SAFETY DATA SHEET

91 Octane Petrol (Regular)

Section 1. Identification

Product name	91 Octane Petrol (Regular)
Product code	0000003084
SDS no.	0000003084
Historic SDS no.	ACQHF
Use of the substance/mixture	Use only as a motor fuel for spark ignition engines. NOT for aviation use. Should NOT be used as a solvent nor cleaning agent.
Product type	Liquid.
Supplier	bp Oil New Zealand Limited Level 2 Stantec Building 105 Carlton Gore Road Newmarket Auckland New Zealand 1023 Phone 0800 800 027 (Monday to Friday, 9am to 5pm) Email: Customerenquiries@se1.bp.com
Emergency telephone number	Tel: 0800 805 111
New Zealand National Poisons Centre	0800 764 766

Section 2. Hazards identification

HSNO Classification	FLAMMABLE LIQUIDS - Category 1 GERM CELL MUTAGENICITY - Category 1 CARCINOGENICITY - Category 2 REPRODUCTIVE TOXICITY - Category 1 ASPIRATION HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2

This material is classified as hazardous according to criteria in the Hazardous Substances (Hazard Classification) Notice 2020.

This material is classified as DANGEROUS GOODS according to criteria in New Zealand Standard 5433:2012 Transport of Dangerous Goods on Land.

Routes of entry	Dermal contact. Eye contact. Inhalation. Ingestion.
GHS label elements	
Signal word	Danger
Hazard statements	Extremely flammable liquid and vapour. May be fatal if swallowed and enters airways. May cause genetic defects. Suspected of causing cancer. May damage fertility or the unborn child. Toxic to aquatic life with long lasting effects.
Precautionary statements	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid release to the environment.
Response	Collect spillage. IF exposed or concerned: Get medical attention. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

Section 2. Hazards identification

Storage	Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.

Symbol

Other hazards which do not result in classification	Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapour may cause flash fire or explosion.

Section 3. Composition/information on ingredients

Substance/mixture	Mixture

Methyl tert-butyl ether: <0.2%

Ingredient name	% (w/w)	CAS number
Petrol	≥90	86290-81-5
Benzene	<1	71-43-2
diisopropyl ether	<1	108-20-3
Ethanol	<1	64-17-5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Inhalation	If inhaled, remove to fresh air. Get medical attention.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.
Skin contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Drench contaminated clothing with water before removing. This is necessary to avoid the risk of sparks from static electricity that could ignite contaminated clothing. Contaminated clothing is a fire hazard. Contaminated leather, particularly footwear, must be discarded. Clean shoes thoroughly before reuse. Get medical attention.
Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	Treatment should in general be symptomatic and directed to relieving any effects. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Section 5. Firefighting measures

Extinguishing media

Suitable	In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray.
Not suitable	Do not use water jet.
Specific hazards arising from the chemical	Extremely flammable liquid and vapour. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is toxic to aquatic life with long lasting effects. Vapours can form explosive mixtures with air. Vapours are heavier than air and can spread along the ground or float on water surfaces to remote ignition sources. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly-grounded containers. Static accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Liquid will float and may reignite on surface of water.
Hazardous combustion products	Combustion products may include the following: carbon oxides (CO, CO_2) (carbon monoxide, carbon dioxide)
Hazchem code	3YE
Special precautions for fire-fighters	No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Special protective equipment for fire-fighters	Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".
For emergency responders	Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".
Environmental precautions	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage. In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents. If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities. Collect recovered product and other contaminated materials in suitable tanks or containers for recycle, recovery or safe disposal.

