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To obtain approval to import or manufacture a  
hazardous substance  
(other than a pesticide or veterinary medicine)

Send to Environmental Protection Authority preferably by email ([HSApplications@epa.govt.nz](mailto:HSApplications@epa.govt.nz)) or alternatively by post  
(Private Bag 63002, Wellington 6140)  
Payment must accompany application; see our fees and charges schedule for details.

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Name of the substance to be approved

NPD 100 PLUS

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Date

11/05/2020

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## Completing this application form

1. This form has been approved under section 28 of the Hazardous Substances and New Organisms (HSNO) Act 1996. It only covers the import or manufacture of hazardous substances (other than pesticides and veterinary medicines) to be released in New Zealand under section 28 of the HSNO Act that are not covered by any group standard. If you wish to make an application for another type of substance (such as a veterinary medicine or pesticide) or for another use (such as an emergency, special emergency or containment), a different form will have to be used. All forms are available on our website.
2. It is recommended that you contact an Applications Advisor at the Environmental Protection Authority (EPA) as early in the application process as possible. An Applications Advisor can assist you with any questions you have during the preparation of your application including advising on any consultation requirements.
3. Before submitting this application, you may make an informal Status of Substance (SOS) advice request to the EPA. Further information on this process is available on our website. Please note that this is not mandatory and an SOS request is only informal advice.
4. This application form may be used to seek approvals for more than one hazardous substance, if the substances and their uses are of a similar nature.
5. Please make sure that you obtain all appropriate permissions for the use of any data that you have used or provided in this application form, if you are not the owner of such data.
6. Unless otherwise indicated, all sections of this form must be completed for the application to be formally received and assessed. If a section is not relevant to your application, please provide a comprehensive explanation why this does not apply. If you choose not to provide the specific information, you will need to apply for a waiver under section 59(3)(a)(ii) of the HSNO Act. This can be done by completing the section on the last page of this form.
7. Any extra material that does not fit in the application form must be clearly labelled, cross-referenced, and included with the application form when it is submitted.
8. Please add extra rows/tables where needed.
9. You must sign the form (the EPA will accept electronically signed forms) and enclose the application fee (including GST) unless you are already an approved EPA customer. To be recognised by the EPA as an "Approved customer", you must have submitted more than one application per month over the preceding six months, and have no history of delay in making payments, at the time of presenting an application.
10. Information about application fees is available on the EPA website. If you wish to claim a fee reduction for a reduced-risk-formulated product, the appropriate justification must be submitted at the pre-lodgement stage for consideration.
11. All application communications from the EPA will be provided electronically, unless you specifically requests otherwise.

## Commercially sensitive information

12. The EPA strongly advises applicants to provide as much information relating to the hazard classification and use of their substance as possible to help inform the EPA's assessment as well as for submitters and decision-makers. We expect this information to be publicly available in the application unless there is a genuine argument for it to be considered as commercially sensitive.
13. Commercially sensitive information may be put in a confidential appendix to this form (also available on our website) and be identified as confidential. If you consider any information to be commercially sensitive, please show this in the relevant section of this form providing your detailed reasons for considering it to be commercially sensitive and cross referencing to where that information is located in the confidential section.
14. Any information you supply to the EPA prior to formal lodgement of your application will not be publicly released, unless it has already been made publicly available as part of the consultation process. Following formal lodgement of your application any information in the body of this application form and any non-confidential appendices will become publicly available.
15. Once you have formally lodged your application with the EPA, any information you have supplied to the EPA about your application is subject to the Official Information Act 1982 (OIA). If a request is made for the release of information that you consider to be confidential, your view will be considered in a manner consistent with the OIA and with section 57 of the HSNO Act. You may be required to provide further justification for your claim of confidentiality.

## Definitions

<b>CAS Number</b>	Chemical Abstracts Service number. This is a unique identifier for a chemical substance
<b>Hazardous substance</b>	Any substance with one or more of the following intrinsic properties: <ul style="list-style-type: none"> <li>• Explosiveness</li> <li>• Flammability</li> <li>• A capacity to oxidise</li> <li>• Corrosiveness</li> <li>• Toxicity (including chronic toxicity)</li> <li>• Ecotoxicity, with or without bioaccumulation, or</li> <li>• which on contact with air or water (other than air or water where the temperature or pressure has been artificially increased or decreased) generates a substance with any one or more of the properties specified in this definition</li> </ul>
<b>EINECS</b>	European Inventory of Existing Commercial chemical Substances
<b>ELINCS</b>	European List of Notified Chemical Substances

