Material Safety Data Sheet

Powerplus Racing Fuel E85

Official Powerplus Document 2014 Edition

powerplus RACING FUELS

Contents

Section 01: **Identification of Material and Supplier**

Product Name	Powerplus Racing Fuel E85
Other Names	E85
Product Codes/Trade Names	N/A
Recommended Use	Racing Fuel
Applicable In:	Australia
Supplier	Powerplus
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	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 02: **Hazard Identification**

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

R1	Highly flammable
R20/21	Harmful by inhalation and if swallowed
R36/38	Irritating to eyes and skin
R40	Limited evidence of carcinogenic effect
R45	May cause cancer
R65	Harmful: may cause lung damage if swallowed
R66	Repeated exposure may cause skin dryness or cracking

Safety Phrases

S7	Keep container tightly closed
S16	Keep away from sources of ignition
S23	Do not breath gas /fumes/vapour/spray
S24/25	Avoid contact with skin and eyes
S29	Do not empty into drains
S33	Take precautionary measures against static discharges
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection
S45	In case of accident or if you feel unwell, contact a doctor or Poisons Information Centre immediately

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 03: **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:
Unleaded Petrol	-	15%	None allocated
Ethanol	-	85%	64-17-5

Section 04: **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 05: ***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 06: **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 07: **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, flame proof cabinets or stores. Use properly labelled and closable 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 bundled 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 amineadduct 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 08: ***Exposure Controls/Personal Protection***

Exposure Standards

National Occupational Exposure Standard (NES) Australian Safety & Compensation Council, ASCC (formerly NOHSC)
Powerplus Racing Fuel E85
Ethanol in Powerplus Racing 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
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 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 moisturiser is recommended.
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 09: **Physical and Chemical Properties**

Appearance	Mobile clear pale yellow liquid, free of any foreign matter
Odour	Characteristic
pH, at stated concentration	N/A
Vapour pressure	45.3kPa
Vapour Density	No data available
Boiling Point (°C)	>35.50°C
Freezing/Melting Point (°C)	No data available
Solubility	Insoluble
Specific Gravity (H2O = 1)	0.789 at 15°C.
Flash Point	-28.90ºC
Flash Point Method	No data available
Flammable (Explosive)	
Limit - Upper	19% maximum
Flammable (Explosive)	
Limit - Lower	1.4%) minimum
Auto ignition Temperature	No data available
Evaporation Rate	No data available
Volatile Organic Compounds	As specified by the Green Building Council of Australia
Content (VOC)	N/A
% Volatiles	No data available

Section 10: **Stability and Reactivity**

Chemical Stability	Incompatible with oxidising agents (eg. Hypochlorites, peroxides), acids (sulphuric acid), strong alkalis (eg. Hydroxides), heat and ignitions sources. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

Section 11: **Toxicological Information**

Toxicological Data	Health effects information is based on reported effects in use from overseas and Australian reports.
Ethanol	LC50 (Inhalation): 2000ppm/10hours (rat)
Kerosene	LD50 (Ingestion): 3450mg/kg (mouse) LD50 (Ingestion): 20000 mg/kg (guinea pig)
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.

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	If spilled on soil, ethanol will either evaporate or leach into the ground due to the relatively high vapour pressure and low ab soil. It will biodegrade, probably to acetic acid and formaldehyde. Ethanol will volatilise from water and biodegrade, and is n expected to bioconcentrate. It will photodegrade in air with a half-life ranging from hours (polluted air) to days (clean air). Fi LC0 (Golden ide) >1000mg/L/48hrs. Invertebrate toxicity: EC50 (Daphnia magna0 is >1000mg/L/24hrs. If petrol is released to soil, it will quickly evaporate. Some may leach to groundwater. Biodegradation occurs in soil and groundwater but may be slow, especially at high concentrations, which may be toxic to microorganisms. May be harmful to aquatic organisms. Vapour phase petrol is expected to react with hydroxyl radicals with half life in the order of several days.

Section 13: **Disposal 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	Ethanol & Petrol Mixture
UN number	3475
DG Class	3
Subsidiary Risk 1	None Allocated
Packaging Group	II
HAZCHEM code	3YE
Marine Pollutant	No
Special Precautions	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**

Contact	ACB Group (ABN 79 724 186 134) 118 Swann Drive, Derrimut Victoria-3030, Australia. Phone: +61 3 93690220 Fax: +61 3 93690883
AS1020	The Control of undesirable static electricity.
AS1076	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)

AS2380	Electrical equipment for explosive atmospheres – Explosion Protection Techniques (Parts 1 to 9).
AS3000	Electrical installations (known as the Australian/New Zealand Wiring Rules).
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 Labelling 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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