MATERIAL SAFETY DATA SHEET
Powerplus Fuel

SECTION 1: IDENTIFICATION OF MATERIAL AND SUPPLIER

Product Name:	**Powerplus Fuel**
Other Names:	Powerplus 98, 100, 102, 105, 108 & 110
Product Codes/Trade Names:	N/A
Recommended Use:	Fuel for spark ignition engines designed to run on unleaded fuel.
Applicable In:	Australia
Supplier:	Powerplus Fuel
Address:	118 Swann Drive, Derrimut Victoria-3030
Telephone:	+61 3 93690220
Email Address:	info@acbgroup.com.au
Facsimile:	+61 3 93690883
Emergency Phone Number:	000 Fire Brigade and Police (available in Australia only).
Poisons Information Centre:	13 11 26 (available in Australia only).

This Material Safety Data Sheet (MSDS) is issued by the Supplier in accordance with National standards and guidelines from the Australian Safety and Compensation Council (ASCC, formerly National Occupational Health and Safety Commission - NOHSC). The information in it must not be altered, deleted or added to. The Supplier will not accept any responsibility for any changes made to its MSDS by any other person or organization. The Supplier will issue a new MSDS when there is a change in product specifications and/or ASCC standards, codes, guidelines, or Regulations.

SECTION 2: HAZZARD INDENTIFICATION

Hazards Identification
HAZARDOUS SUBSTANCE.
DANGEROUS GOODS.
Hazard classification according to the criteria of NOHSC.
Dangerous goods classification according to the Australia Dangerous Goods Code.

Risk Phrases

R12: Extremely flammable
R45: May cause cancer
R46: May cause heritable genetic damage
R38: Irritating to skin
R63: Possible risk of harm to the unborn child
R65: Harmful: may cause lung damage if swallowed
R67: Vapours may cause drowsiness and dizziness
R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R11: Highly flammable

Safety Phrases

S16 Keep away from sources of ignition - No smoking.
S2 Keep out of reach of children.
S23(4) Do not breathe vapour.
S24 Avoid contact with skin.
S29 Do not empty into drains.
S43(1) In case of fire use alcohol resistant foam/dry powder/CO2. Never use water.
S45 In case of accident or if you feel unwell seek medical advice immediately
S53 Avoid exposure - obtain special instructions before use.
S61 Avoid release to the environment. Refer to special instructions/safety data sheet.
S62 If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

Human Health Hazards

Hydrocarbon Components: May cause cancer. Product classified as a Category 2 carcinogen. May cause heritable genetic damage. Product classified as a Category 2 mutagen. Possible risk of harm to the unborn child. Product is classified as a Category 3 Reproductive toxicant. Irritating to skin. Harmful, may cause lung damage if swallowed. Aspiration into the lungs may cause chemical pneumonitis which can be fatal. Vapours may cause drowsiness and dizziness. This product contains benzene, which is known to cause leukaemia and n-hexane, which has been shown to metabolize to compounds which are neuropathic. This product contains toluene. There are indications from animal studies that prolonged exposure to high concentrations of toluene may lead to hearing loss.

Safety Hazards
Extremely flammable. Risk of generating electrostatic charges during handling. Liquid evaporates quickly and can ignite leading to a flash fire, or an explosion in a confined space.

Environmental Hazards
Toxic to aquatic organisms. May cause long term adverse effects in the aquatic environment. Unlike other gasoline components, ethanol is miscible with water.

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

Preparation Description

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. Contains oxygenated hydrocarbons, including ethanol or other alcohols. May also contain several additives at <0.1% v/v each. Dyes and markers can be used to indicate tax status and prevent fraud.

Chemical Name:	Synonyms	Proportion:	CAS Number:
Gasoline low boiling point naptha	----------	99.7%-100%	86290-81-5
Antioxidants, corrosion inhibitors, metal deactivators, dyes and proprietary performance improving packages.	----------	0-15%	Mixture
Ethanol	--------	0-9%	64-17-5

SECTION 4: FIRST AID MEASURES

If poisoning occurs, contact a doctor or Poisons Information Centre.

Swallowed: DO NOT INDUCE VOMITING. Protect airway if vomiting begins. Give nothing by mouth. If breathing but unconscious, place in recovery position. If breathing has stopped, apply artificial respiration. OBTAIN MEDICAL ATTENTION IMMEDIATELY.