<b>IUPAC</b>	International Union of Pure and Applied Chemistry. The world authority on chemical nomenclature
<b>Pesticide</b>	Substance or mixture of substances intended to be used for preventing, controlling, repelling or mitigating any pest (including vertebrates) in areas such as, but not limited to, agriculture, home and garden, rights of way or industrial areas
<b>Professional and non-professional users</b>	Professional users are using pesticides in the course of their job or business (such as farmers and growers, or amenity users). Professional use may include the use of formulated substances in order to deliver services to business or private customers. Non-professional users are not using hazardous substances in the course of their job or business (such as lifestyle block owners, general public using pesticides for domestic use, and so on)
<b>Public register name</b>	Name of the formulated substance to be mentioned in a publicly available register and that can be different from the final marketing name
<b>Relabelling</b>	Action of changing the label of a formulated substance intended to be imported in New Zealand in order to meet the EPA criteria for information content. This action can also occur when the formulated substance is repacked into packaging of different sizes
<b>Repackaging</b>	Movement or transfer of a substance from one container to another without a change in composition of the formulation or the labelling content, for sale or distribution
<b>Status Of Substance (SOS) advice</b>	The advice provided in a SOS advice request will include: <ul style="list-style-type: none"> <li>• Whether or not a substance is hazardous</li> <li>• Whether the substance is covered or not by an existing approval</li> <li>• The hazard classifications of the substance</li> <li>• The potential relevant approval pathway for the substance</li> </ul>
<b>Substance</b>	Any of the following: <ul style="list-style-type: none"> <li>• Any element, defined mixture of elements, compounds or defined mixture of compounds, either naturally occurring or produced synthetically, or any mixtures thereof;</li> <li>• Any isotope, allotrope, isomer, congener, radical or ion of an element or compound which has been declared by the Authority, by notice in the Gazette, to be a different substance from that element or compound;</li> <li>• Any mixtures or combinations of any of the above;</li> <li>• Any manufactured article containing, incorporating or including any hazardous substance with explosive properties.</li> </ul> <p>(section 2(1) HSNO Act)</p>

# 1. Applicant Details

## 1.1. Applicant

**Company Name:** NPD Ltd

**Contact Name:** [REDACTED]

**Job Title:** [REDACTED]

**Physical Address:** [REDACTED]

**Postal Address** (provide only if not the same as the physical): [REDACTED]

**Phone (office and/or mobile):** [REDACTED]

**Email:** [REDACTED]

## 1.2. New Zealand agent or consultant (if applicable)

**Company Name:** Technical Compliance Consultants (NZ) Ltd

**Contact Name:** [REDACTED]

**Job Title:** [REDACTED]

**Physical Address:** [REDACTED]

[REDACTED]

**Phone (office and/or mobile):** [REDACTED]

**Fax:** N/A

**Email:** [REDACTED]

## 1.3. Formal correspondence contact

All formal correspondence will be sent to the contact person identified here

**Company Name:** Technical Compliance Consultants (NZ) Ltd

**Contact Name:** [REDACTED]

**Job Title:** [REDACTED]

**Physical Address:** [REDACTED]

**Postal Address** (provide only if not the same as the physical): [REDACTED]

**Phone (office and/or mobile):** [REDACTED]

**Fax:** N/A

**Email:** [REDACTED]

**1.4. Invoice contact**

Only if different from 1.3. Formal correspondence contact - Invoice will be sent to the contact person identified here

**Company Name:**

**Contact Name:**

**Job Title:**

**Physical Address:**

**Postal Address** (provide only if not the same as the physical):

**Phone (office and/or mobile):**

**Fax:**

**Email:**

## 2. Information about the substance

### 2.1. Purpose statement or executive summary of the application for the public register

No more than 1,100 characters including the description of the formulated substance to be approved, e.g. Soluble Concentrate 350-400 g active ingredient/L

95 Octane Petrol containing 2-3% anti-knock additives

### 2.2. Type of application

Tick the box(es) that best describe your application

Has 'Status of Substance (SOS) Advice' been obtained from the EPA?

Yes  No

If yes, show the SOS reference number:

If yes, is the formulation of the substance different to that submitted at the SOS stage?

(In either case, please provide the composition to the EPA. This may be provided as part of the confidential appendix)

Yes  No

Is the product a new active ingredient to New Zealand?

Yes  No

Does the product contain any viable new organisms, including GMOs?

Yes  No

Does the product contain an ingredient originating from an organism (plant, animal, etc.)?<sup>1</sup>

Yes  No

Does the formulated substance contain any nanomaterial?

Yes  No

<sup>1</sup> If you tick 'Yes' and the product is being imported, then include a Biosecurity Clearance from the Ministry for Primary Industries New Zealand. If one has been provided with a previous application and is still valid, this may be referenced.

Is the product a new or existing chemical to New Zealand?

New chemical     Existing Chemical

Is this application for release or containment?

Release     Containment

Is this chemical a:

Industrial chemical     Biocide     Other (please specify) **Fuel**

### 3. Identity of the substance

**Please complete section 3A or 3B**

Any commercially sensitive information may be provided in the confidential appendix of this form

#### 3B. Formulated substance

**Only fill out this section if your application is for a formulated substance**

##### 3.1. Identity of the substance

Substance name: **NPD 100 PLUS**

Unique name for public register: **NPD 100 PLUS**

Manufacturer's name, business address and country of manufacture: **Nelson Petroleum Distributors Ltd, 13 McPherson Street, Richmond, Nelson, NZ**

Formulation type: **Mixture (Fuel with additives)**

##### 3.2. Physical and chemical properties of the substance

Provide as much information as possible on the physical and chemical properties of the substance (at 20°C and 1 atmosphere unless otherwise stated)

Appearance (colour, odour, physical state and form): **Purple hydrocarbon liquid, petroleum smell**

pH: **N/A**

Density: **0.73-0.79**

Vapour pressure: **69 kPa**

Boiling/melting point: **20°C**

Solubility in water: **Immiscible**



Water/Octanol partitioning co-efficient: >3 log POW

### 3.3. Regulatory status of the formulated substance

Jurisdiction	Regulatory status					Comment*
	Never approved	Pending	Approved	Restricted	Not renewed	
Australia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Canada	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Europe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Japan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
New Zealand	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
USA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other jurisdictions (specify in comments)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

\*For instance specify here under which regulation(s)/directive(s).

