Xn; R65

Toluene 108-88-3 203-625-9 Not applicable 0-15 H225,H361d,H3

04,H373,H315,

H336

F; R11

Xi; R38

Xn; R48/20-65

Repr.Cat.3; R63

R67

Ethyl tert-butyl ether 637-92-3 211-309-7 Not applicable <10 - -

n-Hexane 110-54-3 203-777-6 Not applicable <2 H225,H361f,H3

04,H373,H315,

H336,H411

F; R11

Xi; R38
N; R51-53
Repr.Cat.3; R62
Xn; R65-48/20
R67
Benzene 71-43-2 200-753-7 Not applicable <1 H225,H350,H340,H372,H304,H319,H315
F; R11
Xi; R36/38
Carc.Cat.1; R45
Muta.Cat.2; R46
T; R48/23/24/25
Xn; R65

¹ All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

² Regulation EC 1272/2008.

³ Superseded Directives 67/548/EEC and 1999/45/EC.

Total Sulfur: < 0.1

Section 4: First Aid Measures

4.1 Description of first aid measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek 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 or a waterless hand cleaner. If irritation or redness develops, seek medical attention. Wash contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician.
(see Note to Physician)

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If breathing is difficult, oxygen or artificial respiration should be administered by qualified personnel. If symptoms persist, seek medical attention.

Ingestion (Swallowing): 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.

4.2 Most important symptoms and effects

Acute: Headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue

Delayed: None known or anticipated. See Section 11 for information on effects from chronic exposure, if any.

4.3 Indication of immediate medical attention and special treatment needed

Notes to Physician: When using high-pressure equipment, injection of product under the skin can occur. In this case, the casualty should be sent immediately to hospital. Do not wait for symptoms to develop. High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous appearing external wound. These injuries often require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of injury. Early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

Section 5: Fire-Fighting Measures

NFPA Hazard Classes

Health: 1 (Slight)

Flammability: 3 (Serious)

Instability: 0 (Minimal)

Other Hazards: Not applicable

5.1 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. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

5.2 Special hazards arising from the substance or mixture

Unusual Fire & Explosion Hazards: Extremely flammable. This material 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. This product will float and can be reignited on surface water. 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.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of nitrogen and sulfur may also be formed.

5.3 Special protective actions for firefighters

For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, 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 and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Avoid spreading burning liquid with water used for cooling purposes. Cool equipment exposed to fire with water, if it can be done safely.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Extremely flammable. Spillages of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof electrical equipment is recommended. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

6.2 Environmental precautions

Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use foam on spills to minimize vapors. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard.

6.3 Methods and material for containment and cleaning up

Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Keep away from ignition sources such as heat/sparks/open flame – No smoking. Take precautionary measures against static discharge. Nonsparking tools should be used. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8). Open container slowly to relieve any pressure. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes for specific bonding/grounding requirements). Do not enter confined spaces such as tanks or pits without following proper entry procedures. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Extremely Flammable. May vaporize easily at ambient temperatures. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas. 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. For use as a motor fuel only. Do not use as a solvent due to its flammable and potentially toxic properties. Siphoning by mouth can result in lung aspiration which can be harmful or fatal. The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of incomplete combustion products (e.g. carbon monoxide, oxides of sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels. Gasoline engine exhaust contains hazardous combustion products and has been identified as a possible cancer hazard. Exposure should be minimized to reduce potential risk.

7.2 Conditions for safe storage, including any incompatibilities

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. Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Store only in approved

containers. Post area "No Smoking or Open Flame." Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. "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 appropriate guidance pertaining to cleaning, repairing, welding, or other contemplated operations. Outdoor or detached storage is preferred. Indoor storage should meet Country or Committee standards and appropriate fire codes.

7.3 Specific end use(s)

Refer to supplemental exposure scenarios if attached.