Eyes: Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.

Skin: Wash skin with water using soap if available. Note that contaminated clothing may be a fire hazard. Contaminated clothing should be soaked with water before being removed. It must be laundered before reuse. When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.

Inhaled: Remove to fresh air. If breathing but unconscious, place in the recovery position. If breathing has stopped, apply artificial respiration. If heartbeat absent, give external cardiac compression. Monitor breathing and pulse. Seek urgent medical advice.

First Aid Facilities: First aid kits, safety showers, eye wash stations

Advice to Doctor: Treat symptomatically. In cases of ingestion, consider gastric lavage. Gastric lavage must only be undertaken after cuffed endotracheal intubation in view of the risk of aspiration.

Administration of carbon for medicinal use (carbo medicinalis) may reduce absorption from the digestive tract. In cases of chemical pneumonitis, antibiotic and corticosteroid therapy should be considered, but only under expert guidance and with special care facilities. High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimize tissue damage and loss of function.

SECTION 5: FIRE FIGHTING MEASURES

Flammability:	Product is Highly Flammable. Isolate from sources of heat, naked flames ,sparks and oxidising materials.Take precautions against discharges of static electricity Earth and bond all process equipment including tanks and drums. Ensure ventilation is adequate to prevent build up of explosive atmosphere. Refer to AS 1940 - Storage and handling of flammable and combustible liquids and AS 2865 - Safe working in a confined space, for more specific information on these subjects.
Suitable extinguishing media:	Use foam, CO2 or powder to extinguish fire.
Hazards from combustion products:	Combustion products include oxides of carbon.
Special protective precautions and equipment for fire fighters:	Flammable liquid. Keep storage tanks, pipelines, fire exposed surfaces etc cool with water spray. Shut off any leak if safe to do so and remove sources of re-ignition. Vapour/air mixtures may ignite explosively and flashback along the vapour trail may occur. Highly flammable liquid. Use water to cool exposed containers. Heating can cause expansion or decomposition leading to violent rupture of containers. If safe to do so, remove containers from path of fire. Spills and leaks may be washed away with copious volumes of water, fog or spray. For major fires or where the atmosphere is either oxygen deficient or contains unacceptable levels of combustion products, fire fighters must wear self contained breathing apparatus with full face-mask and protective clothing.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedure:	Wear appropriate personal protective equipment. Extinguish or remove all sources of ignition and stop leak if safe to do so. Contain the spill with sand or earth and take up with a vacuum truck or absorb with absorbent material, sand or earth. Keep away from heat, naked flames and sparks. Place used absorbent in suitable sealed containers for disposal.

SECTION 7: HANDLING AND STORAGE

Handling:	Never siphon by mouth. When using do not eat, drink or smoke. Avoid contact with skin, eyes and respiratory system. 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 earthed. Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Prevent spillages. 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. In addition to any specific recommendations given for controls of risks to health, safety and the environment, an assessment of risks must be made to help determine controls appropriate to local circumstances.
Storage:	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. Take suitable precautions when opening sealed containers,

as pressure can build up during storage. Keep in a bunded area with a sealed (low permeability) floor, to provide containment against spillage. Prevent ingress of water. 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.

Incompatibilities: Synthetic materials such as plastics and fibreglass may be unsuitable for containers or container linings depending on the material specification and intended use. Examples of materials to avoid are: natural rubber (NR), nitrile rubber (NBR), ethylene propylene rubber (EPDM), polymethyl methacrylate (PMMA), polystyrene, polyvinyl chloride (PVC), polyisobutylene. However, some may be suitable for glove materials.

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.

Tank Cleaning Cleaning, inspection and maintenance of storage tanks is a specialist operation that requires the implementation of strict procedures and precautions. These include issuing of work permits, gas-freeing of tanks, using a manned harness, lifelines, and wearing air-supplied breathing apparatus. Prior to entry and whilst cleaning is underway, the atmosphere within the tank must be monitored using an oxygen meter and explosimeter. Additional precautions are required where the tank may previously have contained leaded gasoline.