### 3.4. Composition details of the formulated substance

Full composition details for the substance must be provided to the EPA. These may be included in the confidential appendix

Refer to Confidential Appendix

## 4. Life cycle of the substance

### Manufacturing

Will your substance be manufactured in New Zealand?

Yes  No

### Importation

Will your substance be imported into New Zealand by air and/or sea?

Sea  Air

Will your substance be imported in bulk containers or packaged ready for sale?

Bulk Containers    Packaged ready for sale

If your substance will be imported in bulk containers, please describe these containers:

Will repackaging of your substance be carried out in New Zealand?

Yes    No

Please provide any additional relevant information relating to the importation of your substance:

Components are imported, formulation occurs in NZ.

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### Transport

Will your substance be transported by road, rail, air and/or sea within New Zealand?

Road    Sea    Rail    Air

Will your substance be transported on pallets?

Yes    No

Is so, what is the maximum number of containers per pallet?

Please provide any additional information relating to transport of your substance:

Transport will be handled by Fuel Tanker trucks

UN Number: 1203

UN Transport Hazard Classes: 3, 9

UN Packing Group Number (UN Model Regulations<sup>2</sup>): II

Marine Pollutant? (IMDG Code<sup>3</sup>): Yes

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### Packaging

Pack sizes: N/A

Type of packaging: Fuel tank, tanker truck

Type of closure (consider opening size, type of cap, child resistant packaging): Valve

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<sup>2</sup> UN Model Regulations mean Model Regulations annexed to the most recently revised edition of the Recommendations on the Transport of Dangerous Goods published by the UN

<sup>3</sup> IMDG Code means that International Maritime Dangerous Goods code, as amended

Please provide any additional information relating to the packaging of your formulated substance:  
Only sold at retail via fuel pumps

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### Storage

Provide details of how the substance will be stored, and the facilities it will be stored in:

Dedicated underground Petrol storage tanks

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### Warehouse storage

Provide details of how the formulated substance will be stored: N/A

Containment of spillages: As per fuel site regulations

Decontamination of areas, personnel, vehicles and buildings: As per fuel site regulations

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### Disposal

Disposal of damaged packaging, contaminated absorbents and other materials: As per fuel site regulations

Detailed instructions for safe disposal of the formulated substance and its packaging: As per fuel site regulations. Disposal of substance packaging not intended

Methods other than controlled incineration for disposal: As per fuel site regulations

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## 5. Intended uses of the substance

- Cosmetics/Personal e.g. perfume, cleaners for hand/body, eyes, oral cavity; deodorant; other personal products
- Domestic/Cleaning e.g. air freshener/deodoriser; cleaners – surface, dishwashing, laundry
- Education, Research & Development
- Electrical/electronic engineering industry
- Engineering e.g. adhesives/sealants, concrete, other
- Explosives
- Fuel and Oil e.g. fuel and fuel additives, oil: general automotive, other oil, hydraulic fluid
- Leather Processing e.g. colouring, preservative
- Manufacture of Other Chemicals
- Mining and Metal Extraction e.g. flotation agent, other

- Office Supplies e.g. photocopying/laser printing, inkjet printing, other office supplies
- Paper & Pulp e.g. surfacing chemicals, other additives
- Photographic e.g. film and paper manufacture, developing chemicals
- Plastics e.g. monomers, catalysts, base resins, additives: flame retardants, microbial, other
- Printing Industry e.g. acrylates/plate making, inks, other lithographic applications
- Refrigeration
- Surface Coatings e.g. auto: refinishing, original equipment manufacture; architectural: solvent based, water based, industrial coatings
- Textile Processing e.g. dyes, softeners, others
- Water Treatment
- Other (specify):

Please add any other information about how the substance is intended to be used:

## 6. HSNO Hazard Classifications of the Substance

The information you provide here will form the basis of your substance's HSNO classification.

Please consider each of the hazardous properties in the table below and provide information on those properties that trigger any threshold level for your substance. Use the justification column to record the reason for your classification. If your substance is a mixture, you can apply mixture rules to the hazardous components of the mixture. If you do this, you will need to provide information on the hazardous properties of each hazardous component of the mixture, and show your workings. See [Assigning A Product to an HSNO Approval](#) on our website for more information.

Please use the following abbreviations if needed.

**NA:** Not Applicable – For instance when testing is technically not possible. Testing for a specific endpoint may be omitted, if it is technically not possible to conduct the study as a consequence of the properties of the substance: e.g. very volatile, highly reactive or unstable substances cannot be used, mixing of the substance with water may cause danger of fire or explosion, or the radio-labelling of the substance required in certain studies may not be possible.

**ND:** No Data or poor quality data (according to Klimisch criteria) – where there is a lack of data.

**No:** Not Classified based on actual relevant data available for the substance – the data is conclusive and shows the threshold for classification is not triggered.