Section 8: Exposure Controls / Personal Protection

8.1 Control parameters

Component ACGIH Ireland-HSA Other

Gasoline STEL: 500 ppm

TWA: 300 ppm

--- 0.5 ppm TWA8hr

(as benzene)

0.25 ppm TWA12hr

(as benzene)

2.5 ppm STEL

(as benzene)

(Phillips 66 Guidelines)

Toluene TWA: 20 ppm TWA: 50 ppm TWA: 192

mg/m³

STEL: 100 ppm STEL:

384 mg/m³

Skin

Occupational Exposure Limits

Ethyl tert-butyl ether TWA: 5 ppm

25 ppm TWA; A4 - not

classifiable as a human

carcinogen; TLV basis:

upper and lower

respiratory tract irritation,

CNS impairment

--- ---

n-Hexane TWA: 50 ppm

Skin

TWA: 20 ppm TWA: 72

mg/m³

Benzene STEL: 2.5 ppm

TWA: 0.5 ppm

Skin

TWA: 1 ppm TWA: 3

mg/m³

Skin

STEL = Short Term Exposure Limit (15 minutes); TWA = Time Weighted Average (8 hours); --- = No Occupational Exposure Limit

Component ACGIH EU 98/24/EC

Gasoline --- ---

Toluene Toluene in blood: 0.02 mg/L, prior to last shift of workweek ()

Toluene in urine: 0.03 mg/L, end of shift ()

o-Cresol with hydrolysis in urine: 0.3 mg/g creatinine, end of shift (background)

Ethyl tert-butyl ether --- ---

n-Hexane 2,5-Hexanedione without hydrolysis in urine: 0.4 mg/L, end of shift at end of workweek ()

Benzene S-Phenylmercapturic acid in urine: 25 µg/g creatinine, end of shift (background)

t,t-Muconic acid in urine: 500 µg/g creatinine, end of shift (background)

--- = No Biological Limit Value

Relevant DNEL and PNEC:

Environmental Predicted No-Effect Concentration (PNEC): Not applicable

8.2 Exposure controls

Occupational Exposure Limits:

Component	Limit	TWA	STEL	Notation
Gasoline	ACGIH_TLV	300 ppm	500 ppm	A3
Benzene	OSHA_PEL	1 ppm	5 ppm	
	ACGIH_TLV	0.5 ppm	2.5 ppm	A1
Toluene	OSHA_PEL	200 ppm		
	ACGIH_TLV	50 ppm		A4
Xylene	OSHA_PEL	100 ppm		
	ACGIH_TLV	100 ppm	150 ppm	A4

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection: The use of eye protection that meets or exceeds EN 166 is recommended to protect against potential eye contact, irritation, or injury. Depending on conditions of use, close fitting eye protection and a face shield may be necessary.

Skin/Hand Protection: The use of gloves impervious to the specific material handled that comply with EN 374 is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products.

Depending on exposure and use conditions, additional protection may be necessary to prevent skin contact including use of items such as chemical resistant boots, aprons, arm covers, hoods, coveralls, or encapsulated suits. Suggested protective materials: Nitrile

Inhalation: 3.2 mg/m³/day (DMEL, as benzene)

Biological Limit Values

Ingestion: Not applicable

Inhalation: Not applicable

Consumer Derived No-Effect Level (DNEL)

Dermal: 0.234 mg/kgbw/day (DMEL, as benzene)

Worker Derived No-Effect Level (DNEL)

Dermal: Not applicable

Respiratory Protection: Where there is potential for airborne exposure above the exposure limit an approved air purifying respirator equipped with Type A, organic gases and vapour filters (as specified by the manufacturer) may be used.

A respiratory protection program that follows recommendations for the selection, use, care and maintenance of respiratory protective devices in EN 529:2005 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health.

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse.

Environmental Exposure Controls: Refer to Sections 6, 7, 12 and 13.

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Data represent typical values and are not intended to be specifications. N/A = Not Applicable; N/D = Not Determined

Appearance: Clear to straw-colored to reddish-colored

Physical Form: Liquid

Odor: Strong hydrocarbon odor

Odour Threshold: N/D

pH: N/A

Freezing Point: -36°F (-38°C)

Boiling Point: 70°F (21°C)

Flash Point: -36°F (-38°C)

Evaporation Rate N/D

Flammability: Extremely Flammable

Upper Explosive Limits N/D

Lower Explosive Limits N/D

Vapour Pressure: Approximately 5-15 psi (Reid vapor pressure)

Relative Vapour Density (air=1): >1

Relative Density (water=1): N/D

Solubility (ies): Insoluble in water; miscible with most organic solvents.

