

17 July 2026

Patersons Limited
Attn: Duncan White
19 Reece Crescent
Wānaka 9305

Dear Duncan,

Hazardous Substances Consultancy – Mount Iron Junction, 237 Wānaka-Luggate Highway, Wānaka

(Our Reference: 31636.000.001_01)

1 Introduction

ENGEO Ltd was requested by Patersons Limited to provide consultancy services with respect to hazardous substances for the proposed development at Mount Iron Junction, 237 Wānaka-Luggate Highway, Wānaka. This work has been carried out in accordance with our signed agreement dated 13 July 2026.

The purpose of this assessment is to support Patersons Limited with their response to queries raised by the fast-track panel with respect to a consented petrol station on land located adjacent to the centre of the proposed Mount Iron Junction (MIJ) development.

We understand that the fast-track panel initially raised the following query in a minute dated 21 May 2026:

“While the Panel acknowledges that the consent [sic] petrol station is not part of the application before us, we would like to understand the relationship between this and the application area, especially in terms of the relevant amenity and hazard issues.”

And that the following query was raised in a minute dated 6 July following a response from the Applicant:

“The Applicant's response to potential health and safety effects relating to potential carcinogens used at the service station in relation to close proximity dwellings is appreciated. However as far as the Panel can ascertain this has not been provided by a suitably qualified person with expertise in air quality matters and this limits the reliance that can be placed on it.

At issue is whether or not there is a need to ensure the long-term safety of nearby building occupants such as by provision of mechanical ventilation and/or limitations on the placement of outdoor living spaces adjacent to the service station. The Panel continues to have no view on this matter but requests confirmation from a suitably qualified expert 8 [sic] in air quality and emissions that any relevant potential health effects have been identified and suitably mitigated.”

Our agreed scope of work is to provide an assessment of the risk to human health at the proposed housing development, as a result of the proposed petrol station from an environmental consultancy / hazardous substances management point of view. We do not claim to have specialist air quality expertise.

Even though the application is not subject to an Environment Court hearing, we confirm that we have read and agree to comply with the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2023.

The report we have prepared is within our area of expertise, except where we state that we are relying on material produced by another person. We have not omitted to consider material facts known to us that might alter or detract from the opinions expressed in this report.

2 Statement of Qualifications and Experience

Lotta Liddell (Author)

I am an Associate Environmental Engineer at ENGEO Limited (ENGEO). ENGEO is an international consultancy specialising in geotechnical and environmental services. I have been employed at ENGEO since 2022.

I hold the qualification of a Master of Engineering from Leeds University in the UK which I completed in 1995. I am a Chartered Engineer (CEng) through the Institution of Civil Engineers and a Chartered Environmentalist (CEnv) through the Society for the Environment, both in the UK. I am a full member of the Institution of Civil Engineers (UK).

I have over 30 years of consulting experience in environmental engineering working in New Zealand, the United Kingdom, Hong Kong and Ghana. My experience includes hazardous substances assessment and management, contaminated land investigation, assessment, management and remediation, industrial and trade activity assessments, landfill assessments and environmental due diligence reporting and audits. I have prepared hazardous substances and industrial and trade activity assessments for a large number of projects throughout New Zealand and for a wide variety of proposed site uses including service stations, several data centres, a major hazardous facility for large-scale storage of hazardous substances, food manufacturing facilities, transport depots and waste sites.

Jamie Rhodes (Reviewer)

I am a Principal Environmental Engineer at ENGEO Limited (ENGEO). I have been employed at ENGEO since 2018.

I hold the qualification of a Bachelor of Engineering (Environmental) from the University of Melbourne in Australia which I completed in 2005. I am a Certified Environmental Practitioner (Site Contamination) Specialist (CEnvP SC41161).

I have over 20 years of consulting experience in environmental engineering, specialising in contaminated land investigation, assessment, management and remediation. I have spent several years working on the assessment and management of underground petroleum storage systems in retail service stations in New Zealand. During this time I was also responsible for assessment and management of contaminated soils, groundwater, and vapours as a result of historical releases of fuel. I have previously submitted statements of evidence in both arbitration and environment court hearings, acting in my capacity as an expert on contamination matters and human health risk assessments.

3 Background

3.1 Information provided by Patersons Limited and Reviewed for This Assessment

The following:

- Email dated 7 July 2026 providing background to the project and the panel's queries.
- Conditions of Consent and Plans (relevant to the Caltex Service Station only) from Resource Consent RM181471 extracted from the Decision dated 19 April 2021.
- Proposed Hazardous Area Plan for the Caltex service station prepared by SHA Architecture dated March 2019.
- Building Setback Drawings – Layout 120 – 125 prepared by Patersons Land Professionals Limited dated February 2026.

3.2 Proposed MIJ Development

We understand that MIJ has lodged a substantive fast-track application for the establishment of a medium and high-density residential neighbourhood at 237 Wānaka–Luggate Highway, Wānaka. We understand that the MIJ development will comprise:

- Two hundred and fifty (250) residential units of varying residential typologies including medium density residential (terrace housing, walk-up apartments and dual-key units) and high density residential (apartment buildings). Thirteen (13) residential sites within the development are to be provided to the Queenstown Lakes Community Housing Trust (QLCHT) under an agreement between MIJ and QLCHT.
- A childcare centre.
- A café and small-format grocery market.
- Two publicly accessible and vested reserves with recreational infrastructure.
- Internal roading, pedestrian and cycle connections, and landscaping.

The MIJ Masterplan is shown in Figure 1.



Figure 1: Mt Iron Junction Masterplan (provided by Patersons Limited)

Based on the drawings provided by Patersons Limited we consider the closest sensitive receptors to the petrol station to be:

- The residents of the closest houses i.e. the Type C buildings (3 bedrooms with a garage) shown orange on Figure 1.
- The Childcare Centre shown white (to the north of the service station) on Figure 1.

The playground and open space to the west is considered to be less sensitive as this area will be used for a short duration (likely no more than one to two hours, two to three times per week).

3.3 Consented Caltex Service Station

We understand that there is an existing consent for a new Caltex service station on land near the middle of the proposed MIJ residential neighbourhood (the white area in Figure 1) and that, whilst the service station has not yet been constructed, this is still planned to go ahead. We understand from the information referenced in Section 3.1 that the hazardous substances to be stored at the petrol station comprise:

- 75,000 L of 91 octane petrol in an underground storage tank to the northeast of the forecourt.
- 30,000 L of 95 octane petrol in a split underground storage tank to the northeast of the forecourt.
- 45,000 L of diesel in a split underground storage tank to the northeast of the forecourt.
- LPG (volume as yet unconfirmed) in an underground storage tank in the eastern part of the site.
- LPG (total volume as yet unconfirmed but likely in 9 kg bottles) in swap and go cages located in the southern part of the site.

The proposed layout for the Caltex service station is shown in Figure 2. Safety Data Sheets (SDS) for the substances stored at the site are included in Attachment 1.

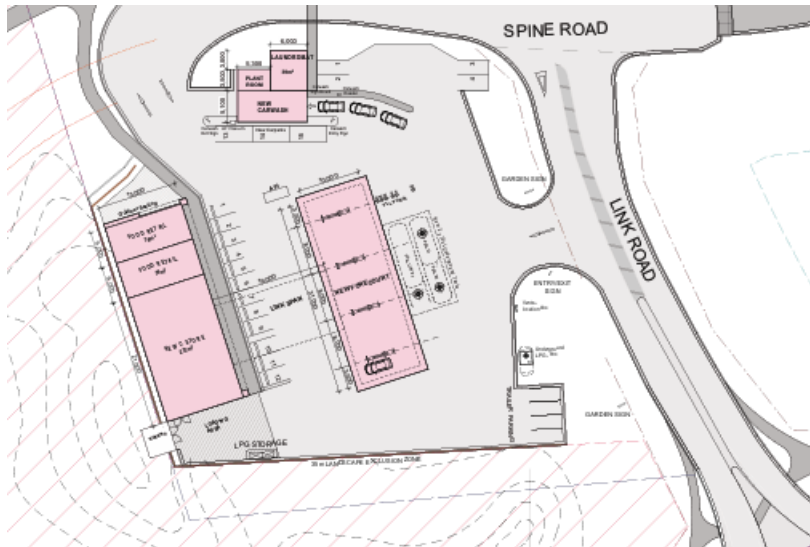


Figure 2: Proposed Caltex Service Station Layout (extracted from Drawing 102 rev L prepared by SHA Architecture Limited dated December 2020)

4 Regulations and Guidance that Applies to the Service Station

4.1 Relevant Regulations and Guidance

The management of hazardous substances in New Zealand is governed by:

- Hazardous Substances and New Organisms Act 1996 (HSNO Act)
- Health and Safety at Work (Hazardous Substances) Regulations 2017 (HSW(HS)R)

Under the previous hazardous substances management regime¹ the Environmental Protection Authority published the following documents relating to petroleum:

- HSNOCOP44: Below Ground stationary container systems for petroleum – design and installations, June 2013.
- HSNOCOP 45: Below ground stationary container systems for petroleum – operation, May 2012.

¹ The management of hazardous substances in New Zealand was, prior to 2017, governed primarily by the Hazardous Substances and New Organisms Act 1996 (HSNO Act), which was designed to protect the environment and the health and safety of people and communities from the adverse effects of hazardous substances. The Hazardous Substances and New Organisms Amendment Act 2015 split responsibilities for managing hazardous substances between the HSNO framework and the Health and Safety at Work Act 2015 (HSWA). This change took effect on 1 December 2017, when the Health and Safety at Work (Hazardous Substances) Regulations 2017 came into force.

Whilst not approved codes of practice under the Health and Safety at Work Act 2015 (HSWA) these documents are still referenced by WorkSafe New Zealand in the absence of specific HSWA guidance, as providing useful guidance in how to meet responsibilities under the Health and Safety at Work (Hazardous Substances) Regulations 2017.

