

SAFETY DATA SHEET

Regular Unleaded petrol with 10% ethanol



Section 1. Identification

GHS product identifier	Regular Unleaded petrol with 10% ethanol
Other means of identification	E10, E10M
Product code	0000002889
SDS no.	0000002889
<u>Relevant identified uses of the substance or mixture and uses advised against</u>	
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.
Manufacturer	
Supplier	BP Australia Pty Ltd Level 17, 717 Bourke Street Docklands, Victoria 3008 ABN 53 004 085 616 www.bp.com.au Technical Helpline Number: 1300 139 700
EMERGENCY TELEPHONE NUMBER	1800 638 556

Section 2. Hazard(s) identification

Classification of the substance or mixture	 FLAMMABLE LIQUIDS - Category 1 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A GERM CELL MUTAGENICITY - Category 1B CARCINOGENICITY - Category 1B REPRODUCTIVE TOXICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1
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GHS label elements

Hazard pictograms



Signal word

DANGER

Hazard statements

 H224 - Extremely 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.

Precautionary statements

General

 P102 - Keep out of reach of children.
P101 - If medical advice is needed, have product container or label at hand.

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Section 2. Hazard(s) identification

Prevention

P261 - Avoid breathing vapour.
P202 - Do not handle until all safety precautions have been read and understood.
P201 - Obtain special instructions before use.
P280 - Wear protective gloves.
P280 - Wear eye or face protection.
P280 - Wear protective clothing.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.
P273 - Avoid release to the environment.

Response

P308 + P313 - IF exposed or concerned: Get medical attention.
P304 + P340, P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.
P301 + P310, P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
P332 + P313 - If skin irritation occurs: Get medical attention.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical attention.

Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
P235 - Keep cool.
P405 - Store locked up.

Disposal

P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

Not applicable.

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 and ingredient information

Substance/mixture

Mixture

A complex mixture of volatile hydrocarbons containing paraffins, naphthenes, olefins and aromatics with carbon numbers predominantly between C4 and C12. May contain oxygenates.

Ingredient name	% (w/w)	CAS number
Gasoline	≥90	86290-81-5
Ethanol	≤10	64-17-5
Benzene	≤1	71-43-2
tert-butyl methyl ether	≤1	1634-04-4
diisopropyl ether	≤1	108-20-3
Polycyclic aromatic hydrocarbons (PAHs)	≤1	-

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 and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

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

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Section 4. First aid measures

Description of necessary first aid measures

Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	If inhaled, remove to fresh air. Get medical attention. If exposure to vapour, mists or fumes causes drowsiness, headache, blurred vision or irritation of the eyes, nose or throat, remove immediately to fresh air. Keep patient warm and at rest. If any symptoms persist obtain medical advice.
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. If skin irritation or rash occurs: Get medical advice/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.

Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

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.
Specific treatments	No specific treatment.
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 extinguishing media	In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray.
Unsuitable extinguishing media	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. 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.

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Section 5. Firefighting measures

	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 thermal decomposition products	Combustion products may include the following: carbon oxides (CO, CO ₂) (carbon monoxide, carbon dioxide)
Special protective actions 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.
Hazchem code	3YE

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling. Eliminate all ignition sources.
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 spilled 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. 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.
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 spilled product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive

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Section 6. Accidental release measures

atmospheres. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

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.

Do not fill container while it is in or on a vehicle. Place container on ground when filling and keep nozzle in contact with container.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. Contaminated work clothing should not be allowed out of the workplace. See also Section 8 for additional information on hygiene measures.

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

Section 7. Handling and storage

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 and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Gasoline	ACGIH TLV (United States). TWA: 300 ppm 8 hours. Issued/Revised: 5/1996 TWA: 890 mg/m ³ 8 hours. Issued/Revised: 5/1996 STEL: 500 ppm 15 minutes. Issued/Revised: 5/1996 STEL: 1480 mg/m ³ 15 minutes. Issued/Revised: 5/1996
Ethanol	Safe Work Australia (Australia). TWA: 1880 mg/m ³ 8 hours. Issued/Revised: 5/1995 TWA: 1000 ppm 8 hours. Issued/Revised: 5/1995
Benzene	Safe Work Australia (Australia). TWA: 3.2 mg/m ³ 8 hours. Issued/Revised: 4/2013 TWA: 1 ppm 8 hours. Issued/Revised: 4/2013
tert-butyl methyl ether	Safe Work Australia (Australia). STEL: 275 mg/m ³ 15 minutes. Issued/Revised: 4/2002 STEL: 75 ppm 15 minutes. Issued/Revised: 4/2002 TWA: 92 mg/m ³ 8 hours. Issued/Revised: 4/2002 TWA: 25 ppm 8 hours. Issued/Revised: 4/2002
diisopropyl ether	Safe Work Australia (Australia). STEL: 1300 mg/m ³ 15 minutes. Issued/Revised: 5/1995 STEL: 310 ppm 15 minutes. Issued/Revised: 5/1995 TWA: 1040 mg/m ³ 8 hours. Issued/Revised: 5/1995 TWA: 250 ppm 8 hours. Issued/Revised: 5/1995
Polycyclic aromatic hydrocarbons (PAHs)	Safe Work Australia (Australia). TWA: 0.2 mg/m ³ 8 hours.