Methods and material for containment and cleaning up

Small spill	Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

Section 6. Accidental release measures

Large spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Dike spill area and do not allow product to reach sewage system and surface or ground water. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilt product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. Avoid contact of spilt material and runoff with soil and surface waterways. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Restrict flow velocity according to API 2003 (2008), NFPA 77 (2007), and Laurence Britton, “Avoiding Static Ignition Hazards in Chemical Operations”. To reduce potential for static discharge, ensure that all equipment is properly grounded and bonded and meets appropriate electrical classification requirements.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Light hydrocarbon vapours can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapour in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks). Explosive air/vapour mixtures may form at ambient temperature. If product comes into contact with hot surfaces, or leaks occur from pressurised fuel pipes, the vapour or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Petrol	**ACGIH TLV (United States).** TWA: 300 ppm 8 hours. Issued/Revised: 5/1996 TWA: 890 mg/m³ 8 hours. Issued/Revised: 5/1996 STEL: 500 ppm 15 minutes. Issued/Revised: 5/1996 STEL: 1480 mg/m³ 15 minutes. Issued/Revised: 5/1996
Benzene	**NZ HSWA 2015 - GRWM 2016 (New Zealand). Absorbed through skin.** WES-TWA: 0.05 ppm 8 hours. Issued/Revised: 11/2020 WES-TWA: 0.16 mg/m³ 8 hours. Issued/Revised: 11/2020
diisopropyl ether	**NZ HSWA 2015 - GRWM 2016 (New Zealand).** WES-STEL: 1300 mg/m³ 15 minutes. Issued/Revised: 1/1994 WES-STEL: 310 ppm 15 minutes. Issued/Revised: 1/1994 WES-TWA: 1040 mg/m³ 8 hours. Issued/Revised: 1/1994 WES-TWA: 250 ppm 8 hours. Issued/Revised: 1/1994
Ethanol	**NZ HSWA 2015 - GRWM 2016 (New Zealand).** WES-TWA: 1880 mg/m³ 8 hours. Issued/Revised: 1/1994 WES-TWA: 1000 ppm 8 hours. Issued/Revised: 1/1994

Biological exposure indices

Benzene	**NZ HSWA 2015 - HSWR 2016 (New Zealand, 11/2020)** BEI: 2 µg/g creatinine, S-phenylmercapturic acid [in urine]. Sampling time: end of shift.

Recommended monitoring procedures

Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.
Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.
Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.
The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Section 8. Exposure controls/personal protection

Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye protection	Chemical splash goggles.
Hand protection	Wear chemical resistant gloves. Do not re-use gloves. Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture). Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis. The frequency of replacement will depend upon the circumstances of use.
Skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn. The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	Liquid.
Colour	Red. Orange. or Bronze
Odour	Petrol [Strong]
Odour threshold	0.025 ppm (Based on Petrol)
pH	Not applicable. Based on Solubility in Water (insoluble in water.)
Melting point/freezing point	<-60°C (<-76°F) (Based on Petrol)
Boiling point, initial boiling point, and boiling range	30 to 210°C (86 to 410°F)
Drop Point	Not available.
Flash point	Closed cup: <-40°C (<-40°F)
Auto-ignition temperature	>350°C (>662°F)
Flammability	Not applicable. Based on physical state.
Lower and upper explosion limit/flammability limit	Lower: 1.4% Upper: 7.6%
Vapour pressure	27.1 to 45.1 kPa (203.04 to 338.4 mm Hg) [20°C (68°F)]
Relative vapour density	>1 [Air = 1]
Density	740 kg/m³ (0.74 g/cm³)

Solubility(ies)

Media	**Result**
water	Not soluble

Miscible with water No.

Section 9. Physical and chemical properties

Partition coefficient: n-octanol/water	2 to 7 (Based on Gasoline)
Decomposition temperature	Not observed to decompose by final boiling point: >210°C (>410°F)
Viscosity	Kinematic: 0.4 to 0.55 mm^2/s (0.4 to 0.55 cSt) at 40°C
Explosive properties	Based on Low boiling point naphtha - Not considered explosive based on structural and oxygen balance considerations. Vapours may form explosive mixtures with air.
Oxidising properties	Based on Low boiling point naphtha - Not considered oxidizing based on structural considerations.

Particle characteristics

Median particle size	Not applicable.

Section 10. Stability and reactivity

Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame). Avoid excessive heat.
Incompatible materials	Reactive or incompatible with the following materials: oxidising materials
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on likely routes of exposure

Inhalation	Vapour inhalation under ambient conditions is not normally a problem due to low vapour pressure.
Ingestion	Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.
Skin contact	No known significant effects or critical hazards.
Eye contact	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	No specific data.
Ingestion	Adverse symptoms may include the following: nausea or vomiting reduced foetal weight increase in foetal deaths skeletal malformations
Skin contact	No specific data.
Eye contact	No specific data.