Hazard Class/Subclass	Substance classification	Justification
Examples	3.1C 6.1D	Flashpoint = 46 deg C (closed cup) Calculated LD50 = 1250 mg/kg (mixture rules)
Class 1 Explosiveness		
Class 2, 3 & 4 Flammability	3.1A	Flashpoint: -40°C. IBP: 20°C
Class 5 Oxidisers/Organic Peroxides		
Subclass 8.1 Metallic corrosiveness		
Subclass 6.1 Acute toxicity (oral)	6.1E	Calculated LD50 = 4100.02 mg/kg (mixture rules)
Subclass 6.1 Acute toxicity (dermal)		
Subclass 6.1 Acute toxicity (inhalation)		
Subclass 6.1 Aspiration hazard	6.1E	Mixture rules + Visc.: <1cSt
Subclass 6.3/8.2 Skin irritancy/corrosion	6.3B	Mixture rules

## Application Form Approval to import or manufacture a hazardous substance

Subclass 6.4/8.3 Eye irritancy/corrosion		
Subclass 6.5A Respiratory sensitisation		
Subclass 6.5B Contact sensitisation		
Subclass 6.6 Mutagenicity		
Subclass 6.7 Carcinogenicity	6.7B	Mixture rules
Subclass 6.8 Reproductive/ developmental toxicity		
Subclass 6.8 Reproductive/ developmental toxicity (known, presumed or suspected)		
Subclass 6.8 Reproductive/ developmental toxicity ( <i>via</i> lactation)		
Subclass 6.9 Target organ systemic toxicity <sup>4</sup>	6.9B	Mixture rules
Subclass 9.1 Aquatic ecotoxicity	9.1B	Mixture rules
Subclass 9.2 Soil ecotoxicity		
Subclass 9.3 Terrestrial vertebrate ecotoxicity		
Subclass 9.4 Terrestrial invertebrate ecotoxicity		

<sup>4</sup> identify classification for single and / or repeat dose target organ toxicity for oral, dermal or inhalation routes

## 7. Risks, costs and benefits

These are the positive and adverse effects referred to in the HSNO Act. It is easier to regard risks and costs as being adverse (or negative) and benefits as being positive. In considering risks, cost and benefits, it is important to look at both the likelihood of occurrence (probability) and the potential magnitude of the consequences, and to look at distribution effects (who bears the costs, benefits and risks).

You will need to consider the effects on the environment and human health and welfare, including any social effects.

In each section below, set out the information under the following three sub-headings:

- Costs and benefits which can be stated in monetary (dollar) terms
- Non-monetary risks and costs
- Non-monetary benefits.

You must fully complete this section, referencing supporting material. You will need to provide a description of where the information in the application has been sourced from, e.g. from; in-house research, independent research, technical literature, community or other consultation, and provide that information with this application.

### 7.1. Identify all of the potential risks, costs and benefits of the substance(s)

Identification is the first step in assessing risks, costs and benefits. It is important to think about the source of the risk, i.e. the way in which the risk is created (the exposure pathway), and then the consequences and likelihood of exposure.

You should try to think as widely as possible about every potential risk, cost and benefit and give a brief description.

NPD 100 PLUS substance has toxic and ecotoxic hazardous classifications but will have limited adverse exposure risks as the intended uses are identical to current fuel supply systems, i.e. only at retail fuel stations.

The substance is not packaged for individual sale, nor likely to be accessible to the general public except as far as the public currently obtains petrol, such as fueling a vehicle or home equipment.

Potential risks arising from the use of the substance have been reviewed in-house and are based on long term knowledge from the manufacture and use of existing fuel systems. The potential adverse events that might arise during the life cycle of these substances are summarised in Table 1.

Table 1: Summary of potential adverse events

Life cycle step	Potential adverse event
Importation of components & storage	<ul style="list-style-type: none"> <li>* Leak or spillage of components</li> <li>* Labels missing or damaged</li> <li>* Incorrect information about material</li> <li>* Incorrect packaging</li> <li>* Components not meeting specification</li> </ul>
Formulation of the product	<ul style="list-style-type: none"> <li>* Leak or spillage of components</li> <li>* Incorrect information about material</li> <li>* Product not meeting specification</li> <li>* Containers damaged or leaking</li> <li>* Inadequate packaging or documentation</li> <li>* Fire</li> </ul>
Transport to industrial timber treatment site	<ul style="list-style-type: none"> <li>* Spillage from transport accident, resulting in exposure to people (eye or skin contact) or contamination of environment (water, soil)</li> <li>* Containers damaged or leaking</li> <li>* Transported with incompatible substances</li> <li>* Inadequate packaging or documentation</li> <li>* Fire</li> </ul>
Storage at retail fuel site	<ul style="list-style-type: none"> <li>* Underground tanks damaged or leaking</li> <li>* Inadequate documentation and procedures</li> <li>* Proximity of unauthorised people during refilling, e.g. general public</li> <li>* Fire</li> </ul>
Dispensing	<ul style="list-style-type: none"> <li>* Incorrect manner of refuelling/filling</li> <li>* Mixing or contamination with incompatible materials</li> <li>* Spillage during refuelling/filling</li> <li>* Leak from dispenser or piping</li> <li>* Consumer exposure, e.g. lack of adequate protective equipment, information, warnings</li> <li>* Breathing in vapours as fuel tank/container is filled</li> <li>* Poor communication between consumers or consumer and retail staff</li> </ul>
Use as fuel	<ul style="list-style-type: none"> <li>* Exposure (dermal contact) to fuel as consumer uses product to refuel equipment at home (i.e. lawn mower)</li> <li>* Product not used in appropriate equipment</li> <li>* Leaching of active ingredients from product</li> <li>* Product used incorrectly (in use)</li> </ul>



Disposal	<ul style="list-style-type: none"> <li>* Disposing of product to sewer, drain or waterway</li> <li>* Disposal of treatment chemical residues or sludges</li> <li>* Incineration (intended or unintended)</li> </ul>
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These potential adverse events were then considered for possible risks that might arise taking into account the hazardous classifications for the substances. These possible risks are summarised in Table 2.