Biological exposure indices

No exposure indices known.

Section 8. Exposure controls and personal protection

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.

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/face protection

Chemical splash goggles.

Skin protection

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.

Recommended: Gloves made from fluoroelastomer resistant to hydrocarbons and a wide range of chemicals. Nitrile gloves.

Skin protection

Use of protective clothing is good industrial practice.

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

Wear suitable protective clothing.

Footwear highly resistant to chemicals.

When there is a risk of ignition wear inherently fire resistant protective clothes and gloves.

When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static.

When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required.

Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal clothes.

Section 8. Exposure controls and personal protection

Other 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

Use with adequate ventilation.

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.

Recommended: If ventilation is inadequate, use respirator that will protect against organic vapour and dust/mist.

Refer to standards:

Respiratory protection:AS/NZS 1715 and AS/NZS 1716

Gloves:AS/NZS 2161.1

Eye protection:AS/NZS 1336 and AS/NZS 1337

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. Clear and Bright

Colour

Pale Yellow.to Orange/Red.

Odour

Hydrocarbon. [Strong]

Odour threshold

Not available.

pH

Not applicable.

Melting point

Not available.

Boiling point, initial boiling point, and boiling range

30 to 210°C (86 to 410°F)

Flash point

Closed cup: <-40°C (<-40°F) [Pensky-Martens]

Evaporation rate

Not available.

Flammability

Extremely flammable liquid and vapour.

Lower and upper explosion limit/flammability limit

Lower: 1.4%

Upper: 7.6%

Vapour pressure

30.1 to 100.3 kPa (225.6 to 752 mm Hg)

Relative vapour density

1 [Air = 1]

Relative density

1

Density

710 to 750 kg/m³ (0.71 to 0.75 g/cm³)

Solubility(ies)

Media

Water

Result

Very slightly soluble

Solubility in water

Not available.

Miscible with water

No.

Partition coefficient: n-octanol/water

Not applicable.

Auto-ignition temperature

>350°C (>662°F)

Decomposition temperature

Not available.

Viscosity

Kinematic: 0.4 to 0.55 mm²/s (0.4 to 0.55 cSt) at 40°C

Remarks

Reid vapor pressure (RVP): 55 to 100 kPa (40 °C)

Particle characteristics

Median particle size

Not applicable.

Section 10. Stability and reactivity

Reactivity	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
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 toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
 Gasoline	LC50 Inhalation Vapour	Rat	>7630 mg/m ³ Nominal	4 hours
	LC50 Inhalation Vapour	Rat	>5610 mg/m ³ analytical	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
Ethanol	LC50 Inhalation Vapour	Rat	124.7 mg/l	4 hours
	LC50 Inhalation Vapour	Rat	116.9 mg/l	4 hours
	LC50 Inhalation Vapour	Rat	133.8 mg/l	4 hours
	LD50 Oral	Rat	10470 mg/kg	-
tert-butyl methyl ether	LC50 Inhalation Vapour	Rat	85 mg/l	4 hours
	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
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	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
 Gasoline	Eyes - Non-irritating to the eyes.	Rabbit	-	-	-
	Skin - Irritant	Rabbit	-	-	-
Ethanol	Eyes - Cornea opacity	Rabbit	-	-	-
	Eyes - Iris lesion	Rabbit	-	-	-
	Eyes - Irritant	Rabbit	-	-	-
	Skin - Non-irritant to skin.	Rabbit	-	-	-
tert-butyl methyl ether	Eyes - Non-irritating to the eyes.	Rabbit	-	-	-
	Skin - Irritation	Rabbit	-	-	-

Skin

Causes skin irritation.