Partition Coefficient (n-octanol/water) (Kow): N/D

Auto-ignition Temperature: 853°F (456°C)

Decomposition Temperature: N/D

Viscosity: Not available

Explosive Properties: N/A

Oxidising Properties: N/A

9.2 Other Information

Pour Point: N/D

Section 10: Stability and Reactivity

10.1 Reactivity Not chemically reactive.

10.2 Chemical stability Stable under normal ambient and anticipated conditions of use.

10.3 Possibility of hazardous reactions Hazardous reactions not anticipated.

10.4 Conditions to avoid Avoid high temperatures and all sources of ignition. Prevent vapor accumulation.

10.5 Incompatible materials Avoid contact with strong oxidizing agents and strong reducing agents.

10.6 Hazardous decomposition products Not anticipated under normal conditions of use.

Section 11: Toxicological Information

11.1 Information on Toxicological Effects of Substance/Mixture

Substance / Mixture

Aspiration Hazard: May be fatal if swallowed and enters airways.

Skin Corrosion/Irritation: Causes skin irritation. Repeated exposure may cause skin dryness or cracking.

Serious Eye Damage/Irritation: Causes mild eye irritation.

Signs and Symptoms: Effects of overexposure can include slight irritation of the respiratory tract, nausea, vomiting, and signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue).

Continued exposure to high concentrations can result in vomiting, cardiac irregularities and sudden loss of consciousness.

Skin Sensitization: Not expected to be a skin sensitizer.

Respiratory Sensitization: Not expected to be a respiratory sensitizer.

Specific Target Organ Toxicity (Single Exposure): May cause drowsiness and dizziness.

Specific Target Organ Toxicity (Repeated Exposure): Not expected to cause organ effects from repeated exposure. Two

year inhalation studies of wholly vaporized unleaded gasoline, and 90 days studies of various petroleum naphthas, did not

produce significant target organ toxicity in laboratory animals. Nephropathy in male rats, characterized by the accumulation of

alpha-2-u- globulin in epithelial cells of the proximal tubules was observed, however follow-up studies suggest that these

changes are unique to the male rat.

Carcinogenicity: May cause cancer. Based on component information. Two year inhalation studies of vaporized unleaded

gasoline produced an increased incidence of kidney tumors in male rats and liver tumors in female mice. Repeated skin

application of various petroleum naphthas in mice for two years resulted in an increased incidence of skin tumors but only in

the presence of severe skin irritation. Follow-up mechanistic studies suggest that the occurrence of these tumors may be the

consequence of promotional processes and not relevant to human risk assessment. 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 the International

Agency for Research on Cancer.

Germ Cell Mutagenicity: May cause genetic defects. Based on component information. Gasoline was negative in microbial

mutagenicity and unscheduled DNA tests in rat hepatocytes. Gasoline did not induce chromosome aberrations in vivo in rat

bone marrow cells and was negative in a mouse dominant lethal assay.

Reproductive Toxicity: Suspected of damaging the unborn child. Suspected of damaging fertility. Based on component

information. No evidence of developmental toxicity was found in pregnant laboratory animals (rats and mice) exposed to high

vapor concentrations of unleaded gasoline and petroleum naphthas via inhalation. A two-generation reproductive toxicity study

of vapor recovery gasoline did not adversely affect reproductive function or offspring survival and development.

Other Comments: Gasoline engine exhaust has been classified by the International Agency for Research on Cancer (IARC) as possibly carcinogenic to human.

11.2 Information on Hazardous Components

Toluene

Carcinogenicity: Exposure of rats and mice to toluene at concentrations ranging from 120-1200 ppm for two years did not demonstrate evidence of carcinogenicity. Toluene has not been listed as a carcinogen by IARC.

LC50/LD50 Data

3.75 g/kg

>5.2 mg/L (vapor)

Acute Toxicity Hazard

Ingestion (Swallowing) Unlikely to be harmful

Inhalation

14 g/kg

Additional Information

Expected to have a low degree of toxicity by inhalation

Skin Absorption Unlikely to be harmful

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.