4.2 Controls Required by Regulations

4.2.1 Generic Controls

We assume that the service station will be managed in accordance with the HSW(HS)R and hence that the following controls will be implemented:

- A hazardous substances inventory is prepared and kept up to date for the site.
- A safety data sheet (SDS) for all substances listed on the inventory is available on-site.
- Workers are provided with adequate Training and Supervision.
- Hazardous substances will be stored in appropriate containers with the required signage.
- The site will have an emergency response plan which will include details of how neighbours will be notified if an incident occurs.
- Appropriate fire extinguishers will be installed and maintained at the site in locations such that they are easily visible and accessible from locations where hazardous substances are present.
- Appropriate signage will be installed.
- All tanks will be double skinned to ensure appropriate secondary containment.
- All required certificates (location compliance certificates, stationary container system certificates) will be obtained.

4.2.2 Hazardous Areas

Under the HSW(HS)R, a 'hazardous area' is defined as '*an area in which an explosive gas atmosphere is or may be expected to be present in such quantities as to require special precautions for the construction, installation, and use of equipment*' i.e. it is an area in which flammable vapours may be present, as a result of the hazardous substances stored and hence special precautions are required to prevent ignition. Ignition sources should be kept out of hazardous areas and, if electrical equipment must be present in these areas, it must be intrinsically safe. If required, hazardous areas must be established in accordance with AS/NZS 60079.10.1:2009 or a relevant safe work instrument that specifies hazardous areas and takes into account the risk of the presence of flammable materials.

A Proposed Hazardous Area Plan for the Caltex service station (Attachment 2) has been prepared by SHA Architecture. This plan is included as attachment 1 and shows that all the 'hazardous areas' (being those areas where gases may be present in normal operation) associated with the Caltex service station are contained within the service station site.

Whilst this plan does not guarantee that flammable vapour will never be present outside this zone, it does indicate that the concentration of flammable vapour outside the site boundary will be sufficiently dispersed/diluted such that it should not be sufficient to result in explosion or ignition.

4.2.3 Separation

Some substances are required to be separated from protected places² and public places³ by separation distances which depend on the hazard classification of the substance, the quantity of the substance at the site and the nature of the site. These separation distances apply for above ground tanks which have not been manufactured and design certified to the requirements of SwRI 95–03 for a 4-hour fire-rated tank.

As all the proposed tanks at the service station are underground tanks, these separation distances do not apply, however, the separation distance required for above ground tank can be used as a very conservative approach to identify how far effects from the hazardous substances in a tank may be considered unacceptable. The required separation distances have been calculated using WorkSafe NZ's Separation Distances Calculator and are summarised in Table 1. Output from the Separation Distances Calculator is included as Attachment 3.

Table 1: Separation Distances That Would be Required for Above Ground Tanks

Tank	Protected Place (m)	Public Place (m)
Diesel	4.8	NA
Petrol (91)	6.5	4.0
Petrol (95)	5.2	3.2
LPG	11	7
LPG - Above ground tank-fitting for a below ground tank	6	3

It is noted that the separation distances for the diesel and petrol tanks are all accommodated within the site boundary. For the LPG tank the separation distances for protected places for both an above ground tank and the above ground tank-fitting for a below ground tank extend outside the site boundary towards the east and south where no protected places are present. The separation distance for an above ground LPG tank extends outside the site boundary into the road corridor entrance to the development, however the required separation distance for the above ground tank-fitting for a below ground tank can be accommodated within the site boundary.

² A protected place is defined in the HSW(HS)R as:
includes

a dwelling, residential building, place of worship, public building, school or college, hospital, childcare facility, or theatre, or any building or open area in which persons are accustomed to assemble in large numbers, whether within or outside the property boundary of a place where a hazardous substance location is situated:

(ii) any factory, workshop, office, store, warehouse, shop, or building where persons are regularly employed, whether within or outside the property boundary of a place where a hazardous substance location is situated:

(iii) a ship lying at permanent berthing facilities:

(iv) a public railway; but

(b) does not include a small office or other small building associated with a place where storage, handling, use, manufacture, or disposal of a class 2, 3, 4, 5, 6, or 8 substance is a major function

³ A public place is defined in the HSW(HS)R as:

(a) means a place (other than private property or a protected place) that is open to, and frequented by, the public; and

(b) includes a public road

The distances from various points on the service station to the identified most sensitive receptors (refer Section 3.3) as measured off the plans listed in Section 3.1 are summarised in Table 2.

Table 2: Approximate Distances to Identified Sensitive Receptors

	Service Station Site Boundary	Closest Hazardous Area	Fuel Dispensers	Tank Vent Outlets
Closest Residential Property	24 m	> 50 m	> 60 m	>90 m
Childcare Centre	20 m	> 50 m	> 50 m	> 70 m

1 All distances are horizontal.

4.3 Assumed Other Controls

We assume the service station pipework and tanks will be designed, installed and operated in accordance with HSNOCOP44 and HSNOCOP45.

Of relevance to this report, HSNOCOP 44 requires that separate venting systems shall be provided for each stationary tank and that the vent outlets for the tanks storing petrol are at least 4 m above the ground and the fill connection. The vent outlets must also be located:

- 2 metres laterally from any opening to a building.
- 4 metres laterally from any chimney or flue outlet.
- 1.5 metres laterally from a location where vehicles may park.

The vent for a tank containing diesel need only terminate at a height and in a location that will prevent the ingress of foreign material.

5 Discussion

Based on the queries raised by the fast-track panel we understand that there are three main concerns:

- Effects on nearby residents as a result of potential air discharges associated with the service station.
- Potential health and safety effects relating to carcinogens used at the service station in relation to close proximity dwellings.
- Whether there is a need to ensure the long-term safety of nearby building occupants such as by provision of mechanical ventilation and / or limitations on the placement of outdoor living spaces adjacent to the service station.

5.1 Effects on Nearby Residents as a Result of Potential Air Discharges

It is possible that petrol or diesel vapour may be present within all hazard zones shown in the forecourt area in the Hazardous Areas Plan (Attachment 2), however, the two locations where it is most likely that there may be regular discharges of vapour are in the vicinity of the dispensers in the forecourt during refueling of vehicles and at the tank vent outlets, particularly during refilling of the tanks.

The greatest exposure to petrol or diesel vapour will likely occur to a person carrying out refuelling as they are standing close to the nozzle where vapours are released. The duration of this exposure will however be limited to a few minutes. Whilst it is likely that residents in nearby properties may choose to refuel their cars at the Caltex fuel station due to convenience, it is unlikely that they will increase their fuel use just because there is a fuel station nearby, and hence the risks to residents from this activity will be no greater than if they are filling up at other fuel stations.

Beyond the immediate forecourt area, exposure to fuel vapour is significantly less. Fuel vapour will be subject to dispersion which is strongly influenced by wind direction and ground contours. Wind at Wānaka is dominated by westerly and north-westerly flows⁴, which will likely result in vapours from the forecourt being preferentially directed away from the identified receptors. In periods of no wind, fuel vapours are likely to preferentially flow into low lying areas (also away from the identified receptors).

Because of the combination of dominant wind direction, ground elevations, and distances (>60 m) the likelihood of fuel vapours from the dispensers reaching the identified receptors is considered very low.

During bulk refilling of the underground storage tanks, vapour displaced from the tanks may be released via the vent pipes which are proposed to be located in the eastern part of the service station, close to the roundabout on the Wānaka-Luggate Highway i.e. as far from the residential properties and childcare centre as possible. The vent outlets are located at height and are down-wind from the receptors (based on the dominant wind direction) and at between 70 to 90 metres distance from the receptors. Based on this, it is considered highly unlikely that fuel vapours from the vents will regularly reach the identified receptors.

Based on the information provided above we consider that it is unlikely that significant risk to the residents will occur as a result of the presence of the service station. We also consider that due to the height of the vents, the short duration of time that one of the fuel dispensers is used for refuelling a vehicle and the separation of these activities from the sensitive receptors that it is unlikely that odours (associated with the service station) will be noted at the sensitive receptors other than very occasionally. We note that such odours are unlikely to be distinguishable from odours associated with exhaust fumes from vehicles using the Wānaka-Luggate Highway.

The LPG tank is not vented and thus regular discharges to air from this tank are unlikely to occur. If discharges were to occur it is again considered that the distance between the tank, and the identified sensitive receptors would make it unlikely that any impacts of such discharges would be noted at the sensitive receptors. We note that the operator would likely notice any significant discharge from this tank quickly as it would be a 'loss of product'. As such a loss will result in financial implications to the operator we would expect them to take urgent action to prevent it happening again.

⁴ The Climate and Weather of Otago, 2nd Edition. G.R Macara, 2015. NIWA. Retrieved online from <https://webstatic.niwa.co.nz/library/NIWAsts67.pdf>

5.2 Health and Safety Effects Relating to Carcinogens

Reference to the SDS for LPG indicates there are '*no known toxicological effects from this product*' and it is not classified as a carcinogen.

Both diesel and petrol are classified under the Globally Harmonized System of Classification and Labelling of Chemicals, 7th edition (GHS 7)⁵ as 'Carcinogenicity - Category 2' (HSNO Classification 6.7B) i.e. they are suspected of causing cancer. The SDS for Petrol clarifies that this suspected effect is via inhalation.

As discussed above, it is considered unlikely that significant concentrations of fuel vapours associated with the service station will be present at the identified receptors (the nearest residential property and the Childcare facility) due to dominant wind directions, ground elevations, general dispersion by wind and the distance between the sources of vapour at the service station and the nearest residential property or Childcare facility.

5.3 Discharges to Ground During the Life of the Service Station

It is possible that underground tanks or associated pipework could be damaged during the operation of the service station. Such damage could lead to discharges of products (diesel, petrol or LPG) to the ground. The likelihood of such discharges occurring is reduced by:

- The use of double-skinned tanks.
- Monitoring of the interstitial space (the space between the two tank skins) to detect leaks.
- Regular (usually weekly) reconciliation of the product volume in the tank and investigation of any significant 'loss'.