Sensitisation

Product/ingredient name	Route of exposure	Species	Result
 Gasoline	skin	Guinea pig	Not sensitising
Ethanol	skin	Mouse	Not sensitising
	skin	Mouse	Not sensitising
tert-butyl methyl ether	skin	Guinea pig	Not sensitising

Mutagenicity

Product/ingredient name	Test	Experiment	Result
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Gasoline	Equivalent to OECD 476	Experiment: In vitro	Negative
		Subject: Mammal - species unspecified	
	Equivalent to OECD 471	Experiment: In vitro	Negative
		Subject: Non-mammalian species	
	EPA OPPTS 870.5395	Experiment: In vivo	Negative
		Subject: Unspecified	
		Cell: Germ	
	Equivalent to OECD 475	Experiment: In vivo	Negative
Ethanol		Subject: Unspecified	
		Cell: Germ	
	Equivalent to OECD 476	Experiment: In vitro	Negative
		Subject: Mammal - species unspecified	
	Equivalent to OECD 473	Experiment: In vitro	Negative
		Subject: Non-mammalian species	
	Equivalent to OECD 478	Experiment: In vivo	Negative
		Subject: Unspecified	
tert-butyl methyl ether	EU B 13/14	Experiment: In vitro	Negative
		Subject: Non-mammalian species	
	OECD 471	Experiment: In vitro	Negative
		Subject: Non-mammalian species	
	OECD 476	Experiment: In vitro	Negative
		Subject: Non-mammalian species	
	Equivalent to OECD 473	Experiment: In vitro	Negative
		Subject: Non-mammalian species	
	Equivalent to OECD 486	Experiment: In vivo	Negative
		Subject: Non-mammalian species	
		Subject: Unspecified	
		Cell: Somatic	
	Equivalent to EPA OPPTS 870.5385	Experiment: In vivo	Negative
		Subject: Unspecified	
		Cell: Somatic	
	Equivalent to EPA OPPTS 798.5385	Experiment: In vivo	Negative
		Subject: Unspecified	
		Cell: Somatic	

Conclusion/Summary

May cause genetic defects.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Gasoline	Negative - Dermal - Unspecified	Mouse	-	102 weeks
	Negative - Inhalation - Unspecified	Rat	-	113 weeks
Ethanol	Negative - Oral - Unspecified	Rat	-	104 weeks
	Positive - Oral - Unspecified	Mouse	-	105 weeks
tert-butyl methyl ether	Positive - Inhalation - Unspecified	Rat	-	2 years

Conclusion/Summary

May cause cancer

Reproductive toxicity

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Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure
Gasoline	-	-	Negative	Rat	Inhalation	14 days
	-	Negative	-	Rat	Inhalation	2 generation
Ethanol	-	-	Negative	Rat	Inhalation	18 days
	-	Positive	-	Rat	Oral	2 generation
tert-butyl methyl ether	-	Negative	-	Rat	Inhalation	2 generation
	-	-	Negative	Rat	Inhalation	9 days

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Gasoline	Category 3	-	Narcotic effects
Benzene	Category 3	-	Respiratory tract irritation
diisopropyl ether	Category 3	-	Narcotic effects
	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Benzene	Category 1	-	blood system

Aspiration hazard

Name	Result
Gasoline	ASPIRATION HAZARD - Category 1

Information on likely routes of exposure

Routes of entry anticipated: Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact	Causes serious eye irritation.
Inhalation	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
Skin contact	Causes skin irritation.
Ingestion	Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness

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Skin contact Adverse symptoms may include the following:
irritation
redness
reduced foetal weight
increase in foetal deaths
skeletal malformations

Ingestion Adverse symptoms may include the following:
nausea or vomiting
reduced foetal weight
increase in foetal deaths
skeletal malformations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

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.

Inhalation Vapour, mist or fume may irritate the nose, mouth and respiratory tract.

Skin contact Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Ingestion If swallowed, may irritate the mouth, throat and digestive system. If swallowed, may cause abdominal pain, stomach cramps, nausea, vomiting, diarrhoea, dizziness and drowsiness.

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

Carcinogenicity May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity May cause genetic defects.

Teratogenicity Suspected of damaging the unborn child.

Developmental effects No known significant effects or critical hazards.

Fertility effects No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Inhalation (vapours)	1100 mg/l

Other information

 Gasoline - 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

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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, 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: Additional toxicity information on components.

Overexposure to n-hexane may cause progressive and potentially irreversible damage to the peripheral nervous system, particularly in the arms and legs. Studies in occupationally exposed individuals indicate that toluene exposure has been associated with impaired color vision and decreased performance in some neurobehavioral tests.

Prolonged high level exposure to toluene or xylene has caused some degree of hearing loss in experimental animals.