Recommended Materials: For containers or container linings, use mild steel or stainless steel. Aluminium may also be used for applications where it does not present an unnecessary fire hazard. Examples of suitable materials are: high density polyethylene (HDPE), polypropylene (PP), and Viton (FKM), which have been specifically tested for compatibility with this product. For container linings, use amine-adduct cured epoxy paint. For seals and gaskets use: graphite, PTFE, Viton A, Viton B.

Other Information: Ensure that all local and international regulations regarding handling and storage facilities are followed. The following activities have been associated with high levels of exposure to gasoline vapours: Top-loading of tankers, open ship loading by deck crew, drum filling/emptying and laboratory testing (particularly sample bottle washing).

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Standards: National Occupational Exposure Standard (NES) Australian Safety & Compensation Council, ASCC (formerly NOHSC)
Powerplus fuel
Ethanol in Powerplus fuel
TWA - 1000 ppm (1880 mg/m3)

[NOHSC:1003(1995)] - 3rd Edition

Notes: All occupational exposures to atmospheric contaminants should be kept to as low a level as is workable (practicable) and in all cases to below the National Standard.
These Exposure Standards are guides to be used in the control of occupational health hazards.
These Exposure Standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.
TWA (Time Weighted Average): the time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.
According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.
STEL (Short Term Exposure Limit): the average airborne concentration over a 15 minute period that should not be exceeded at any time during a normal eight-hour work day.

Biological Limit Values: N/A

ENGINEERING CONTROLS

 Ventilation: The level of personal protection and the types of controls necessary will vary depending on exposure conditions. Select controls based on a risk assessment of local circumstances. Use sealed systems as far as possible. Use local, intrinsically safe, exhaust ventilation if there is a risk of inhalation of vapours, mists, or aerosols. Provide eye washes and showers for emergency use.

 Special Consideration for Repair &/or Maintenance of Contaminated Equipment: Empty containers retain residue (liquid and/or vapour) and are dangerous. Do not pressure cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition.

Vapour is heavier than air – prevent concentration in hollows or sumps. Do not enter confined spaces where vapour may have collected. Keep containers closed when not in use.

PERSONAL PROTECTION

Personal Hygiene	**Body Protection** Minimise all forms of skin contact. In the event of risk from splashing wear e.g. Nitrile, PVC, or neoprene rubber apron. Wear safety shoes or boots which are chemical and petroleum distillate resistant.
Skin Protection:	Select gloves tested to a relevant standard (e.g. Europe EN374, US F739). When prolonged or frequent repeated contact occurs, Nitrile gloves may be suitable. (Breakthrough time of > 240 minutes). For incidental contact/splash protection Neoprene or PVC gloves may be suitable. Breakthrough times for gloves varies depending on, e.g. chemical resistance, material thickness, frequency and duration of contact. Selection should also take into account other usage requirements, e.g. dexterity, heat resistance, other chemical substances handled. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
Eye Protection:	**Eye Protection** Wear safety glasses or full face shield if splashes are likely to occur.
Respiratory Protection:	Care should be taken to keep exposures below applicable occupational exposure limits. If this cannot be achieved, use of a respirator fitted with an organic vapour cartridge combined with a particulate pre-filter should be considered. Where air-filtering respirators are unsuitable (e.g. where airborne concentrations are high, there is a confined space or a risk of oxygen deficiency) use appropriate positive pressure breathing apparatus.
Thermal Protection:	None should be needed under normal circumstances.
Smoking & Other Dusts	Smoking must be prohibited in all areas where this product is used - see safety information on flammability.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Mobile clear colourless liquid/ pale straw/ yellow.
Odour:	Characteristic
pH, at stated concentration:	N/A
Vapour pressure:	30 to 90 kPa at 20ºC. Vapour pressure is often determined by legislation, and varies with season
Vapour Density:	> 3 (Air = 1)
Boiling Point (˚C):	Initial - 25°C circa Final - 215°C circa
Freezing/Melting Point (˚C):	No data available.
Solubility:	Partly soluble due to the content of oxygenated components.
Specific Gravity (H_2O = 1):	720 to 775 kg/m3 at 15°C.
FLAMMABLE MATERIALS	
Flash Point:	<-40ºC (Method: PMCC).
Flash Point Method:	PMCC
Flammable (Explosive) Limit - Upper:	6-8%(V/V) maximum.
Flammable (Explosive) Limit – Lower:	1%(V/V) minimum.
Auto ignition Temperature:	>250ºC.
ADDITIONAL PROPERTIES	
Evaporation Rate	No data available.
Volatile Organic Compounds Content (VOC)	(as specified by the Green Building Council of Australia) Not Applicable
% Volatiles	No data available.