We understand from Patersons Limited that soils in the vicinity of the development are granular in nature. Should product escape from the underground system, there are systems in place to detect this, and remedial measures will be required to be implemented to prevent fuel that could present a risk from reaching identified receptors. .

5.4 Need for Mechanical Ventilation and/or Limitations on the Placement of Outdoor Living Spaces

Based on the discussions above we do not consider that mechanical ventilation or restrictions on the placement of outdoor living spaces are required as a result of the consented service station.

⁵ Adopted in New Zealand on 30 April 2021, to replace the former HSNO classification system.

6 Limitations

- i. We have prepared this report in accordance with the brief as provided. This report has been prepared for the use of our client, Patersons Limited, their professional advisers and the relevant Territorial Authorities in relation to the specified project brief described in this report. No liability is accepted for the use of any part of the report for any other purpose or by any other person or entity.
- ii. The assessments and recommendations in this report are based on the information provided by the client at the time of our engagement. If the processes, or the substances stored or used, at the site are changed, it may be necessary to update this assessment as such changes may affect the consent status of the site.
- iii. This Limitation should be read in conjunction with the Engineering NZ / ACENZ Standard Terms of Engagement.
- iv. This report is not to be reproduced either wholly or in part without our prior written permission.

We trust that this information meets your current requirements. Please do not hesitate to contact the undersigned on (09) 972 2205 if you require any further information.

Report prepared by



Lotta Liddell, CEng CEnv MICE

Associate Environmental Engineer

Report reviewed by



Jamie Rhodes, CEnvP (SC)

Principal Environmental Engineer

Attachment 1

Relevant Safety Data Sheets (SDS)

Date of issue: 14 October 2025
SDS Version No: 3

Safety Data Sheet Diesel

Classified as: Hazardous according to the EPA Hazardous Substances
(Hazard Classifications) Notice 2020.

Section 1: SUBSTANCE AND SUPPLIER DETAILS

Product Name: Diesel

Other Names: Caltex Diesel with Techron D, Diesel, Automotive Gas Oil, Marine Gas Oil, Wintermix.

Supplier: Z Energy 2015 Limited
3 Queens Wharf
Wellington
New Zealand

Phone: +64 4 472 0080

Local Contact: Phone – 0800 474 355
Email – cxservice@z.co.nz

Recommended Use: Fuel for diesel engines.

In Case of Emergency Contact:

CHEMCALL: 0800 CHEMCALL (243 622) 24 hours
International - +64 4 917 9888

Section 2: HAZARDS IDENTIFICATION

This product is classified as a Dangerous Good for Transport.

This product is classified as hazardous according to criteria in the EPA Hazardous Substances (Hazard Classifications) Notice 2020.

HSNO APPROVAL NUMBER: **HSR001441**

HSNO CLASSIFICATIONS: 3.1D – Combustible liquid
6.1E – Aspiration hazard
6.7B – Suspected carcinogen
9.1B – Ecotoxic in the aquatic environment, chronic

GHS Classification: Flammable liquid – Category 4
Carcinogenicity – Category 2
Aspiration hazard – Category 1
Hazardous to the aquatic environment, chronic – Category 2

Labelling Elements:

Hazard Statements:

H227 Combustible liquid.
H304 May be fatal if swallowed and enters airways.
H351 Suspected of causing cancer.
H411 Toxic to aquatic life with long lasting effects.

GHS Pictograms:



Signal Word: **DANGER**

PREVENTION STATEMENTS:

P102 – Keep out of reach of children.
P103 – Read carefully and follow all instructions.
P202 – Do not handle until all safety precautions have been read and understood.
P210 – Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
P273 – Avoid release to the environment.
P280 – Wear protective gloves, protective clothing, eye protection, face protection.

RESPONSE STATEMENTS:

P101 - If medical advice is needed, have product container or label at hand.
P301 + P331 – IF SWALLOWED: Do NOT induce vomiting.
P308 + P310 – If exposed or concerned: Immediately call a POISON CENTRE or doctor.
P370 + P378 - In case of fire: Use water spray, dry powder, foam, or carbon dioxide to extinguish.
P391 – Collect spillage.

STORAGE:

P403 – Store in a well-ventilated place.
P405 – Store locked up.

DISPOSAL:

P501 - In accordance with the EPA Hazardous Substances (Disposal) Notice 2017. Dispose of via an approved waste disposal contractor. Refer to Section 13 of the SDS.

Other information: This product is intended for use as a fuel in a closed system. If used for any other purpose, in open systems or as a spray, ignition and exposure risks will increase and a careful risk assessment should be carried out.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Mixture: A complex combination of hydrocarbons produced by the distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range C9 through C20, with an average of C15, and boiling in the range of 160°C to 400°C, with a flashpoint above 60°C. Very small amounts of performance enhancing additives may be included.
May include up to 5% biodiesel (CAS, 67784-80-9).

Main Component	CAS Number	Concentration (%wt)
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Diesel Fuel	68334-30-5	95 - 100%
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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.

Section 4: FIRST AID MEASURES

Workplace Facilities Required:	Eye wash and safety shower facilities should be provided in workplaces where there is a risk of significant exposure.
If Inhaled:	Remove to fresh air and keep at rest. Seek medical attention if symptoms persist.
In Contact with Eye:	Hold eyes open, flush continuously with water for at least 15 minutes. Seek medical attention if irritation develops and persists.
In Contact with Skin:	Wash skin with soap and plenty of water, while removing contaminated clothing and shoes. Wash contaminated clothing before re-use. Seek medical attention if skin irritation develops and persists.
If Swallowed:	DO NOT INDUCE VOMITING. Rinse mouth. Never give anything by mouth to an unconscious person. If unconscious, seek immediate medical attention. If vomiting occurs, keep head below hips to prevent aspiration to lungs.
Advice to Doctor:	Treat symptomatically. Aspiration of product into lungs following vomiting may cause fatal pulmonary oedema.

Section 5: FIRE FIGHTING MEASURES

Fire/Explosion Hazard:	Combustible liquid. Liquid can ignite leading to a flash fire, or an explosion in a confined space. May ignite on surfaces at temperatures above auto-ignition temperature. Vapour in the headspace of tanks and containers may ignite and explode at temperatures exceeding auto-ignition temperature, where vapour concentrations are within the flammability range. Keep away from hot surfaces, heat, sparks, and ignition sources. Hazchem Code: 3Z.
Suitable Extinguishing Media:	Use water spray or fog, carbon dioxide, dry powder, or foam. Sand or earth may be used on small fires. Do not use water jet.
Precautions in Connection with Fire:	The vapour is heavier than air, spreads along the ground and distant ignition is possible. Will float and may be reignited on surface water. Flammable vapours may be present even at temperatures below the flash point. Combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates and gases, including carbon monoxide and unidentified organic and inorganic compounds.
Advice for firefighters:	Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) operated in positive pressure mode and full protective clothing to prevent exposure to vapours or fumes. Water spray may be used to cool down heat-exposed containers. Fight fire from safe location. This product should be prevented from entering drains and watercourses. Keep adjacent drums and tanks cool by spraying with water from a safe location. If possible, remove them from the danger zone. If adequate cooling cannot be achieved, the area needs to be evacuated, and further firefighting and cooling

attempts should be carried out from a safe location.

Section 6: ACCIDENTAL RELEASE MEASURES

An emergency response plan meeting the requirements of Part 5 of the Health and Safety at Work (Hazardous Substances) Regulations 2017 is required when held in quantities greater than 1,000L.

Precautions:	Vapour can travel for considerable distances both above and below the ground surface. Underground services (drains, pipelines, cable ducts) can provide preferential flow paths. Clear area of all unprotected personnel. Keep unnecessary and unprotected personnel from entering area. Do not breathe fumes/vapour. Avoid contact with skin and eyes. Remove any readily combustible materials and all sources of ignition. Ventilate area. Do not release to the environment. If spill enters waterways, contact local council pollution hotline.
Suitable Protective Equipment:	Emergency responders must use personal protective equipment, including gloves, PVC jacket and trousers, knee length, chemical resistant safety boots, and safety glasses with side shields or safety goggles. Respiratory protection may be required if large amounts of vapour/fumes is present. Contaminated clothing may be a fire hazard and therefore should be soaked with water before being removed.
Spill or Leak Procedures.	Stop leak if safe to do so. Contain and absorb spill using inert, non-combustible, absorbent material such as sand, earth. Collect using clean, non-sparking tools and place in a waste container for disposal. Ensure waste container is properly labelled. Do not dispose into an interceptor. Maritime Spillages: Maritime spillages should be dealt with using a Shipboard Oil Pollution Emergency Plan (SOPEP), as required by MARPOL Annex 1 Regulation 26.
Waste Disposal Methods:	Dispose of as per Section 13.
Emergency preparation:	Ensure there is appropriate and adequate personal protective equipment, trained personnel and clean up materials for management of accidental release.

Section 7: HANDLING AND STORAGE

Precautions for Safe Handling:	Avoid naked flames, hot surfaces, heat, and ignition sources. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Avoid contact with skin and eyes. Do not breathe vapour/fumes. Use local exhaust ventilation if there is risk of inhalation of vapours, mists, or aerosols. Do not eat, drink, or smoke when using this product. When handling product in drums, safety footwear should be worn, and proper handling equipment should be used. If using pressurised equipment, take extra care to avoid injection under the skin. Only use in well-ventilated areas. Take precautionary measures against static discharges. Ensure all equipment is properly bonded. Cloth, paper, and other materials that are used to absorb spills present a fire hazard. Avoid their accumulation by disposing of them safely and immediately. Remove contaminated clothing and wash hands and face before entering eating areas.
Product Transfer:	Electrostatic charges may be generated during pumping. Ensure electrical continuity by bonding all equipment. Avoid splash filling. Wait 2 minutes after tank filling (for tanks such as those on road tanker vehicles) before opening hatches or manholes. Wait 30 minutes after tank filling (for large storage tanks) before

opening hatches or manholes. When filling tanks there is always a danger of static discharge leading to explosion. This is particularly hazardous when switch loading tanks.