Inhalation of very high concentrations of gasoline vapors and some of its components can result in cardiac sensitization and irregular heartbeats, leading to potentially fatal changes in heart rhythms. Injection of adrenaline-like agents may enhance this effect.

Benzene: Acute toxicity of benzene results primarily from depression of the central nervous system (CNS). Inhalation of concentrations over 50 ppm can produce headache, lassitude, weariness, dizziness, drowsiness, or excitation. Exposure to very high levels can result in unconsciousness and death.

Benzene: Long-term overexposure to benzene has been associated with certain types of leukemia in humans. In addition, the International Agency for Research on Cancer (IARC), the National Toxicology Program, and OSHA consider benzene to be a human carcinogen. Chronic exposures to high levels of benzene have been reported to cause adverse blood effects including anemia. Benzene exposure can occur by inhalation and absorption through the skin.

Inhalation and forced feeding studies of benzene in laboratory animals have produced a carcinogenic response in a variety of organs, including possibly leukemia, other adverse effects on the blood, chromosomal changes and some effects on the immune system. Exposure to benzene at levels up to 300 ppm did not produce birth defects in animal studies; however, exposure to higher dosage levels resulted in a reduction of body weight of the rat pups (fetotoxicity). Changes in the testes have been observed in mice exposed to benzene at 300 ppm, but reproductive performance was not altered in rats exposed to benzene at the same level. 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 material.

Ethanol - Human data: In humans excessive consumption of alcoholic beverages during pregnancy is associated with the induction of Fetal Alcohol Syndrome in the offspring. Reduced birth weight and physical and mental defects occur. There is no evidence that such effects might be caused by exposures other than direct ingestion

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of alcoholic drinks. In humans high lifetime consumption of alcoholic beverages can be associated with certain cancers and effects on the liver. There is no evidence that these can be caused by exposure other than direct ingestion of alcoholic drinks (IARC 1988).

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Gasoline	Acute EC50 15.41 mg/l Nominal Fresh water	Micro-organism	40 hours
	Acute EL50 3.1 mg/l Nominal Fresh water	Algae	72 hours
	Acute EL50 3.7 mg/l Nominal Fresh water	Algae	96 hours
	Acute EL50 4.5 mg/l Nominal Fresh water	Daphnia	48 hours
	Acute LL50 10 mg/l Nominal Fresh water	Fish	96 hours
	Acute LL50 8.2 mg/l Nominal Fresh water	Fish	96 hours
	Acute NOELR 0.5 mg/l Nominal Fresh water	Algae	72 hours
	Acute NOELR 0.5 mg/l Nominal Fresh water	Daphnia	48 hours
	Chronic EL50 10 mg/l Nominal Fresh water	Daphnia	21 days
	Chronic EL50 >40 mg/l Nominal Fresh water	Daphnia	21 days
	Chronic EL50 10 mg/l Nominal Fresh water	Fish	21 days
	Chronic LL50 5.2 mg/l Nominal Fresh water	Fish	14 days
	Chronic NOELR 2.6 mg/l Nominal Fresh water	Daphnia	21 days
	Chronic NOELR 16 mg/l Nominal Fresh water	Daphnia	21 days
	Chronic NOELR 2.6 mg/l Nominal Fresh water	Fish	14 days
	Chronic NOELR 2.6 mg/l Nominal Fresh water	Fish	21 days
	Chronic PNEC >0.4 mg/kg	soil, plants	-
	EC50 675 mg/l	Algae	4 days
	EC50 4432 mg/l	Aquatic plants	7 days
	Acute LC50 5012 mg/l Fresh water	Daphnia	48 hours
	Acute LC50 15.3 g/l Fresh water	Fish	96 hours
	Acute LC50 14.2 g/l Fresh water	Fish	96 hours
Ethanol	Chronic LC50 2 mg/l	Daphnia	10 days
	Chronic LC50 9.6 mg/l	Daphnia	9 days
tert-butyl methyl ether	Acute EC50 472 mg/l Fresh water	Daphnia	48 hours
	Acute LC50 200 mg/l Marine water	Crustaceans	96 hours
	Acute LC50 672 mg/l Fresh water	Fish	96 hours
	Acute LC50 574 mg/l Marine water	Fish	96 hours
	Chronic NOEC 26 mg/l Marine water	Crustaceans	28 days
	Chronic NOEC 51 mg/l Fresh water	Daphnia	21 days

Conclusion/Summary

Toxic to aquatic life with long lasting effects.

Persistence and degradability

The biodegradability of this material has not been determined.