Reproductive Toxicity: Exposure to toluene during pregnancy has demonstrated limited evidence of developmental toxicity in laboratory animals. Decreased fetal body weight and increased skeletal variations in both inhalation and oral studies, but only at doses that were maternally toxic. No fetal toxicity was seen at doses that were not maternally toxic. Decreased sperm counts have been observed in male rats in the absence of a reduction in fertility. Toluene has been reported to cause mental or growth retardation in the children of solvent abusers who directly inhale toluene during pregnancy.

n-Hexane

Target Organs: Excessive exposure to n-hexane can result in peripheral neuropathies. The initial symptoms are symmetrical

sensory numbness and paresthesias 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.

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

Benzene

Carcinogenicity: Benzene is an animal carcinogen and is known to produce acute myelogenous leukemia (a form of cancer) in humans. Benzene has been identified as a human carcinogen by IARC, the US National Toxicology Program and the US-Occupational Safety and Health Administration.

Target Organs: Prolonged or repeated exposures to benzene vapors can cause damage to the blood and blood forming organs, including disorders like leukopenia, thrombocytopenia, and aplastic anemia.

Reproductive Toxicity: Some studies in occupationally exposed women have suggested benzene exposure increased risk of miscarriage and stillbirth and decreased birth weight and gestational age. The size of the effects detected in these studies was small, and ascertainment of exposure and outcome in some cases relied on self-reports, which may limit the reliability of these results.

Germ Cell Mutagenicity: Benzene exposure has resulted in chromosomal aberrations in human lymphocytes and animal bone marrow cells. Exposure has also been associated with chromosomal aberrations in sperm cells in human and animal studies.

Section 12: Ecological Information

12.1 Toxicity

Acute aquatic toxicity studies on samples of gasoline and naphtha streams show acute toxicity values greater than 1 mg/L and mostly in the range 1-100 mg/L. These tests were carried out on water accommodated fractions, in closed systems to prevent evaporative loss. Results are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon composition. These

substances should be regarded as toxic to aquatic organisms, with the potential to cause long term adverse effects in the aquatic environment. Classification: H411; Chronic Cat 2.

12.2 Persistence and degradability

The hydrocarbons in this material are not readily biodegradable but are regarded as inherently biodegradable since their hydrocarbon components can be degraded by microorganisms.

Persistence per IOPC Fund definition: Non-Persistent

12.3 Bioaccumulative potential

Log Kow values measured for the hydrocarbon components of this material range from 3 to greater than 6 and therefore are regarded as having the potential to bioaccumulate. In practice, metabolic processes or physical properties may prevent this effect or limit bioavailability.

12.4 Mobility in soil and environmental fate

On release to water, hydrocarbons will float on the surface and since they are sparingly soluble, the only significant loss is volatilization to air. In air, these hydrocarbons are photodegraded by reaction with hydroxyl radicals with half lives varying from 6.5 days for benzene to 0.5 days for n-dodecane.

12.5 Results of PBT and vPvB Assessment

Not a PBT or vPvB substance.

12.6 Other Adverse Effects

None anticipated.

Section 13: Disposal Considerations

13.1 Waste treatment methods

European Waste Code: 13 07 02* petrol

This material, if discarded as produced, would be considered as hazardous waste pursuant to Directive 91/689/EEC on hazardous waste, and subject to the provisions of that Directive unless Article 1(5) of that Directive applies.

This code has been assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste generators/producers are responsible for assessing the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code.

Disposal must be in accordance with Directive 2006/12/EC and other applicable national or regional provisions, and based upon material characteristics at time of disposal. For incineration of waste, follow Directive 2000/76/EC. For landfill of waste, follow Directive 1999/31/EC. Product is suitable for burning in an enclosed controlled burner for fuel value if >5000 BTU, or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

Follow Directive 2000/76/EC.

Empty Containers: Container contents should be completely used and containers emptied prior to discard. Empty drums should be properly sealed and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with applicable regulations.