Product transfer may give rise to light hydrocarbon vapour in the headspace of tanks. This vapour may explode if there is a source of ignition such as static discharge.

Partly filled containers present a greater hazard than those that are full, therefore handling, transfer and sampling activities need special care. Conditions, such as filling empty Filter Water Separator vessels, that lead to the formation of hydrocarbon mists are also particularly hazardous.

Storage: Keep out of reach of children. Store locked up. This product must never be stored in buildings occupied by people. Drums and small containers should be stored in well-ventilated areas, flameproof cabinets, or stores. Keep container tightly closed in a dry, well-ventilated place away from direct sunlight and other sources of heat or ignition.

Keep in a bunded area with a sealed (low permeability) floor, to provide containment against spillage. Stack drums to a height not exceeding 3 metres without the use of racking. Locate tanks away from heat and other sources of ignition. Seek specialist advice for the design, construction, and operation of bulk storage facilities.

Site Storage Requirements: Site Signage will be required when quantities exceed 1,000L. For incompatibilities refer to Section 10.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Workplace Exposure Standards NZ: Workplace Exposure Standards have been established for this product.

Diesel Fuel: TWA 100 mg/m³ (skin)

Diesel Particulate Matter (DPM) as elemental carbon: TWA 0.1 mg/m³

Diesel engine exhaust is a confirmed carcinogen.

Engineering Controls: Eyewash facilities and safety showers should be provided in the work area where there is a risk of exposure to eyes and skin. If use generates large quantities of vapour/fumes, use engineering controls such as local exhaust ventilation to ensure workers are not exposed to levels exceeding the exposure standards.

Personal Protective Equipment: Avoid contact with skin and eyes. Avoid breathing vapour/fumes.

Hand protection: Wear protective gloves that are resistant to the product, e.g., neoprene rubber, nitrile. Refer to Australian and New Zealand Standard AS/NZS 2161 for protective gloves.

Skin and body protection: Wear protective clothing such as cotton overalls buttoned and neck and wrist. When handling large quantities, a chemical resistant apron is recommended. Refer to Australian and New Zealand Standard AS/NZS 4501 for occupational protective clothing.

Eye protection: Use safety glasses with side shields or safety goggles to protect eyes. A face shield may also be used with safety glasses to prevent splashes to face. Refer to AS/NZS 1336 and 1337 for suitable eye and face protection.

Respiratory protection: Where there is inadequate ventilation and use results in exposure to vapour/fumes, use a respirator with a replaceable organic vapour filter. Refer to AS/NZS 1715 and AS/NZS 1716 for suitable respiratory protection.

Other information: PPE selected must be impervious to the substance. Do not eat, smoke, or drink where material is handled, processed, or stored. Wash hands carefully before eating, drinking, or smoking. Handle in accordance with safe industrial hygiene practices.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Description:	Liquid	Colour:	Pale yellow, clear, bright
Odour:	Characteristic oil odour	Odour Threshold:	Not available
pH (20°C):	Not applicable	Solubility (water, 20°C):	Negligible
Freezing/Melting point:	Not available	Boiling Point & Range:	180°C – 360°C
Flammability:	Combustible liquid	Flash Point:	>61°C
LEL/UEL:	1 – 6% v/v	Vapour Pressure (25°C):	< 0.54 mm Hg
Decomposition Temp:	Not available	Autoignition Temp:	230°C
Density (15°C):	820-850 kg/m ³	Vapour Density (20°C):	>1 (air = 1)
Partition Coefficient: n-octanol/water	Not available	Viscosity (at 40°C):	2.0 – 4.5 cSt
Particle Characteristics:	Not applicable		

Section 10: STABILITY AND REACTIVITY

Stability:	Stable under normal cool, dry storage conditions.
Reactivity:	Not reactive under normal conditions of storage and use.
Conditions to Avoid:	Heat, hot surfaces, ignition sources, sparks, flames.
Incompatibility:	Keep away from oxidising agents and combustible materials such as paper, cardboard, wood.
Hazardous Decomposition:	Thermal decomposition may release toxic fumes containing oxides of carbon.

Section 11: TOXICOLOGICAL INFORMATION

Acute Exposure

Acute Toxicity:	Not classified as acutely toxic. LD ₅₀ oral > 2,000 mg/kg. LD ₅₀ dermal > 2,000 mg/kg LC ₅₀ inhalation > 20 mg/L (vapour)
Inhalation:	Large quantities of vapour will displace oxygen and may cause drowsiness, dizziness.
Ingestion:	Ingestion of large quantities may cause nausea, vomiting, stomach pain, drowsiness, and dizziness. If vomiting occurs and is aspirated into lungs this may

be fatal.

Skin Corrosion/Irritation: Product is not classified as a skin irritant or corrosive. Prolonged or repeated skin contact may cause defatting of the skin and dermatitis. High pressure injection into the skin may cause local necrosis if the product is not surgically removed.

Serious Eye Damage/Eye Irritation: Product is not classified as an eye irritant or corrosive. Contact with eyes may cause redness, stinging, weeping.

Respiratory or Skin Sensitisation: Product is not expected to be a contact or respiratory sensitiser.

Chronic Exposure:

Mutagen/Carcinogen/Reproductive Toxicant Product is classified as a suspected carcinogen and diesel engine exhaust is a confirmed carcinogen. Dermal application to mice resulted in skin tumours. Product is not expected to be mutagenic, or a reproductive or developmental toxicant.

Specific Target Organ Toxicity Single Exposure: No information available. Not expected to be a specific target organ toxicant by single exposure.

Specific Target Organ Toxicity Repeated Exposure: No information available. Not expected to be a specific target organ toxicant by repeated exposure.

Aspiration Hazard: Product is classified as an aspiration hazard and may cause fatal pulmonary oedema if aspirated into lungs.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: LC₅₀ >1 - ≤ 10 mg/L in the aquatic environment.

Product is ecotoxic in the aquatic environment with long-lasting effects. Avoid losses to the environment.

Persistence/degradability: Major components are biodegradable. Volatile components oxidise rapidly in air by photochemical reaction. Product may persist in anaerobic conditions.

Bioaccumulation: Contains components with the potential to bioaccumulate.

Mobility in soil: Product floats on water. Evaporates within a day from water or soil surfaces. Large volumes could penetrate soil and contaminate groundwater.

Other adverse effects: Films formed on water may affect oxygen transfer and damage organisms.

Ingredients with Ecotoxic classifications: Diesel is made from blending several refinery streams. Ecotoxic effects have been carried out on a variety of hydrocarbon blends and streams but not those containing additives. Diesel has been classified as toxic to the aquatic environment with long lasting, chronic, effects based on knowledge of the components in the diesel and the ecotoxicity of similar products.

Section 13: DISPOSAL CONSIDERATIONS

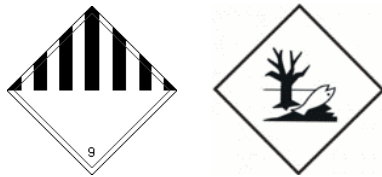
Disposal: Recycle and reuse wherever possible. Do not dispose into the environment, in drains or in water courses. Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater contamination. Dispose of waste product via an approved waste disposal contractor.

Date of issue: 14 October 2025
SDS Version No: 3

Disposal of Packaging: Labels should not be removed from containers until they have been cleaned. Do not cut, puncture, or weld on or near containers. Empty containers may contain hazardous combustible residues. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers. Advise flammable nature. Dispose of packaging via an approved waste disposal contractor.

Section 14: TRANSPORT INFORMATION

This product is classified as a Dangerous Good for transport in accordance with NZS5433:2020, IMDG or IATA.



NZS5433:2020

UN No: 3082

Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s. (Fuels, diesel)

Class: 9

Packing Group: III

Environmentally hazardous: Yes

Hazchem Code: 3Z

IMDG:

UN No: 3082

Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s. (Fuels, diesel)

Class: 9

Packing Group: III

Marine Pollutant: Yes

EmS: F-A, S-F

IATA:

UN No: 3082

Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s. (Fuels, diesel)

Class: 9

Packing Group: III

Environmentally hazardous: Yes

Ensure transportation methods prevent leakage from packages and collapsing loads.

Section 15: REGULATORY INFORMATION

HSNO Approval Code: HSR001441

NZ Inventory of Chemicals: All ingredients are listed in the NZ Inventory of Chemicals (NZIoC).

Date of issue: 14 October 2025
SDS Version No: 3

Australian Inventory of Chemical Substances: All ingredients are listed on the Australian Inventory of Chemical Substances (AICS).

This substance triggers:	Compliance Certificate	N/A
	Certified Handler	N/A
	Emergency Response Plan	1,000L
	Secondary Containment	1,000L
	Signage	1,000L

This product will require 2 fire extinguishers to be available where quantities of 500L or more are stored at a location, with the exception of an unattended dispensing station for self-service refueling.

This substance is not required to be Tracked. All workplace personnel handling this substance are required to be trained on the safe handling and PPE requirements for the hazards associated with this substance.

Section 16: OTHER INFORMATION

The information provided in this Safety Data Sheet relates only to the specific material designated herein. This Safety Data Sheet summarises our best knowledge of the health and safety hazard information of the product and how to safely handle the product in the workplace. Each user should read this SDS and consider the information in the context of how the product will be handled and used in the workplace including its use in conjunction with other products.

This substance is approved under HSNO for use as a fuel. All reasonable care has been taken to ensure that the information and advice contained herein are from sources believed to be reliable and to represent the most up-to-date knowledge available at the date given in Section 16. No liability is assumed for any damages related to the use or misuse of this substance.