Acute toxicity

Product/ingredient name	Test	Species	Result	Exposure	Remarks
Petrol	LC50 Inhalation Vapour	Rat	>7630 mg/m^3 Nominal	4 hours	Based on Gasoline
	LC50 Inhalation Vapour	Rat	>5610 mg/m^3 analytical	4 hours	Based on Gasoline
	LD50 Dermal	Rabbit	>2000 mg/kg	-	Based on Gasoline
	LD50 Oral	Rat	>5000 mg/kg	-	Based on Gasoline
diisopropyl ether	LC50 Inhalation Vapour	Rat	40.5 mg/m^3	1 hours	-

	LD50 Dermal	Rabbit	2000 mg/kg	-	-
	LD50 Oral	Rat	8470 mg/kg	-	-
Ethanol	LC50 Inhalation Vapour	Rat	124.7 mg/l	4 hours	Based on Ethanol
	LC50 Inhalation Vapour	Rat	116.9 mg/l	4 hours	Based on Ethanol
	LC50 Inhalation Vapour	Rat	133.8 mg/l	4 hours	Based on Ethanol
	LD50 Oral	Rat	10470 mg/kg	-	Based on Ethanol

Conclusion/Summary Not available.

Irritation/Corrosion

Product/ingredient name	Species	Result	Score	Exposure	Observation	Conc.	Remarks
Petrol	Rabbit	Eyes - Non-irritating to the eyes.	-	-	-	-	Based on Gasoline
	Rabbit	Skin - Irritant	-	-	-	-	Based on Gasoline
Ethanol	Rabbit	Eyes - Cornea opacity	-	-	-	-	Based on Ethanol
	Rabbit	Eyes - Iris lesion	-	-	-	-	Based on Ethanol
	Rabbit	Eyes - Irritant	-	-	-	-	Based on Ethanol
	Rabbit	Skin - Non-irritant to skin.	-	-	-	-	Based on Ethanol

Sensitisation

Product/ingredient name	Route of exposure	Species	Result	Remarks
Petrol	skin	Guinea pig	Not sensitising	Based on Gasoline

Potential chronic health effects

General	Solvent "sniffing" (abuse) or intentional overexposure to vapours can produce serious central nervous system effects, including unconsciousness, and possibly death.
Inhalation	May be harmful by inhalation after often repeated exposure. Vapour, mist or fume may irritate the nose, mouth and respiratory tract.
Ingestion	Ingestion of large quantities may cause nausea and diarrhoea. If swallowed, may irritate the mouth, throat and digestive system. If swallowed, may cause abdominal pain, stomach cramps, nausea, vomiting, diarrhoea, dizziness and drowsiness.
Skin contact	Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
Eye contact	Vapour, mist or fume may cause eye irritation. Exposure to vapour, mist or fume may cause stinging, redness and watering of the eyes.
Carcinogenicity	Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	May cause genetic defects.
Teratogenicity	May damage the unborn child.

Developmental effects No known significant effects or critical hazards.

Fertility effects May damage fertility.

Carcinogenicity

Product/ingredient name	Test		Species	Result		Exposure
Petrol	Mouse	Dermal	102 weeks	Negative - Dermal - Unspecified	-	Based on Gasoline
	Rat	Inhalation	113 weeks	Negative - Inhalation - Unspecified	-	Based on Gasoline
Ethanol	Rat	Oral	104 weeks	Negative - Oral - Unspecified	-	Based on Ethanol
	Mouse	Oral	105 weeks	Positive - Oral - Unspecified	-	Based on Ethanol

Conclusion/Summary Benzene: May cause cancer

Mutagenicity

Product/ingredient name	Test	Experiment	Result	Remarks
Petrol	Equivalent to OECD 476	Experiment: In vitro Subject: Mammal - species unspecified	Negative	Based on Gasoline
	Equivalent to OECD 471	Experiment: In vitro Subject: Non-mammalian species	Negative	Based on Gasoline
	EPA OPPTS 870.5395	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Gasoline vapour condensate
	Equivalent to OECD 475	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Gasoline
Ethanol	Equivalent to OECD 476	Experiment: In vitro Subject: Mammal - species unspecified	Negative	Based on Ethanol
	Equivalent to OECD 473	Experiment: In vitro Subject: Non-mammalian species	Negative	Based on Ethanol
	Equivalent to OECD 478	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Ethanol

Conclusion/Summary Benzene: May cause genetic defects.

Reproductive toxicity

Section 11. Toxicological information

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Result	Exposure
Petrol	-	-	Negative	Rat	Inhalation	14 days
	-	Negative	-	Rat	Inhalation	2 generation
Ethanol	-	-	Negative	Rat	Inhalation	18 days
	-	Positive	-	Rat	Oral	2 generation

Conclusion/Summary	Development: Not classified. Based on available data, the classification criteria are not met. Fertility: Not classified. Based on available data, the classification criteria are not met. Effects on or via lactation: Not classified. Based on available data, the classification criteria are not met.