Section 14: Transport Information

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA/ DOT

14.1 UN number UN1203

14.2 UN proper shipping name GASOLINE

14.3 Transport hazard class(es) 3

14.4 Packing group II

14.5 Environmental hazards Marine pollutant - Environmentally Hazardous

14.6 Special precautions for user If transported in bulk by marine vessel in international waters, product is being carried under the scope of MARPOL

Annex I.

14.7 Transport in bulk according to Annex II of MARPOL

73/78 and the IBC Code

Not applicable

Section 15: Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EC 1272/2008 - Classification, labelling and packaging of substances and mixtures

EN166:2002 Eye Protection

EN 529:2005 Respiratory Protective devices

BS EN 374-1:2003 Protective gloves against chemicals and micro-organisms

Occupational Exposure Limits, Health and Safety Authority

Directive 91/689/EEC on hazardous waste (European Waste Codes)

Directive 2000/76/EC on incineration of waste

Directive 1999/31/EC on landfill of waste

Export Rating: NLR (No License Required)

15.2 Chemical Safety Assessment

A chemical safety assessment has been carried out for the substance/mixture.

Section 16: Other Information

List of Relevant Hazard Statements:

H224: Extremely flammable liquid and vapour

H225: Highly flammable liquid and vapour

H304: May be fatal if swallowed and enters airways

H315: Causes skin irritation

H319: Causes serious eye irritation

H336: May cause drowsiness or dizziness

H340: May cause genetic defects

H350: May cause cancer

H361: Suspected of damaging fertility or the unborn child

H372: Causes damage to organs through prolonged or repeated exposure

H373: May cause damage to organs through prolonged or repeated exposure

H411: Toxic to aquatic life with long lasting effects

R11: Highly flammable

R12: Extremely flammable

R20: Harmful by inhalation

R23: Toxic by inhalation

R24: Toxic in contact with skin

R25: Toxic if swallowed

R36: Irritating to eyes

R38: Irritating to skin

R45: May cause cancer

R46: May cause heritable genetic damage

R48: Danger of serious damage to health by prolonged exposure

R62: Possible risk of impaired fertility

R63: Possible risk of harm to the unborn child

R65: Harmful: may cause lung damage if swallowed

R67: Vapors may cause drowsiness and dizziness

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Guide to Abbreviations:

ACGIH = American Conference of Governmental Industrial Hygienists; ADR = Agreement on Dangerous Goods by Road; BMGV = Biological Monitoring Guidance Value; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA = [US] Environmental Protection Agency; Germany-TRGS = Technical Rules for Dangerous Substances; IARC = International Agency for Research on Cancer; ICAO/IATA = International Civil Aviation Organization / International Air Transport Association; INSHT = National Institute for Health and Safety at Work; IMDG = International Maritime Dangerous Goods; Ireland-HSA = Ireland's National Health and Safety Authority; LEL = Lower Explosive Limit; MARPOL = Marine Pollution; N/A = Not Applicable; N/D = Not Determined; NTP = [US] National Toxicology Program; PBT = Persistent, Bioaccumulative and Toxic; RID = Regulations Concerning the International Transport of Dangerous Goods by Rail; STEL = Short Term Exposure Limit; TLV = Threshold Limit Value; TRGS 903 = Technical rules for hazardous substances; TWA = Time Weighted Average; UEL = Upper Explosive Limit; UK-EH40 = United Kingdom EH40/2005 OEL; vPvB = very Persistent, very Bioaccumulative

References:

29 CFR 1910.1200 (2012)

EU Regulation 1907/2006

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet. Adequate training and instruction should be given by you to your employees and affected personnel. Appropriate warnings and safe handling procedures should be provided by you to handlers and users. Additionally, the user should review this information, satisfy itself as to its suitability and completeness, and pass on the information to its employees or customers in accordance with the applicable federal, state, provincial or local hazard communication requirements. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the fitness for use of the material, or the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, vendor neither assumes nor retains any responsibility for any damage or injury resulting from abnormal use, from any failure to adhere to appropriate practices, or from any hazards inherent in the nature of the material. Moreover, unless an employee or a customer accesses or receives a SDS directly from the company, there is no assurance that a document obtained from alternate sources is the most currently available SDS. The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Completed by Clark PTP Staff

No Annex