All chemical materials may present unknown hazards as people have varying degrees of sensitivity to chemicals. Therefore, this product should be used with caution. The information herein is given in good faith, but no warranty, express or implied is made.

SDS Issued: 14 October 2025

Supersedes: 1 December 2020

Reason for Revision: Update to GHS classifications.
Revised by: Simonne Moses - HSNO Consultant

References:

EPA NZ Approved Hazardous Substances with Controls Database.
Original SDS: Z Energy Limited, Diesel SDS, September 2020.

Summary of Abbreviations: EPA – Environmental Protection Authority
GHS – Global Harmonisation System
CAS – Chemical Abstracts Service
TWA – Time Weighted Average

END OF SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name LIQUEFIED PETROLEUM GAS (LPG)
Synonyms AUTOGAS • BUTANE • LIQUEFIED PETROLEUM GAS • LP GAS • LPG • PROPANE

1.2 Uses and uses advised against

Uses AUTOMOTIVE FUEL • FUEL • INDUSTRIAL APPLICATIONS

1.3 Details of the supplier of the product

Supplier name ELGAS LIMITED
Address 970 Great South Road, Penrose, Auckland, 1061, NEW ZEALAND
Telephone 0800 435 427
Fax +64 9 579 3857
Website <http://www.ELGAS.co.nz>

1.4 Emergency telephone numbers

Emergency 0800 435 427

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

HAZARDOUS ACCORDING TO NZ ENVIRONMENTAL PROTECTION AUTHORITY CRITERIA

Physical Hazards

Flammable Gases: Category 1A
Gases Under Pressure: Liquefied gas

Health Hazards

Not classified as a Health Hazard

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word DANGER

Pictograms



Hazard statements

H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.

Prevention statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response statements

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 In case of leakage, eliminate all ignition sources.

PRODUCT NAME LIQUEFIED PETROLEUM GAS (LPG)**Storage statements**

P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Disposal statements

None allocated.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
BUTANE	106-97-8	203-448-7	<99%
ISOBUTANE	75-28-5	200-857-2	<99%
PROPANE	74-98-6	200-827-9	<99%
PROPYLENE	115-07-1	204-062-1	<60%
ETHANE	74-84-0	200-814-8	<5%
ETHYL MERCAPTAN	75-08-1	200-837-3	0.025%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	Cold burns: Immediately flush with tepid water or with sterile saline solution. Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Be aware of possible explosive atmospheres. Apply artificial respiration if not breathing. Give oxygen if available.
Skin	Cold burns: Remove contaminated clothing and gently flush affected areas with warm water (30°C) for 15 minutes. It is recommended that warm water is applied to clothing before removing it so as to prevent further skin damage. Apply sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention.
Ingestion	Ingestion is not considered a potential route of exposure.
First aid facilities	Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

In high concentrations may cause asphyxiation. Direct contact with the liquefied material or escaping compressed gas may cause frostbite injury.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically. Severe inhalational exposure may sensitise the heart to catecholamine induced arrhythmias. Do not administer catecholamines to an overexposed person.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Stop flow of gas if safe to do so, such as by slowly closing the cylinder valve.

5.2 Special hazards arising from the substance or mixture

Extremely flammable. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, mobile phones etc. when handling.

5.3 Advice for firefighters

Temperatures in a fire may cause cylinders to rupture and internal pressure relief devices to be activated. Cool cylinders or containers exposed to fire by applying water from a protected location. Do not approach cylinders or containers suspected of being hot. This material is capable of forming explosive mixtures in air.

PRODUCT NAME LIQUEFIED PETROLEUM GAS (LPG)

5.4 Hazchem code

2YE
2 Fine Water Spray.
Y Risk of violent reaction or explosion. Wear full fire kit and breathing apparatus. Contain spill and run-off.
E Evacuation of people in and around the immediate vicinity of the incident should be considered.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use Personal Protective Equipment (PPE) as detailed in Section 8 of the SDS. Ventilate area where possible and eliminate ignition sources.

6.2 Environmental precautions

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

6.3 Methods of cleaning up

Stop the flow of material, if this is without risk. If the leak is irreparable, move the cylinder to a safe and well ventilated area, and allow to discharge. Keep area evacuated and free from ignition sources until any leaked or spilled liquid has evaporated.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Do not store near incompatible substances and sources of ignition. Cylinders should be stored: upright, prevented from falling, in a secure area; below 65°C, in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Butane	WES [NZ]	800	1900	--	--
Ethane	WES [NZ]	--	--	--	--
Ethyl mercaptan	WES [NZ]	0.5	1.3	--	--
Isobutane	WES [NZ]	--	--	--	--
Propane	WES [NZ]	Asphyxiant			
Propylene	WES [NZ]	Asphyxiant			

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

PRODUCT NAME LIQUEFIED PETROLEUM GAS (LPG)

PPE

Eye / Face	Wear safety glasses.
Hands	Wear leather or insulated gloves.
Body	Wear coveralls.
Respiratory	Where an inhalation risk exists, wear Self Contained Breathing Apparatus (SCBA) or an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	COLOURLESS GAS (LIQUEFIED UNDER PRESSURE)
Odour	CHARACTERISTIC ODOUR
Flammability	EXTREMELY FLAMMABLE
Flash point	-104°C to -60°C
Boiling point	-42°C to -0.5°C
Melting point	NOT RELEVANT
Evaporation rate	NOT AVAILABLE
pH	NOT RELEVANT
Vapour density	NOT AVAILABLE
Relative density	0.510 to 0.568
Solubility (water)	SLIGHTLY SOLUBLE
Vapour pressure	520 kPa to 1530 kPa @ 40°C
Upper explosion limit	10.9 % (Propane)
Lower explosion limit	1.7 % (Propane)
Partition coefficient	NOT AVAILABLE
Autoignition temperature	450°C (Propane)
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

Density	1.86 kg/m ³ to 2.47 kg/m ³ @ 15°C
Specific heat value	2.386 to 2.512 kJ/kg

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources. Do not use natural rubber flexible hoses. Also incompatible (potentially violently) with oxygen, halogens and metal halides.

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity No known toxicological effects from this product. Based on available data, the classification criteria are not met.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
BUTANE	Study not feasible	Study not feasible	658000 mg/m ³ /4H (rat)
PROPANE	Study not feasible	Study not feasible	> 800000 ppm/15M (rat)
PROPYLENE	--	--	> 65000 ppm/4hrs (rat)
ETHANE	--	--	658 mg/L/4hrs (rat)
ETHYL MERCAPTAN	682 mg/kg (rat)	--	2770 ppm/4 hours (mouse)

Skin Not classified as a skin irritant. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.

Eye Not classified as an eye irritant. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Not classified as a mutagen.

Carcinogenicity Not classified as a carcinogen.

Reproductive Not classified as a reproductive toxin.

STOT - single exposure Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.

STOT - repeated exposure Not classified as causing organ damage from repeated exposure.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Not expected to be harmful to the environment.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

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

12.4 Mobility in soil

Spillages are unlikely to penetrate the soil.

12.5 Other adverse effects

Gas at standard temperature and pressure and is expected to partition primarily to air.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Cylinders should be returned to the manufacturer or supplier for disposal of contents.

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD ACCORDING TO LAND TRANSPORT RULE: DANGEROUS GOODS 2005; NZS 5433:2012, UN, IMDG OR IATA



	LAND TRANSPORT (NZS 5433)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1075	1075	1075
14.2 Proper Shipping Name	PETROLEUM GASES, LIQUEFIED	PETROLEUM GASES, LIQUEFIED	PETROLEUM GASES, LIQUEFIED
14.3 Transport hazard class	2.1	2.1	2.1
14.4 Packing Group	None allocated.	None allocated.	None allocated.

14.5 Environmental hazards

Not a Marine Pollutant.

14.6 Special precautions for user

Hazchem code 2YE

EmS F-D, S-U

Other information Ensure cylinder is separated from driver and that outlet of relief device is not obstructed.

15. REGULATORY INFORMATION

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

Approval code HSR001009

Group standard LPG (Liquified Petroleum Gas)

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.
NEW ZEALAND: NZIoC (New Zealand Inventory of Chemicals)
All components are listed on the NZIoC inventory, or are exempt.

16. OTHER INFORMATION

Additional information ASPHYXIANTS (1): When present in the atmospheres in high concentrations, asphyxiants reduce the oxygen concentration by displacement. Atmospheres deficient in oxygen do not provide adequate sensory warning of danger and most simple asphyxiants are odourless. Therefore it is not appropriate to recommend an exposure standard for each asphyxiant, but to maintain oxygen concentrations. However, some asphyxiants may be given an exposure standard due to the potential for narcotic effects at high concentrations or an explosion hazard.

ASPXYIANTS (2): There is a significant hazard associated with workers entering poorly ventilated areas (e.g. tanks) where oxygen may be deficient. An air supplied breathing apparatus may be required if adequate ventilation is not ensured.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PRODUCT NAME LIQUEFIED PETROLEUM GAS (LPG)**Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CCID	Chemical Classification and Information Database (HSNO)
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
EPA	Environmental Protection Authority [New Zealand]
GHS	Globally Harmonized System
HSNO	Hazardous Substances and New Organisms
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

[End of SDS]

Date of issue: 14 October 2025
SDS Version No: 3

Safety Data Sheet Petrol Unleaded

Classified as: Hazardous according to the EPA Hazardous Substances
(Hazard Classifications) Notice 2020.

Section 1: SUBSTANCE AND SUPPLIER DETAILS

Product Name: Petrol Unleaded

Other Names: Regular 91 with Techron, Regular Unleaded 91,
Unleaded 91, Premium 95 with Techron, Premium
Unleaded 95, Premium 95.