**Table 2: Potential Adverse Effects and Possible Risks for the Product**

Adverse event	Possible causes	Exposure route	Possible risk
Unintentional release or spillage of substance to environment	<ul style="list-style-type: none"> <li>• Transport accident (road) or shipping (across Cook Strait) resulting in spillage</li> <li>• Faulty or damaged containers or tanks</li> <li>• Spillage when transferring or dispensing product</li> <li>• Incorrect disposal of substances or residues</li> </ul>	<ul style="list-style-type: none"> <li>• Contamination of waterways, sewers, seawater</li> <li>• Contamination of soil</li> <li>• Skin contact with substance</li> <li>• Splashes of liquid into eyes or rubbing eyes with contaminated hands or gloves or clothing</li> <li>• Air emissions or chemical residue</li> </ul>	<ul style="list-style-type: none"> <li>• Toxic effects to aquatic organisms (fresh and salt water)</li> <li>• Possible effects on soil ecosystem</li> <li>• Possible effects on native flora or fauna</li> <li>• Effects on human health (workers, consumers) through inhalation, eye or skin contact</li> <li>• Unintended Fire</li> </ul>
Short term exposure to substance by people	<ul style="list-style-type: none"> <li>• Transport accident (road or sea)</li> <li>• Disposal</li> <li>• Faulty or damaged containers or tanks – staff, transport operator, consumer</li> <li>• Spillage when dispensing</li> <li>• Lack of adequate personal protective equipment, or zero protective</li> </ul>	<ul style="list-style-type: none"> <li>• Contact with skin or eyes</li> <li>• Inhalation of mist, aerosols</li> <li>• Ingestion of liquid (deliberate or by child or pet)</li> </ul>	<ul style="list-style-type: none"> <li>• Effects on human health</li> <li>• Harmful toxic effect if ingested</li> <li>• Effects to eyes and skin</li> </ul>

	equipment, as per expected consumer use		
Long term exposure to substance	<ul style="list-style-type: none"> <li>• Large spillage with long term contamination</li> <li>• Lack of adequate personal protective equipment (workers)</li> <li>• Repeated contact with product (during consumer use)</li> </ul>	<ul style="list-style-type: none"> <li>• Contamination of soil or waterway, storm water (oral, dermal, inhalation of dust)</li> <li>• Inhalation of mist, skin or eye contact with liquid</li> </ul>	<ul style="list-style-type: none"> <li>• Toxic effects to aquatic organisms</li> <li>• Potential effects on native flora or fauna</li> <li>• Potential effects on soil ecosystem</li> <li>• Possible Chronic effects e.g. organs or systems, cancer</li> </ul>

### Environmental risks

If not prevented or contained, or an adverse event controlled, a spillage of NPD 100 PLUS would impact negatively on water ecosystems. NPD 100 PLUS triggers a 9.1B aquatic classification, much like regular Petrol. Any spillage has the potential to lead to contamination of sewers, soil or ground water. The substance is not miscible in water, but adverse effects might eventuate for aquatic organisms. All processing locations are done over an interceptor system, eliminating the risk of environmental contamination.

Environmental contamination is most likely during consumer refuelling, but due to current practices and emergency systems used in retail petrol stations, this chance is minimal and not any different from current products in use. Environment contamination after the fact due to use of the product (exhaust from combustion) is still present, but emissions have been reduced compared to current fuels.

The use of NPD 100 PLUS poses no additional hazard to existing refuelling processes or systems at workplaces or retail sites.

### Health risks

#### **Public health effects**

Adverse public health effects could arise in the event of transport accidents that impact on people (the drivers and passengers of any vehicles involved), bystanders and emergency services. NPD 100 PLUS will only be transported by tanker trucks currently in use in NZ. The substance is classified as 6.1E (for acute toxicity and aspiration), 6.3B (irritancy), 6.7B (suspected carcinogen), and 6.9B (suspected target organs systemic toxicant).

Exposure to spillages could result in health effects if persons were not wearing personal protective equipment. Exposure to eyes could cause eye irritancy. However, the use of holding tanks with identifying labels and hazard symbols should alert people to the danger that the liquid is a hazardous substance and precautions should be taken.

For consumers, the product is stored in underground tanks and only starts dispensing when the nozzle is inserted into the fuel filler, removing the need for PPE. The only real chance for consumers to get exposed is through exhaust fumes from cars, but these are no different from current fuels.

#### ***Worker/operator/handler health effects***

The manufacturing facility is on an industrial site and is well-ventilated. It is unlikely that any emissions or aerosols would build up in a confined space and pose a health risk, e.g. irritancy. The substance also has chronic health hazardous classifications (6.7B, 6.9B) that will need to be managed by good occupational and operational work practices.