Aspiration hazard

Name
91 Octane Petrol (Regular) Petrol

Other adverse symptoms

Excess exposure to vapors may produce headaches, dizziness, nausea, drowsiness, irritation of eyes, nose and throat and central nervous system depression. Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this product. Inhalation of unleaded gasoline vapors did not produce birth defects in laboratory animals. Ingestion of this material can cause gastrointestinal irritation and diarrhea.

In a long-term inhalation study of whole unleaded gasoline vapors, exposure-related kidney damage and kidney tumors were observed in male rats. Similar kidney effects were not seen in female rats or in mice. At the highest exposure level (2056 ppm), female mice had an increased incidence of liver tumors. Results from subsequent scientific studies have shown that a broad variety of chemicals cause these kidney effects only in the male rat. Further studies have discovered the means by which the physiology of the male rat uniquely predispose it to these effects. Consequently, the Risk Assessment Forum of the Environmental Protection Agency has recognized that these responses are not predictive of a human health hazard. The liver tumors that were increased in the high-dose female mice are likewise of questionable significance because of their high spontaneous occurrence even without chemical exposure and because the rate of their occurrence is accelerated by a broad spectrum of chemicals not commonly considered to be carcinogens (e.g., phenobarbital).
Thus, the significance of the mouse liver tumor response in terms of human health is questionable.

Gasoline is a complex mixture of hydrocarbons and contains benzene (typically no more than 2 volume%), toluene, and xylene. Chronic exposure to high levels of benzene has been shown to cause cancer (leukemia) in humans and other adverse blood effects (anemia). Benzene is considered a human carcinogen by IARC, NTP and OSHA. Over exposure to xylene and toluene can cause irritation to the upper respiratory tract, headache and narcosis. Some liver damage and lung inflammation were seen in chronic studies on xylene in guinea pigs but not in rats.

Solvent "sniffing" (abuse) or intentional overexposure to vapors can produce serious central nervous system effects, including unconsciousness, and possibly death.

Gasoline as a mixture is classified as a 2B (possible human) carcinogen by IARC.

Gasoline engine exhaust is classified as possibly carcinogenic to humans by IARC

Section 11. Toxicological information

(2B). This classification is based primarily on animal and in vitro studies of gasoline engine exhaust condensates/extracts. Studies of the gaseous exhaust stream in animals did not provided sufficient evidence for classification as a carcinogen.

Section 12. Ecological information

Ecotoxicity Water polluting material. May be harmful to the environment if released in large quantities. This material is toxic to aquatic life with long lasting effects.

Aquatic and terrestrial toxicity

Product/ingredient name	Species	Result/Test	Exposure	Effects	Remarks
Petrol	Micro-organism	Acute EC50 15.41 mg/l Nominal Fresh water	40 hours	growth inhibition	-
	Algae	Acute EL50 3.1 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Gasoline
	Algae	Acute EL50 3.7 mg/l Nominal Fresh water	96 hours	(growth rate)	Based on Gasoline
	Daphnia	Acute EL50 4.5 mg/l Nominal Fresh water	48 hours	Mobility	Based on straight-run light gasoline
	Fish	Acute LL50 10 mg/l Nominal Fresh water	96 hours	Mortality	Based on Naphtha (petroleum), isomerisation
	Fish	Acute LL50 8.2 mg/l Nominal Fresh water	96 hours	Mortality	Based on Naphtha (petroleum), light alkylate
	Algae	Acute NOELR 0.5 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Gasoline
	Daphnia	Acute NOELR 0.5 mg/l Nominal Fresh water	48 hours	Mobility	Based on Straight run gas oil
	Daphnia	Chronic EL50 10 mg/l Nominal Fresh water	21 days	Reproduction	Based on Naphtha (petroleum), light alkylate
	Daphnia	Chronic EL50 >40 mg/l Nominal Fresh water	21 days	Mobility	Based on Naphtha (petroleum), light alkylate
	Fish	Chronic EL50 10 mg/l Nominal Fresh water	21 days	Reproduction	Based on: Naphtha (petroleum), light alkylate; read across between species
	Fish	Chronic LL50 5.2 mg/l Nominal	14 days	Mortality	Based on Naphtha