Supplier: Z Energy 2015 Limited
3 Queens Wharf
Wellington
New Zealand

Phone: +64 4 472 0080

Local Contact: Phone – 0800 474 355
Email – cxservice@z.co.nz

Recommended Use: Fuel for spark ignition engines designed to run on
unleaded fuel.

Use Restriction: Not intended for use in aviation applications.

In Case of Emergency Contact:

CHEMCALL: 0800 CHEMCALL (243 622) 24 hours
International - +64 4 917 9888

Section 2: HAZARDS IDENTIFICATION

This product is classified as a Dangerous Good for Transport.

This product is classified as hazardous according to criteria in the EPA Hazardous Substances (Hazard Classifications) Notice 2020.

HSNO APPROVAL NUMBER: **HRC000003**

HSNO CLASSIFICATIONS: 3.1A – Extremely flammable liquid.
6.1E – Aspiration hazard
6.7B – Suspected carcinogen
9.1B – Ecotoxic in the aquatic environment, chronic

GHS Classification: Flammable liquid – Category 1
Carcinogenicity – Category 2

Aspiration hazard – Category 1
Hazardous to the aquatic environment, chronic – Category 2

Labelling Elements:

Hazard Statements:

H224 Extremely flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H351 Suspected of causing cancer.
H411 Toxic to aquatic life with long lasting effects.

GHS Pictograms:



Signal Word: **DANGER**

PREVENTION STATEMENTS:

P102 – Keep out of reach of children.
P103 – Read carefully and follow all instructions.
P202 – Do not handle until all safety precautions have been read and understood.
P210 – Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
P233 – Keep container tightly closed.
P240 – Ground and bond container and receiving equipment.
P241 – Use explosion-proof ventilating/electrical/lighting equipment.
P242 – Use non-sparking tools.
P243 – Take action to prevent static discharges.
P273 – Avoid release to the environment.
P280 – Wear protective gloves, protective clothing, eye protection, face protection.

RESPONSE STATEMENTS:

P101 - If medical advice is needed, have product container or label at hand.
P301 + P331 – IF SWALLOWED: Do NOT induce vomiting.
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P308 + P310 – If exposed or concerned: Immediately call a POISON CENTRE or doctor.
P370 + P378 - In case of fire: Use water spray, dry powder, foam, or carbon dioxide to extinguish.
P391 – Collect spillage.

STORAGE:

P403 + P235 – Store in a well-ventilated place. Keep cool.
P405 – Store locked up.

DISPOSAL:

P501 - In accordance with the EPA Hazardous Substances (Disposal) Notice 2017. Dispose of via an approved waste disposal contractor. Refer to Section 13 of the SDS.

Other information: This product is intended for use as a fuel in a closed system. If used for any other purpose, in open systems or as a spray, ignition and exposure risks will increase and a careful risk assessment should be carried out.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Mixture: Complex mixture of hydrocarbons consisting of paraffins, cycloparaffins, aromatic and olefinic hydrocarbons (including benzene at 1.0% v/v maximum), with carbon numbers predominantly in the C4 to C12 range. May also contain several additives at <0.1% v/v each. Alcohols may be present at <0.1% v/v. Dyes and markers can be used to indicate tax status and prevent fraud.

Main Component	CAS Number	Concentration (%wt)
Gasoline, low boiling point naphtha	86290-81-5	90 - 100%
Benzene	71-43-2	< 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 or the environment and hence require reporting in this section.

Section 4: FIRST AID MEASURES

Workplace Facilities Required:	Eye wash and safety shower facilities should be provided in workplaces where there is a risk of significant exposure.
If Inhaled:	Remove to fresh air and keep at rest. Seek medical attention if symptoms persist.
In Contact with Eye:	Hold eyes open, flush continuously with water for at least 15 minutes. Seek medical attention if irritation develops and persists.
In Contact with Skin:	Wash skin with soap and plenty of water, while removing contaminated clothing and shoes. Wash contaminated clothing before re-use. Seek medical attention if skin irritation develops and persists.
If Swallowed:	DO NOT INDUCE VOMITING. Rinse mouth. Never give anything by mouth to an unconscious person. If unconscious, seek immediate medical attention. If vomiting occurs, keep head below hips to prevent aspiration to lungs.
Advice to Doctor:	Treat symptomatically. Aspiration of product into lungs following vomiting may cause fatal pulmonary oedema.

Section 5: FIRE FIGHTING MEASURES

Fire/Explosion Hazard:	Extremely flammable liquid and vapour. Ensure adequate ventilation to prevent explosive vapour-air mixture and prevent build-up of electrostatic charges (i.e. by grounding). The vapour is heavier than air, spreads along the ground and distant ignition is possible. Will float and may be reignited on surface water. Keep away from hot surfaces, heat, sparks, and ignition sources. Hazchem Code: 3YE.
Suitable Extinguishing Media:	Use water spray or fog, carbon dioxide, dry powder, or foam. Sand or earth may be used on small fires. Do not use water jet.
Precautions in Connection with Fire:	Combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates and gases, including carbon monoxide and unidentified organic and inorganic compounds.

Advice for firefighters:

Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) operated in positive pressure mode and full protective clothing to prevent exposure to vapours or fumes. Water spray may be used to cool down heat-exposed containers. Fight fire from safe location. This product should be prevented from entering drains and watercourses.

Keep adjacent drums and tanks cool by spraying with water from a safe location. If possible, remove them from the danger zone. If adequate cooling cannot be achieved, the area needs to be evacuated, and further firefighting and cooling attempts should be carried out from a safe location.

Section 6: ACCIDENTAL RELEASE MEASURES

An emergency response plan meeting the requirements of Part 5 of the Health and Safety at Work (Hazardous Substances) Regulations 2017 is required when held in quantities greater than 100L.

Precautions:

Vapour can travel for considerable distances both above and below the ground surface. Underground services (drains, pipelines, cable ducts) can provide preferential flow paths.

Clear area of all unprotected personnel. Keep unnecessary and unprotected personnel from entering area. Do not breathe fumes/vapour. Avoid contact with skin and eyes. Remove any readily combustible materials and all sources of ignition. Ventilate area. Do not release to the environment. If spill enters waterways, contact local council pollution hotline.

Suitable Protective Equipment:

Emergency responders must use personal protective equipment, including gloves, PVC jacket and trousers, knee length, chemical resistant safety boots, and safety glasses with side shields or safety goggles. Respiratory protection may be required if large amounts of vapour/fumes is present. Contaminated clothing may be a fire hazard and therefore should be soaked with water before being removed.

Spill or Leak Procedures.

Stop leak if safe to do so. Contain and absorb spill using inert, non-combustible, absorbent material such as sand, earth. Collect using clean, non-sparking tools and place in a waste container for disposal. Ensure waste container is properly labelled. Do not dispose into an interceptor.

Maritime Spillages:

Maritime spillages should be dealt with using a Shipboard Oil Pollution Emergency Plan (SOPEP), as required by MARPOL Annex 1 Regulation 26.

Waste Disposal Methods:

Dispose of as per Section 13.

Emergency preparation:

Ensure there is appropriate and adequate personal protective equipment, trained personnel and clean up materials for management of accidental release.

Section 7: HANDLING AND STORAGE

Precautions for Safe Handling:

Avoid naked flames, hot surfaces, heat, and ignition sources. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Avoid contact with skin and eyes. Do not breathe vapour/fumes. Use local exhaust ventilation if there is risk of inhalation of vapours, mists, or aerosols. Do not eat, drink, or smoke when using this product. Work from suitable, labelled, fire-resistant containers. Open containers carefully as they may be under pressure. Keep containers closed when not in use. Flameproof equipment is necessary in

areas where the product is being used. Only use in well-ventilated areas. Take precautionary measures against static discharges. Ensure all equipment is properly bonded. Cloth, paper, and other materials that are used to absorb spills present a fire hazard. Avoid their accumulation by disposing of them safely and immediately. Remove contaminated clothing and wash hands and face before entering eating areas.

Product Transfer: Electrostatic charges may be generated during pumping. Ensure electrical continuity by bonding all equipment. Avoid splash filling. Wait 2 minutes after tank filling (for tanks such as those on road tanker vehicles) before opening hatches or manholes. Wait 30 minutes after tank filling (for large storage tanks) before opening hatches or manholes. When filling tanks there is always a danger of static discharge leading to explosion. This is particularly hazardous when switch loading tanks.

Product transfer may give rise to light hydrocarbon vapour in the headspace of tanks. This vapour may explode if there is a source of ignition such as static discharge.

Partly filled containers present a greater hazard than those that are full, therefore handling, transfer and sampling activities need special care. Conditions, such as filling empty Filter Water Separator vessels, that lead to the formation of hydrocarbon mists are also particularly hazardous.

Storage: Keep out of reach of children. Store locked up. This product must never be stored in buildings occupied by people. Small volumes (maximum 5 litres) may be stored in a suitably designed portable container. Such containers should be stored in well-ventilated areas, flameproof cabinets, or stores. Use properly labelled and closeable containers. Keep container tightly closed in a dry, well-ventilated place away from direct sunlight and other sources of heat or ignition.

Keep in a bunded area with a sealed (low permeability) floor, to provide containment against spillage. Stack drums to a height not exceeding 3 metres without the use of racking. Locate tanks away from heat and other sources of ignition. Seek specialist advice for the design, construction, and operation of bulk storage facilities.

Site Storage Requirements: Site Signage will be required when quantities exceed 250L. For incompatibilities refer to Section 10.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Workplace Exposure Standards NZ: Workplace Exposure Standards have been established for this product.

Benzene: TWA 0.05 ppm, 0.16 mg/m³ (carcinogen cat 1, skin)

Petrol (Gasoline): TWA 300 ppm, 890 mg/m³, STEL 500 ppm, 1480 mg/m³

Engineering Controls: Eyewash facilities and safety showers should be provided in the work area where there is a risk of exposure to eyes and skin. If use generates large quantities of vapour/fumes, use engineering controls such as local exhaust ventilation to ensure workers are not exposed to levels exceeding the exposure standards.