NPD 100 PLUS will be used in a 'closed system' as per normal retail fuel sites. Consumer would rarely directly handle the product, unless they have taken a moderate amount home to refuel their petrol-powered equipment. Workers at the retail fuel sites reacting to spills have low exposure risks provided protective equipment is used.

#### **COSTS AND BENEFITS**

##### **Indirect costs**

Costs that could be attributable to use of these substances would be a consequence of a spillage from a transport accident or storage tank leaking or failing. The cost of any spillage adversely affecting the environment or people will be determined by the volumes involved and costs in cleaning up.

The active ingredients are already used in New Zealand and no additional indirect costs have been identified from previous uses with other types of anti-knock fuel additives.

##### **Direct costs**

NPD 100 PLUS is an alternative to other fuels currently on market. Having cost effective high-octane formulations available improves equipment performance while allowing the NZ fuel industry to remain competitive in domestic and possibly export markets.

The potential future users (retail and workplace sites) in New Zealand already have facilities that deal with petrol. The possibility of investment into another storage tank is non-zero, but highly unlikely as the users would simply swap out the fuel being used. Still, some may wish to sell this product alongside other types of fuel, which would necessitate juggling inventory or getting a new tank installed. Petrol filters may also have to be replaced with one that works more effectively with NPD 100 PLUS, but filters are changed regularly enough that this cost isn't prohibitive.

No specific disposal costs have been identified for these substances that would not apply to other fuel systems. The product would be stored in specific tanks and transported by refillable tanker, eliminating any disposable containers. The product is then used within a combustion engine, leaving no waste product to dispose of.

Additionally, the active ingredient has been shown to discolour plastic and/or paint when exposed to UV light. As such, spills on vehicles from poor filling practice and some external fuel systems may show discolouration which may require additional cost to fix, but the part of the market that would be affected by this issue is very small.

## Benefits

There are many fuel formulations already available in New Zealand. Currently, there are three grades of petrol sold in New Zealand with different 'octane' numbers: 91, 95 and 98. The octane rating of petrol is a measure of that fuel's anti-knock rating – that is the measure of a fuel's ability to burn stably, without detonation, at a selected compression ratio. The higher the compression of the engine, the higher the octane rating needs to be to prevent knocking. Knocking, otherwise known as pinking, is characterised by a banging noise coming from within the engine at high throttle settings at low engine revolutions and can lead to damage to engine components.

Engines designed to operate on high-octane fuels also have their timing adjusted for those fuels. When an engine is operated on a fuel with the wrong octane rating, it can either lead to knocking and resulting engine damage, or to lowered combustion efficiency - or both.

Oil companies blend different petrol components together depending on the octane number, vapour pressure, and other properties required for a particular petrol product, as each component has its own properties, including octane number. By blending carefully, the companies can come up with a formula that has the properties they require for a given type of fuel, including octane.

By using our own formulations in NZ, our petroleum based companies can create formulas useful for NZ conditions and requirements, which can be an improvement over current fuels available and allow for NZ to create a more efficient product that even other countries may wish to use over current options.

NPD 100 PLUS is one such product – it is at least 2 octane above the next available fuel (98 Unleaded) which allows tuned engines to perform optimally, reducing fuel consumption and harmful emissions. In addition, NPD 100 PLUS is usually dispensed with a different filter from what comes standard in other retail spaces. These high performance filters in the dispensers are 'absolute rated' with an efficiency rating of 99.5% for high performance engines as opposed to the efficiency rating of approximately 75% on standard filters used with 98 Unleaded currently.

NPD 100 PLUS enables modern high compression / low emission engines to reach their full potential, as well as showing improved cleaning of the engine and fuel system to further reduce harmful emissions and reduce maintenance costs. Fuel economy is also improved compared to other products currently in use. Finally, the shelf life of the petrol has been shown to be extended – tests done in NZ show that the Octane rating was maintained for an excess of 12 months.

## 7.2. Provide an assessment of those risks, costs, and benefits identified in Section 7.1

This section excludes risks, costs, and benefits which relate specifically to Māori taonga or to international agreements. See Sections 7.3 and 7.4 for those aspects.

A full assessment must be provided of all the risks, costs and benefits identified in Section 7.1. For the risk assessment our preferred format is quantitative, however, you may also provide a qualitative assessment if you can justify this. If you are providing your risk assessment in supporting documentation with this application you can provide a summary of all the risks this in this section.

Please note that if you do not complete a full assessment of all risk, costs and benefits this may result in the EPA requesting further information from you, which will mean that your application takes longer to process.

The risks that are likely to be significant are from (1) a spillage of any of the substances resulting in contamination of soil and/or a waterway and possible involuntary exposure to bystanders, (2) exposure to fuel operators to the product by direct contact with the liquid during transfer or filling, and (3) exposure to the general public to the product by direct contact with the liquid during filling of equipment.

These risks have been summarised in Table 3.

No additional direct or indirect costs have been identified. NPD 100 PLUS would be a replacement for existing products so existing equipment and facilities can be used.

NPD 100 PLUS is the result of formulation and manufacturing improvements to optimise octane rating and improve efficiency of engines, resulting in better fuel economy, better running engines, and reduced emissions.