Product/ingredient name	Test	Result	Dose	Inoculum
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Ethanol	EPA	95 % - Readily - 15 days	-	-
	EPA	84 % - Readily - 20 days	-	-
	EPA	74 % - Readily - 5 days	-	-
	EPA	74 % - Readily - 10 days	-	-
tert-butyl methyl ether	not guideline	100 % - 1.25 days	-	-
	Modelled data	61 to 69 % - 151 days	-	-
	OECD 301 D	9.24 % - Not readily - 28 days	-	-
	OECD 301 D	1.8 % - Not readily - 28 days	-	-
	OECD 301 D	0 % - Not readily - 28 days	-	-
	Modelled data	0 % - 250 days	-	-

Conclusion/Summary Partially biodegradable.

Bioaccumulative potential

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

Product/ingredient name	LogP _{ow}	BCF	Potential
Gasoline	2 to 7	-	High
Ethanol	-0.35	-	Low
Benzene	2.13	11	Low
tert-butyl methyl ether	1.04	1.5	Low
diisopropyl ether	2.4	-	Low

Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available.

Mobility Spillages may penetrate the soil causing ground water contamination.

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.
Special Precautions for Landfill or Incineration	No additional special precautions identified.

Section 14. Transport information

Product name	Regular Unleaded petrol with 10% ethanol	Product code	0000002889	Page: 15/18
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Section 14. Transport information

	ADG	IMDG	IATA
UN number	UN1203	UN1203	UN1203
UN proper shipping name	MOTOR SPIRIT or GASOLINE or PETROL	GASOLINE or MOTOR SPIRIT. Marine pollutant	MOTOR SPIRIT or GASOLINE or PETROL
Transport hazard class(es)	3 	3  	3 
Packing group	II	II	II
Environmental hazards	No.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Additional information	Hazchem code 3YE Initial emergency response guide 14	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. Emergency schedules F-E, S-E	The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user Not available.

Transport in bulk according to IMO instruments

Proper shipping name

MARPOL Annex 1 rules apply for bulk shipments by sea.
Category: gasoline and spirits

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

 Not scheduled - When packed in containers having capacity of greater than 20 litres.

S5 - When packed in containers having capacity of less than 20 litres.

Consumer products - This material is a scheduled poison and must be stored, maintained and used in accordance with the relevant regulations.

Industrial Products - Labelling requirements for SUSMP do not apply to a poison that is packed and sold solely for industrial, laboratory or manufacturing use. However, this product is labelled in accordance with NOSHC National Code of Practice for labelling of workplace substances.

Model Work Health and Safety Regulations - Scheduled Substances

<u>Ingredient name</u>	<u>Schedule</u>
 Benzene	Restricted carcinogen [All uses involving benzene as a feedstock containing more than 50% of benzene by volume; Restricted use - Genuine research or analysis; For spray painting if the substance contains more than 1% by volume]

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

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Section 15. Regulatory information

Not listed.

International lists

National inventory

REACH Status

For the REACH status of this product please consult your company contact, as identified in Section 1.

Australia inventory (AIC)

All components are listed or exempted.

Canada inventory

All components are listed or exempted.

China inventory (IECSC)

At least one component is not listed.

Japan inventory (CSCL)

Not determined.

Korea inventory (KECI)

Not determined.

Philippines inventory (PICCS)

Not determined.

Taiwan Chemical Substances Inventory (TCSI)

Not determined.

United States inventory (TSCA 8b)

At least one component is not listed.

Section 16. Any other relevant information

History

Date of printing 1/11/2025

Date of issue/Date of revision 1/11/2025

Date of previous issue 1/23/2020

Version 3

Prepared by Product Stewardship

Key to abbreviations

ADG = Australian Dangerous Goods

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

NOHSC = National Occupational Health and Safety Commission

REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]

STEL = Short term exposure limit

SUSMP = Standard Uniform Schedule of Medicine and Poisons

UN = United Nations

TWA = Time weighted average

VOC = Volatile Organic Compound

SADT = Self-Accelerating Decomposition Temperature

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

Procedure used to derive the classification

Product name Regular Unleaded petrol with 10% ethanol

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Section 16. Any other relevant information

Classification	Justification
FLAMMABLE LIQUIDS - Category 1 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A GERM CELL MUTAGENICITY - Category 1B CARCINOGENICITY - Category 1B REPRODUCTIVE TOXICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1	On basis of test data Calculation method Calculation method Expert judgment Expert judgment Calculation method Calculation method Calculation method

Indicates information that has changed from previously issued version.

Notice to reader

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