Personal Protective Equipment: Avoid contact with skin and eyes. Avoid breathing vapour/fumes.

Hand protection: Wear protective gloves that are resistant to the product, e.g., neoprene rubber, nitrile. Refer to Australian and New Zealand Standard AS/NZS 2161 for

protective gloves.

Skin and body protection:

Wear protective clothing such as cotton overalls buttoned and neck and wrist. When handling large quantities, a chemical resistant apron is recommended. Refer to Australian and New Zealand Standard AS/NZS 4501 for occupational protective clothing.

Eye protection:

Use safety glasses with side shields or safety goggles to protect eyes. A face shield may also be used with safety glasses to prevent splashes to face. Refer to AS/NZS 1336 and 1337 for suitable eye and face protection.

Respiratory protection:

Where there is inadequate ventilation and use results in exposure to vapour/fumes, use a respirator with a replaceable organic vapour filter. Refer to AS/NZS 1715 and AS/NZS 1716 for suitable respiratory protection.

Other information:

PPE selected must be impervious to the product. Do not eat, smoke, or drink where material is handled, processed, or stored. Wash hands carefully before eating, drinking, or smoking. Handle in accordance with safe industrial hygiene practices.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Description:	Liquid	Colour:	Red/pale straw/yellow
Odour:	Characteristic odour	Odour Threshold:	Not available
pH (20°C):	Not applicable	Solubility (water, 20°C):	Negligible
Freezing/Melting point:	Not available	Boiling Point & Range:	25°C – 210°C
Flammability:	Extremely flammable liquid	Flash Point:	< -40°C
LEL/UEL:	1 – 8% v/v	Vapour Pressure (20°C):	30-90 kPa
Decomposition Temp:	Not available	Autoignition Temp:	> 250°C
Density (15°C):	720-775 kg/m ³	Vapour Density (20°C):	>3 (air = 1)
Partition Coefficient: oil/water	Log Pow: 2-7	Viscosity (kinematic):	0.5-0.75 mm ² /s (40°C)
Particle Characteristics:	Not applicable		

Section 10: STABILITY AND REACTIVITY

Stability:	Stable under normal cool, dry storage conditions.
Reactivity:	Not reactive under normal conditions of storage and use.
Conditions to Avoid:	Heat, hot surfaces, ignition sources, sparks, flames.
Incompatibility:	Keep away from oxidising agents and combustible materials such as paper, cardboard, wood.
Hazardous Decomposition:	Thermal decomposition may release toxic fumes containing oxides of carbon.

Section 11: TOXICOLOGICAL INFORMATION

Acute Exposure

Acute Toxicity:	Not classified as acutely toxic. LD ₅₀ oral > 2,000 mg/kg. LD ₅₀ dermal > 2,000 mg/kg LC ₅₀ inhalation > 20 mg/L (vapour)
Inhalation:	Large quantities of vapour will displace oxygen and may cause drowsiness, dizziness.
Ingestion:	Ingestion of large quantities may cause nausea, vomiting, stomach pain, drowsiness, and dizziness. If vomiting occurs and is aspirated into lungs this may be fatal.
Skin Corrosion/Irritation:	Product is not classified as a skin irritant or corrosive. Prolonged or repeated skin contact may cause defatting of the skin and dermatitis. High pressure injection into the skin may cause local necrosis if the product is not surgically removed.
Serious Eye Damage/Eye Irritation:	Product is not classified as an eye irritant or corrosive. Contact with eyes may cause redness, stinging, weeping.
Respiratory or Skin Sensitisation:	Product is not expected to be a contact or respiratory sensitiser.
Chronic Exposure:	
Mutagen/Carcinogen/Reproductive Toxicant	Product is classified as a suspected carcinogen via inhalation. Product is not expected to be mutagenic, or a reproductive or developmental toxicant.
Specific Target Organ Toxicity Single Exposure:	No information available. Not expected to be a specific target organ toxicant by single exposure.
Specific Target Organ Toxicity Repeated Exposure:	No information available. Not expected to be a specific target organ toxicant by repeated exposure.
Aspiration Hazard:	Product is classified as an aspiration hazard and may cause fatal pulmonary oedema if aspirated into lungs.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity:	LC ₅₀ >1 - ≤ 10 mg/L in the aquatic environment. Product is ecotoxic in the aquatic environment with long-lasting effects. Avoid losses to the environment.
Persistence/degradability:	Major components are biodegradable. Volatile components oxidise rapidly in air by photochemical reaction. Product may persist in anaerobic conditions.
Bioaccumulation:	Contains components with the potential to bioaccumulate.
Mobility in soil:	Product floats on water. Evaporates within a day from water or soil surfaces. Large volumes could penetrate soil and contaminate groundwater.
Other adverse effects:	Films formed on water may affect oxygen transfer and damage organisms.
Ingredients with Ecotoxic classifications:	Petrol is made from blending several refinery streams. Ecotoxic effects have been carried out on a variety of hydrocarbon blends and streams but not those containing additives. Petrol has been classified as toxic to the aquatic environment with long lasting, chronic, effects based on knowledge of the components in the petrol and the

ecotoxicity of similar products.

Section 13: DISPOSAL CONSIDERATIONS

Disposal:	Recycle and reuse wherever possible. Do not dispose into the environment, in drains or in water courses. Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater contamination. Dispose of waste product via an approved waste disposal contractor.
Disposal of Packaging:	Labels should not be removed from containers until they have been cleaned. Do not cut, puncture, or weld on or near containers. Empty containers may contain hazardous combustible residues. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers. Advise flammable nature. Dispose of packaging via an approved waste disposal contractor.

Section 14: TRANSPORT INFORMATION

This product is classified as a Dangerous Good for transport in accordance with NZS5433:2020, IMDG or IATA.



NZS5433:2020
UN No: 1203
Proper Shipping Name: Petrol
Class: 3
Packing Group: II
Environmentally hazardous: Yes
Hazchem Code: 3YE

IMDG:
UN No: 1203
Proper Shipping Name: Petrol
Class: 3
Packing Group: II
Marine Pollutant: Yes
EmS: F-E, S-E

IATA:
UN No: 1203
Proper Shipping Name: Petrol
Class: 3
Packing Group: II
Environmentally hazardous: Yes

Ensure transportation methods prevent leakage from packages and collapsing loads.

Section 15: REGULATORY INFORMATION

HSNO Approval Code: HRC000003

NZ Inventory of Chemicals: All ingredients are listed in the NZ Inventory of Chemicals (NZIoC).

Australian Inventory of Chemical Substances: All ingredients are listed on the Australian Inventory of Chemical Substances (AICS).

This substance triggers:	Compliance Certificate	50L
	Certified Handler	N/A
	Emergency Response Plan	100L
	Secondary Containment	100L
	Signage	250L

For quantities between 50 – 200 L, one fire extinguisher is required. For quantities >200L, 2 fire extinguishers are required. This does not apply to an unattended dispensing station for self-service refueling.

This product is required to be secured when unattended for any quantity.

When the product is stored on a farm of > 4 ha in area, a Location Compliance Certificate and Signage is required for ≥ 2,000L subject to certain conditions.

This product is not required to be Tracked. All workplace personnel handling this product are required to be trained on the safe handling and PPE requirements for the hazards associated with this substance.

Section 16: OTHER INFORMATION

The information provided in this Safety Data Sheet relates only to the specific material designated herein. This Safety Data Sheet summarises our best knowledge of the health and safety hazard information of the product and how to safely handle the product in the workplace. Each user should read this SDS and consider the information in the context of how the product will be handled and used in the workplace including its use in conjunction with other products.

This substance is approved under HSNO as petrol. All reasonable care has been taken to ensure that the information and advice contained herein are from sources believed to be reliable and to represent the most up-to-date knowledge available at the date given in Section 16. No liability is assumed for any damages related to the use or misuse of this substance.

All chemical materials may present unknown hazards as people have varying degrees of sensitivity to chemicals. Therefore, this product should be used with caution. The information herein is given in good faith, but no warranty, express or implied is made.

SDS Issued: 14 October 2025

Supersedes: 1 December 2020

Reason for Revision: Update to GHS classifications.
Revised by: Simonne Moses - HSNO Consultant

References:

Date of issue: 14 October 2025
SDS Version No: 3

EPA NZ Approved Hazardous Substances with Controls Database.
Original SDS: Z Energy Limited, Petrol SDS, September 2020.