**Table 3: The magnitude of risk arising from most likely potential events**

Event that leads to exposure	Distribution of effects (geographic)	Distribution of effects (demographic)	Distribution of effects (temporal)	Reversible/ Irreversible	Voluntary/ Involuntary	Magnitude (Consequence)
Accidental discharge into water or onto land from spillage	Localised	Users Community	Short to long term (depending on size of spillage and receiving environment)	Reversible/ Irreversible	Involuntary	Minor - Moderate
Bystander exposure (spillage)	Localised	Consumers	Short term	Reversible	Involuntary	Minimal
Occupational exposure	Localised	Manufacturing, Retail, Transport workers	Short term	Reversible	Voluntary	Minimal
Incorrect disposal	Localised	Community	Short term	Reversible	Involuntary	Minimal

**Definition of the Magnitude descriptions used to assess the qualitative magnitude of risk**

Description	Definition
Minimal	Mild, reversible effect on human health (1-2 people) Environmental effects highly localised/contained- minimal environmental impact
Minor	Mild, reversible effect on human health (up to 10 people) Environmental effects localised and minor - reversible environmental impact
Moderate	Reversible, adverse effect on human health (> 10 people) Environmental effects localised and moderate - reversible environmental impact
Major	Serious, reversible, adverse effect on human health (>10 people) Significant, irreversible, adverse effect on human health (up to 10 people) Environmental effects localised and irreversible - no species loss
Massive	Serious, irreversible, adverse effect on human health (> 10 people) Environmental effects widespread and irreversible - species loss

**7.3. Provide an assessment of any risks, costs and benefits which arise from the kaitiaki relationship of Māori and their culture to the environment**

Please note that consultation with Māori may be appropriate for this application. Please refer to the EPA policy 'Engaging with Māori for applications to the EPA' which can be found on the EPA website ([www.epa.govt.nz](http://www.epa.govt.nz)) or contact the EPA for advice.

An example of the issues to consider include whether the substance poses any risk to native or valued species, or waterways.

NPD Ltd is not aware of any adverse impact that the manufacture and use of NPD 100 PLUS would have on Maori cultural, spiritual, ethical or socio-economic values.

The active ingredient, n-methyl aniline, is already used as an 'anti-knock' or octane improver for regular petrol, and the ingredient is approved for use in New Zealand. Approval of NPD 100 PLUS therefore introduces no new components, but is an improved combination of existing ingredients.

Transfer and use of NPD 100 PLUS is in a series of controlled 'closed' systems. The significant risk to be controlled is to avoid contamination of aquatic environments. The retail sites that would use this product are required to have resource consents that will effectively manage any existing or potential issues that might impact on Treaty of Waitangi issues.

NPD Ltd believe this substance can be manufactured, stored, transported and used safely for the purposes intended without adverse effects on issues concerning traditional food sources or natural resources.

**7.4. Provide an assessment of any risks, costs or benefits to New Zealand's international obligations**

Please show if approving or declining the substance would have any impact upon New Zealand's international obligations

NPD Ltd is unaware of any relevant international agreements that would affect the substances in this application

**7.5. Provide information on the proposed management of the substance**

Please outline how the risks of the substance will be managed. This may include default controls triggered by the hazardous property classification(s) and reference to Codes of Practice or to standard operating procedures that will be followed

The lifecycle of NPD 100 PLUS is described in Section 5. NPD 100 PLUS would be transported to retail sites for storage and dispensing as needed by the sites customers.

The relevant Controls specified in the HSWA (Hazardous Substances) Regulations and Hazardous Substances (Hazardous Property Controls) EPA Notice will be implemented. It is noted that the Controls for the substance include the possibility for Tracking, triggered by the 3.1A classification. These Controls would be waived given the fact that it is still mostly Petrol, which is exempt for Tracking.

In addition, other relevant regulations for these substances are as follows:

**Resource Management Act 1991**

The NPD Ltd manufacturing/storage site and those retail sites storing/dispensing this product are required to operate with consents specific to their location.

**Land Transport Act 2005**

The substances will be transported by Fuel Tanker trucks, ensuring they meet the specifications required for holding and transporting Petrol.

Transport of these substances will be by operators who comply with New Zealand licensing requirements to carry dangerous goods. NPD Ltd will provide an Emergency response guide and Safety Data Sheet with each dispatch of goods.

The requirements of NZ5433:2012, Transport of Dangerous Goods on Land, will be followed. These include controls for labelling, storage, packaging size and type. NPD 100 PLUS would be transported as UN1206, Class 3, GASOLINE or PETROL.

**Health and Safety at Work Act 2015**

This legislation covers the need to safeguard employee's safety and well-being.

Information and guidance (Codes of Practices) on the safe use of hazardous substances is available on WorkSafe NZ's website. Workplace exposure standards are available for copper.

Supplementary to all the above, NPD Ltd can provide technical data sheets to operators handling/transporting their products. This helps to ensure operators remain aware of the controls necessary to safeguard their own health but also to protect the general public and the environment.

NPD Ltd also provides on-site training for workers dealing in manufacture and storage.

**7.6. Provide an overall evaluation of the combined impact of all of the risks, costs and benefits set out in sections 7.2, 7.3 and 7.4**

Please express a view on the relative importance of the different risks, costs and benefits and how they should be brought together in making a decision

NPD 100 PLUS is fuel formulation that uses n-methyl aniline as an additive to improve the fuel's octane rating. This fuel is manufactured/blended in New Zealand and transported by fuel tanker to retail sites where it is stored in underground fuel tanks. The general public will not normally come into contact with the substance as NPD 100 PLUS is dispensed directly into fuel tanks on the retail site. Spillage is still possible but unlikely.