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability: Stable. Avoid strong oxidising agents.

SECTION 11: TOXICOLOGICAL INFORMATION

Health effects information is based on reported effects in use from overseas and Australian reports.
Toxicological Data:

Effects: Acute
Swallowed: Harmful. May cause lung damage if swallowed.
Eyes: Mildly irritating to the eyes.
Skin: Irritating to skin. Will cause redness and inflammation.
Inhaled: Inhalation may cause irritation to the respiratory system. Prolonged exposure to vapours may cause somnelence and narcosis.

Effects: Chronic
Prolonged and repeated skin contact may cause dermatitis due to defatting effect. Prolonged or repeated exposure may cause cancer.

Additional Notes

SECTION 12: ECOLOGICAL INFORMATION

Basis for Assessment
Fuels are typically made from blending several refinery streams. Ecotoxicological studies have been carried out on a variety of hydrocarbon blends and streams but not those containing additives. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

Eco-toxicity:	Product is classified as toxic to aquatic organisms, LL/EL50 1 -10 mg/l. (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract). Films formed on water may affect oxygen transfer and damage organisms.
Persistence and Degradability:	Major components are inherently biodegradable. Persists under anaerobic conditions. The volatile components oxidise rapidly by photochemical reactions in air.
Bioaccumulation:	Contains components with the potential to bioaccumulate.
Mobility:	Floats on water. Contains volatile components. Evaporates within a day from water or soil surfaces. Large volumes may penetrate soil and could contaminate groundwater.

SECTION 13: DIPOSAL CONSIDERATIONS

Follow state or local authority regulations and guidelines for disposal of the waste. Clean area with detergent and water - do not allow product to enter drains, sewers or water courses- inform the local authorities if this occurs.

SECTION 14: TRANSPORT INFORMATION

Proper Shipping Name:	PETROL
UN number:	1203
DG Class:	3
Subsidiary Risk 1:	None Allocated
Packaging Group:	II
HAZCHEM code:	3[Y]E
Packaging Method	3.8.3
EPG Number	3.1.001
IERG Number	14
Marine Pollutant:	No
Special Precautions for User:	Refer to incompatibilities in section 7 and stability and reactivity information in section 10.
ADDITIONAL TRANSPORT REQUIREMENTS:	Nil

SECTION 15: REGULATORY INFORMATION

Poisons Schedule: S5

SECTION 16: OTHER INFORMATION

For further information on this product, please contact:
ACB Group (ABN 79 724 186 134)
118 Swann Drive, Derrimut Victoria-3030, Australia.
Phone: +61 3 93690220
Fax: +61 3 93690883

ADDITIONAL INFORMATION
Australian Standards References:

AS 1020	The Control of undesirable static electricity.
AS 1076	Code of Practice for selection, installation and maintenance of electrical apparatus and associated equipment for use in explosive atmospheres (other than mining applications) – Parts 1 to 13.
AS/NZS 1336	Recommended Practices for Occupational Eye Protection
AS/NZS 1715	Selection, Use and Maintenance of Respiratory Protective Devices
AS/NZS 1716	Respiratory Protective Devices
AS 1940	The Storage and Handling of Flammable and Combustible Liquids.
AS 2161	Industrial Safety Gloves and Mittens (excluding electrical and medical gloves)
AS 2380	Electrical equipment for explosive atmospheres – Explosion Protection Techniques (Parts 1 to 9).
AS 3000	Electrical installations (known as the Australian/New Zealand Wiring Rules).

Other References:

NOHSC:2011(2003)	National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition, April 2003, National Occupational Health and Safety Commission.
NOHSC; 2012 (1994)	National Code of Practice for the Labeling of Workplace Substances, March 1994, Australian Government Publishing Service, Canberra.
NES	National Occupational Exposure Standards for workplace Atmospheric Contaminants (NES) Australian Safety and Compensation Council, ASCC (Formerly NOHSC) 1995 as amended.
ADG Code 6th Edition	Australian Dangerous Goods Code 6th Edition

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END OF MSDS