		Fresh water			(petroleum), light catalytic reformed
	Daphnia	Chronic NOELR 2.6 mg/l Nominal Fresh water	21 days	Reproduction	Based on Naphtha (petroleum), light alkylate
	Daphnia	Chronic NOELR 16 mg/l Nominal Fresh water	21 days	Mobility	Based on Naphtha (petroleum), light alkylate
	Fish	Chronic NOELR 2.6 mg/l Nominal Fresh water	14 days	Mortality	Based on Naphtha (petroleum), light catalytic reformed
	Fish	Chronic NOELR 2.6 mg/l Nominal Fresh water	21 days	Reproduction	Based on: Naphtha (petroleum), light alkylate; read across between species
	soil, plants	Chronic PNEC >0.4 mg/kg	-	-	-
Ethanol	Algae	EC50 675 mg/l	4 days	-	Based on Ethanol
	Aquatic plants	EC50 4432 mg/l	7 days	-	Based on Ethanol
	Daphnia	Acute LC50 5012 mg/l	48 hours	-	Based on Ethanol
	Fish	Acute LC50 153 g/l	96 hours	-	Based on Ethanol
	Fish	Acute LC50 14.2 g/l	96 hours	-	Based on Ethanol
	Daphnia	Chronic LC50 2 mg/l	10 days	-	Based on Ethanol
	Daphnia	Chronic LC50 9.6 mg/l	9 days	-	Based on Ethanol

Conclusion/Summary Toxic to aquatic life with long lasting effects.

Persistence and degradability

Expected to be biodegradable.

Product/ingredient name	Test	Result	Remarks
Ethanol	EPA	95 % - Readily - 15 days	Based on Ethanol
	EPA	84 % - Readily - 20 days	Based on Ethanol
	EPA	74 % - Readily - 5 days	Based on Ethanol
	EPA	74 % - Readily - 10 days	Based on Ethanol

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Petrol	-	-	Inherent

Section 12. Ecological information

Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Petrol	2 to 7	-	high
Benzene	2.13	11	low
diisopropyl ether	2.4	-	low
Ethanol	-0.35	-	low

Mobility in soil

Mobility	Spillages may penetrate the soil causing ground water contamination.
Soil/water partition coefficient (K_{OC})	Not available.
Other adverse effects	No known significant effects or critical hazards.
Other ecological information	Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

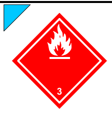
Section 13. Disposal considerations

Disposal methods	The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
New Zealand Class	UN1203	MOTOR SPIRIT or GASOLINE or PETROL. Marine pollutant	3	II	 	The marine pollutant mark is not required when transported by road or rail. **Hazchem code** 3YE
ADG Class	UN1203	MOTOR SPIRIT or GASOLINE or PETROL	3	II		**Hazchem code** 3YE **Initial emergency response guide** 14
IATA Class	UN1203	MOTOR SPIRIT or GASOLINE or PETROL	3	II		The environmentally hazardous substance mark may appear if required by other transportation regulations.

Section 14. Transport information

IMDG Class	UN1203	MOTOR SPIRIT or GASOLINE or PETROL. Marine pollutant	3	II	 	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules** F-E, S-E

PG* : Packing group

Section 15. Regulatory information

New Zealand Regulatory Information

HSNO Approval Number	HRC000003
HSNO Group Standard	Petrol (unleaded)
HSNO Classification	FLAMMABLE LIQUIDS - Category 1 GERM CELL MUTAGENICITY - Category 1 CARCINOGENICITY - Category 2 REPRODUCTIVE TOXICITY - Category 1 ASPIRATION HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2

Regulation according to other foreign laws

REACH Status	For the REACH status of this product please consult your company contact, as identified in Section 1.
United States inventory (TSCA 8b)	Not determined.
Australia inventory (AIIC)	Contact local supplier or distributor.
Canada inventory status	Not determined.
China inventory (IECSC)	Not determined.
Japan inventory (CSCL)	Not determined.
Korea inventory (KECI)	At least one component is not listed.
Philippines inventory (PICCS)	Not determined.
Taiwan Chemical Substances Inventory (TCSI)	Not determined.

Section 16. Other information

History

Date of issue/Date of revision	16 February 2024
Date of previous issue	15 May 2020.
Version	3
Prepared by	Not available.
Key to abbreviations	Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

Notice to reader

Indicates information that has changed from previously issued version.

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The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP

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