Summary of Abbreviations: EPA – Environmental Protection Authority
GHS – Global Harmonisation System
CAS – Chemical Abstracts Service
TWA – Time Weighted Average
STEL – Short Term Exposure Limit

END OF SAFETY DATA SHEET

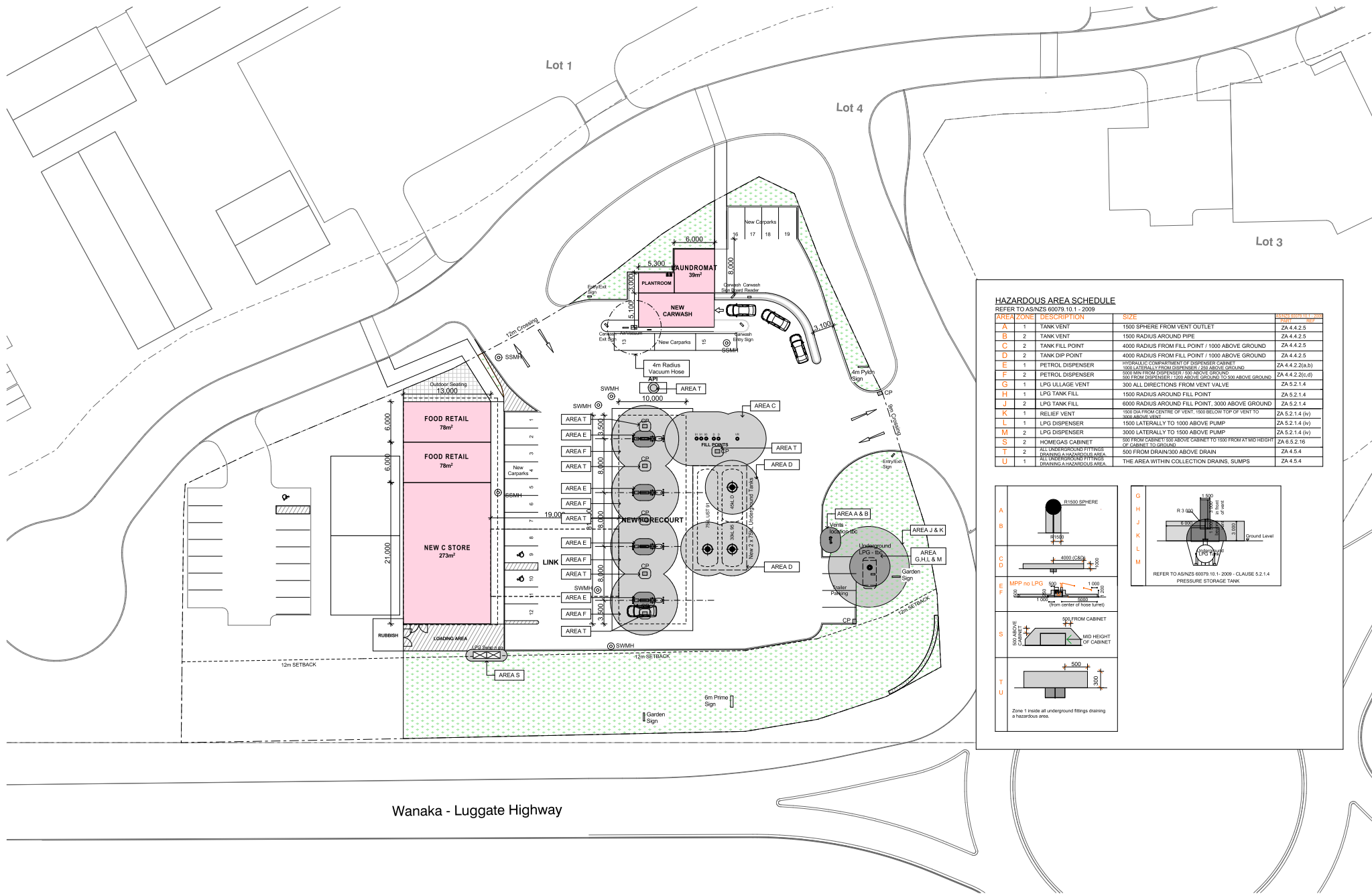


Attachment 2:

Service Station Hazardous Areas Plan

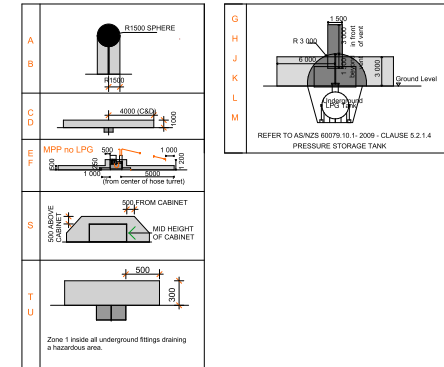
Appendix A

Service Station Hazardous Area Plan



HAZARDOUS AREA SCHEDULE
REFER TO AS/NZS 60079.10.1 - 2009

AREA	ZONE	DESCRIPTION	SIZE	HAZARD	HAZARD
A	1	TANK VENT	1500 SPHERE FROM VENT OUTLET	ZA 4.4.2.5	
B	2	TANK VENT	1500 RADIUS AROUND PIPE	ZA 4.4.2.5	
C	2	TANK FILL POINT	4000 RADIUS FROM FILL POINT / 1000 ABOVE GROUND	ZA 4.4.2.5	
D	2	TANK DIP POINT	4000 RADIUS FROM FILL POINT / 1000 ABOVE GROUND	ZA 4.4.2.5	
E	1	PETROL DISPENSER	HYDRAULIC COMPARTMENT OF DISPENSER CABINET	ZA 4.4.2.2(a,b)	
F	2	PETROL DISPENSER	1000 LATERALLY FROM DISPENSER / 200 ABOVE GROUND	ZA 4.4.2.2(c,d)	
G	1	LPG ULLAGE VENT	300 FROM DISPENSER / 200 ABOVE GROUND TO 500 ABOVE GROUND	ZA 5.2.1.4	
H	1	LPG TANK VENT	300 ALL DIRECTIONS FROM VENT VALVE	ZA 5.2.1.4	
J	2	LPG TANK FILL	1500 RADIUS AROUND FILL POINT, 3000 ABOVE GROUND	ZA 5.2.1.4	
K	1	RELIEF VENT	1000 DIA FROM CENTRE OF VENT, 1000 BELOW TOP OF VENT TO 3000 ABOVE GROUND	ZA 5.2.1.4 (iv)	
L	1	LPG DISPENSER	1500 LATERALLY TO 1000 ABOVE PUMP	ZA 5.2.1.4 (iv)	
M	2	LPG DISPENSER	3000 LATERALLY TO 1500 ABOVE PUMP	ZA 5.2.1.4 (iv)	
S	2	HOME GAS CABINET	1000 FROM CABINET / 1000 ABOVE GROUND TO 1000 FROM AT MID HEIGHT OF CABINET TO GROUND	ZA 6.5.2.16	
T	2	ALL UNDERGROUND FITTINGS DRAINING A HAZARDOUS AREA	500 FROM DRAIN/300 ABOVE DRAIN	ZA 6.5.4	
U	1	ALL UNDERGROUND FITTINGS DRAINING A HAZARDOUS AREA	THE AREA WITHIN COLLECTION DRAINS, SUMPS	ZA 6.5.4	



Wanaka - Luggate Highway



Attachment 3:

Separation Distances Calculations

Attachment 3 - Output from WorkSafe Separation Distances Calculator

PCBU Details	
Company Name:	Caltex
Street Address:	MU site
Hazardous Substance(s):	Diesel
Store identifier:	
Details about your business:	Are you a retail shop? No Are you a farm > 4 ha? No
Quantity Classification	
45,000 Class 3.1D	
Comment:	Values in the quantity field will need to align with the units in the relevant regulations. In some circumstances, you may need to convert units from kg to L, etc for accurate results.
What describes your situation?	Stationary Container System
Is the stationary container system above or below ground?	Above Ground Protected 4.80 m Public: n/a m Below Ground Other: 0.95 m Regulation
Comment:	Other refers to the required separation distance from another stationary container system.

PCBU Details	
Company Name:	Caltex
Street Address:	MU site
Hazardous Substance(s):	Petrol (91)
Store identifier:	
Details about your business:	Are you a retail shop? No Are you a farm > 4 ha? No
Quantity Classification	
75,000 Class 3.1A	
Comment:	Values in the quantity field will need to align with the units in the relevant regulations. In some circumstances, you may need to convert units from kg to L, etc for accurate results.
Select one of the following:	Stationary Container System
Is the stationary container system above or below ground?	Above Ground Above Ground Below Ground
Is this a process vessel located inside a workshop?	No
	Protected 6.50 m Public: 4.00 m Other: 1.25 m Regulation
Comment:	Other refers to the required separation distance from another stationary container system.

PCBU Details	
Company Name:	Caltex
Street Address:	MU site
Hazardous Substance(s):	Petrol (95)
Store identifier:	
Details about your business:	Are you a retail shop? No Are you a farm > 4 ha? No
Quantity Classification	
30,000 Class 3.1A	
Comment:	Values in the quantity field will need to align with the units in the relevant regulations. In some circumstances, you may need to convert units from kg to L, etc for accurate results.
Select one of the following:	Stationary Container System
Is the stationary container system above or below ground?	Above Ground Above Ground Below Ground
Is this a process vessel located inside a workshop?	No
	Protected 5.20 m Public: 3.20 m Other: 1 m Regulation
Comment:	Other refers to the required separation distance from another stationary container system.

PCBU Details	
Company Name:	Caltex
Street Address:	MU site
Hazardous Substance(s):	LPG
Store identifier:	
Details about your business:	Are you a retail shop? No Are you a farm > 4 ha? No
Quantity Classification	
10,000 Class 2.1.1	
Comment:	Values in the quantity field will need to align with the units in the relevant regulations. In some circumstances, you may need to convert units from kg to L, etc for accurate results.
Are you handling permanent or liquefiable gases?	Liquefiable
Does the substance involve LPG, propane or isobutane?	Yes
Select one of the following:	Stationary Container System
Is the stationary container system above or below ground?	Above Ground Below Ground
	Protected 6 m Public: 3 m Other: 6 m Regulation
Comment:	Other refers to an adjacent property. The distances apply from above-ground tank fittings (e.g. valve, flange or ullage gauge). For distances from the tank shell, refer to AS/NZS 1596:2014, section 7.3.

PCBU Details	
Company Name:	Caltex
Street Address:	MU site
Hazardous Substance(s):	LPG
Store identifier:	
Details about your business:	Are you a retail shop? No Are you a farm > 4 ha? No
Quantity Classification	
10,000 Class 2.1.1	
Comment:	Values in the quantity field will need to align with the units in the relevant regulations. In some circumstances, you may need to convert units from kg to L, etc for accurate results.
Are you handling permanent or liquefiable gases?	Liquefiable
Does the substance involve LPG, propane or isobutane?	Yes
Select one of the following:	Stationary Container System
Is the stationary container system above or below ground?	Above Ground Above Ground Below Ground
Is the installation subject to transitional provisions (Schedule 1)?	No
A compliance certifier may have further information on this matter.	Protected 11.00 m Public: 7.00 m Regulation