No additional costs or risks have been identified for the substances. NPD 100 PLUS is a new product formulated to optimise fuel and engine efficiencies. The next table summarises the levels of risk with and without controls.

**Table 4: Overall Risk Assessment for NPD 100 PLUS**

<b>Risk</b>	<b>Probability of adverse effect (p)</b>	<b>Seriousness of effect (s)</b>	<b>Risk score (p x s)</b>	<b>Level of risk with no controls</b>	<b>Level of risk with controls</b>
Fire (3.1A)	2	5	10	High	Low
Oral exposure (6.1E)					
- workers	1	2	2	Low	Negligible
- public	1	2	2	Low	Negligible
Aspiration (6.1E)					
- workers	1	4	4	Low	Negligible
- public	1	4	4	Low	Negligible
Irritation (skin); 6.3B					
- workers	3	2	6	Medium	Low
- public	1	2	2	Low	Negligible
Irritation (eyes); [Not Classified]					
- workers	2	2	4	Low	Negligible
- public	1	2	2	Low	Negligible
Repeated/prolonged exposure (6.7B)					
- workers	3	2	6	Medium	Low
- public	1	2	2	Low	Negligible
Repeated/prolonged exposure (6.9B)					
- workers	2	3	6	Medium	Low
- public	1	3	3	Low	Negligible
Waterways contamination (9.1B)					
- manufacture	3	5	15	High	Low
- public	2	5	10	High	Low



**KEY to table:**

Probability is scored for 1 = very low to 5 = very high.

Seriousness of the risk is from 1 = little effect to 5 = large effect.

The risk scores are as:

1 – 2	Negligible
3 – 5	Low
6 – 12	Medium
13 – 18	High
19 – 25	Critical

## 8. Pathway determination and rapid assessment

Under the HSNO Act, applications may be processed under different pathways, including a rapid assessment. The pathway for your application will be determined after its formal receipt, based on the data provided in this application form. If you would like your application to be considered for rapid assessment (as per the criteria below), we require you to complete the attached statutory declaration and provide a signed hard copy.

Please note that the EPA will not be able to proceed with the rapid assessment without the statutory declaration.

### 8.1. Rapid assessment

Under the HSNO Act, a hazardous substance may be approved under a rapid assessment if one of the three following options is satisfied. Please show the section that is relevant to your application.

A substance having a similar composition and similar hazardous properties has been approved	<input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, please give the name of the reference substance:
The substance has one or more hazardous properties and each has the least degree of hazard for that property; or	<input type="checkbox"/> Yes <input type="checkbox"/> No
The substance has been formulated so that one or more of its hazardous properties has a lesser degree of hazard than any substance that has been approved under the Act.	<input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, please give the name of the reference substance:

**8.2. Statutory Declaration**

I [full name], of [address], [occupation/position], being the applicant or authorised to do so on behalf of the applicant, verify that the information contained in this application for [substance name] is true and correct. I make this solemn declaration conscientiously believing the same to be true and by virtue of the Oaths and Declarations Act 1957.

\_\_\_\_\_  
Signature

Declared at \_\_\_\_\_ on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ before me.

\_\_\_\_\_  
Witness signature

[name] Barrister or Solicitor of the High Court of New Zealand

[or Justice of the Peace, Notary Public, or other person authorised to take a statutory declaration]

## 9. Checklist

This checklist is to be completed by the applicant

Application		Comments/justifications
All sections of the application form completed or you have requested an information waiver under section 59 of the HSNO Act	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (If No, please discuss with an advisor to enable your application to be further processed)	
Confidential data as part of the confidential form. Please note the EPA strongly encourages applicants to provide as much information as possible in the main body of the application form unless there is a genuine argument that it is commercially sensitive.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Supplementary optional information attached:		
<ul style="list-style-type: none"> <li>Copies of additional references</li> </ul>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> <li>Letter(s) of access</li> </ul>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	N/A
<ul style="list-style-type: none"> <li>Relevant correspondence</li> </ul>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> <li>Draft label</li> </ul>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	N/A – DG labels only
<ul style="list-style-type: none"> <li>Draft Safety Data Sheet (SDS)</li> </ul>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Administration		
Are you an approved EPA customer?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes are you an: Applicant: <input type="checkbox"/> Agent: <input type="checkbox"/>	
If you are not an approved customer, payment of fee will be by: <ul style="list-style-type: none"> <li>Direct credit made to the EPA bank account (preferred method of payment) Date of direct credit:</li> <li>Cheque for application fee enclosed</li> </ul>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Payment to follow  <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Payment to follow	Please send invoice
Electronic signed copy of application e-mailed to the EPA	<input checked="" type="checkbox"/> Yes	

Physical copy of signed statutory declaration sent to the EPA, (rapid assessment only)

Yes

N/A

### Signature of applicant or person authorised to sign on behalf of applicant

- I am making this application, or am authorised to sign on behalf of the applicant or applicant organisation.
- I have completed this application to the best of my ability and, as far as I am aware, the information I have provided in this application form is correct.



11/05/2020

S

Date

### Request for information waiver under section 59 of the HSNO Act

- I request for the Authority to waive any legislative information requirements (i.e. concerning the information that has been supplied in my application) that my application does not meet (tick if applicable).

Please list below which section(s) of this form are relevant to the information waiver request: