Hi-Tec Oil Traders Pty Ltd ABN 28 053 837 362
5 Tarlington Place Smithfield NSW 2164
Correspondence: P.O Box 322 Castle Hill NSW 1765
Ph: 1300 796 009 | **Fax:** (02) 9604 1611 | **Email:** hitecoils@hi-tecoils.com.au
www.hi-tecoils.com.au

SAFETY DATA SHEET

Product name:	**Brake Fluid Dot 3**

1. COMPANY DETAILS AND PRODUCT IDENTIFICATION

COMPANY:	Hi-Tec Oil Traders Pty Ltd. (ABN 28 053 837 362)
ADDRESS:	PO Box 322 Castle Hill NSW 1765 5 Tarlington Place, Smithfield NSW 2164
TELEPHONE NUMBER:	1300 796 009
FAX NUMBER:	(02) 9604 1611
EMERGENCY TELEPHONE NUMBER:	1300 796 009
PRODUCT NAME:	Brake Fluid Dot 3
OTHER NAMES:	Dot 3 Brake Fluid
MANUFACTURER'S PRODUCT CODE:	HI8-3130
USE:	Brake Fluid
ADDITIONAL INFORMATION:	Refer to Product Information Sheet for additional information.
OTHER INFORMATION:	Visit our website: www.hi-tecoils.com.au Email: hitecoils@hi-tecoils.com.au

2. HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE:	HAZARDOUS SUBSTANCE NON-DANGEROUS GOODS Hazard classification according to criteria of NOHSC and GHS Dangerous goods classification according to the Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.
POISON SCHEDULE:	Not applicable

GHS LABEL ELEMENTS

SIGNAL WORD(S):	**DANGER**

2. HAZARDS IDENTIFICATION (CONT)

GHS HAZARD CLASSIFICATIONS

SERIOUS EYE DAMAGE: Category 1
CHRONIC AQUATIC HAZARD: Category 3

HAZARD STATEMENTS: H318: Causes serious eye damage.
H412: Harmful to aquatic life with long lasting effects.

PREVENTION STATEMENTS: P273: Avoid release to the environment.
P280: Wear protective gloves, protective clothing and eye or face protection.

RESPONSE STATEMENTS: P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER or doctor/physician.

STORAGE STATEMENT(S): P403+P233: Store in a well-ventilated place. Keep container tightly closed.

DISPOSAL STATEMENT: P501: Dispose of contents/container in accordance with local regulations.

3. IDENTIFICATION / COMPOSITION OF INGREDIENTS

CHEMICAL CHARACTERISTICS**:** Liquid

INGREDIENTS:-

CHEMICAL ENTITY:	CAS No.	PROPORTION (% weight)
Butyl alcohol propoxylated	143-22-6	10 - <30
Diisopropanolamine	110-97-4	< 10
6-tert-butyl-2,4-dimethylphenol	1879-09-0	< 10
Ingredients determined not to be hazardous	Mixture	To 100

OTHER INFORMATION: The petroleum oils in this product contain less than 3% DMSO extract as measured by IP 346 test method.

4. FIRST AID MEASURES

HEALTH EFFECTS

SWALLOWED: If swallowed do **NOT** induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Seek medical advice.

4. FIRST AID MEASURES (CONT)

EYE:	If this product comes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Transport to hospital or doctor without delay. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
SKIN:	If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation.
INHALED:	If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary.
FIRST AID FACILITIES:	Normal washroom facilities are generally suitable. Ensure an eye wash station and safety shower is available and ready for use.
ADVICE TO DOCTOR:	Treat symptomatically.
OTHER INFORMATION:	Keep water and mild soap near work site.

5. FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA:	There is no restriction on the type of extinguisher which may be used. Use extinguishing media suitable for surrounding area.
FIRE INCOMPATIBILITY:	Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
FIRE-FIGHTING RECOMMENDATIONS:	Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use fire fighting procedures suitable for surrounding area..
FIRE/EXPLOSION HAZARD:	Carbon dioxide (CO_2); nitrogen oxides (NO_x) other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes. The material is not readily combustible under normal conditions. However, it will break down under fire conditions and the organic component may burn. Not considered to be a significant fire risk. Heat may cause expansion or decomposition with violent rupture of containers. Other decomposition products include:
HAZCHEM:	Not applicable.

6. ACCIDENTAL RELEASE MEASURES

SPILLS & DISPOSAL:	Slippery when spilt. Avoid accidents, clean up immediately. CLEAN-UP PROCEDURE - SMALL SPILLS (20L or less): Absorb or contain liquid with sand, earth or spill control material. Avoid using sawdust or cellulose. Shovel up using non-sparking tools and place in a sound labelled sealable container for subsequent safe disposal. Place leaking containers in a sound labelled drum. Scrub contaminated surfaces with detergent solution. Retain washings as contaminated waste. CLEAN-UP PROCEDURES - LARGE SPILLS (Greater than 20L): Transfer to a sound labelled, sealable container for product recovery or safe disposal. Treat residues as for small spills. PERSONAL PRECAUTIONS: Extinguish naked flames. Remove ignition sources. No smoking. Avoid sparks. Take precautionary measures against static discharges. Avoid contact with skin, eyes and clothing. Evacuate the area of non-essential personnel. Shut off leaks, if possible without personal risk. Do not breathe vapours. Ventilate contaminated area thoroughly. Dispose of according to local regulations.
OTHER INFORMATION:	PROCEDURES IN CASES OF LEAKAGE OR BREAKAGE: Stop the source of the leak or release and contain spill if possible. Ventilate area. Use respirator and protective clothing outlined in this SDS. Cover spill with inert absorbent earth. Use a stiff brush to mix thoroughly. Sweep up and place in a sound labelled disposable container. Scrub contaminated area with detergent and water using a stiff brush. Pick up liquid with additional absorbent material and place in a sound labelled disposable container. Prevent contamination of groundwater or surface water.

7. HANDLING AND STORAGE

SAFE HANDLING:	**DO NOT** allow clothing wet with material to stay in contact with skin. Overheating of ethoxylates/ alkoxylates in air should be avoided. When some ethoxylates are heated vigorously in the presence of air or oxygen, at temperatures exceeding 160 C, they may undergo exothermic oxidative degeneration resulting in self-heating and autoignition. Nitrogen blanketing will minimise the potential for ethoxylate oxidation. Prolonged storage in the presence of air or oxygen may cause product degradation. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Avoid contact with moisture.
OTHER INFORMATION:	Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers.
SUITABLE CONTAINER:	Polyethylene or polypropylene container. Packing as recommended by manufacturer. Check all containers are clearly labelled and free from leaks.
STORAGE INCOMPATIBILITY:	Avoid reaction with oxidising agents

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA: Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
butyl alcohol propoxylated	Butoxypolypropylene glycol	27 mg/m^3	300 mg/m^3	1,800 mg/m^3

Ingredient	Original IDLH	Revised IDLH
butyl alcohol propoxylated	Not Available	Not Available
diisopropanolamine	Not Available	Not Available
6-tert-butyl-2,4-dimethylphenol	Not Available	Not Available

MATERIAL DATA

EXPOSURE CONTROLS

APPROPRIATE ENGINEERING CONTROLS: Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

EYE AND FACE PROTECTION: Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.

SKIN PROTECTION: See hand protection below.

HAND/FEET PROTECTION: Wear chemical protective gloves, e.g. PVC. Wear safety footwear or safety gumboots, e.g. Rubber. The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice. Personal hygiene is a key element of effective hand care..

BODY PROTECTION: See other protection below.

OTHER PROTECTION: Overalls. P.V.C. apron. Barrier cream.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION (CONT)

RESPIRATORY PROTECTION:
Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)
Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Required minimum protection factor	**Maximum gas/vapour concentration present in air p.p.m. (by volume)**	**Half-face Respirator**	**Full-Face Respirator**
up to 10	1000	A-AUS / Class1 P2	-
up to 50	1000	-	A-AUS / Class 1 P2
up to 50	5000	Airline *	-
up to 100	5000	-	A-2 P2
up to 100	10000	-	A-3 P2
100+	-	-	Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.

Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used.

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM:	Liquid
APPEARANCE:	Clear and bright liquid.
COLOUR:	Amber
ODOUR:	No data
MELTING POINT (°C):	-40
BOILING POINT:	Greater than 230°C
RELATIVE DENSITY (water = 1):	1.05 – 1.08
FLASHPOINT (ASTM D-93), Closed Cup:	Not applicable

9. PHYSICAL AND CHEMICAL PROPERTIES (CONT)

PH:	9.3
FLAMMABILITY LIMITS -LOWER:	Not applicable
FLAMMABILITY LIMITS -UPPER:	Not applicable
FLAMMABILITY:	Not applicable
SOLUBILITY IN WATER:	Miscible.
OCTANOL/WATER PARTITION COEFF:	Not available
SOLUBILITY IN ORGANIC SOLVENTS:	Not available
VAPOUR PRESSURE @20ºC	Not applicable
VAPOUR DENSITY (Air = 1):	Not available
VISCOSITY @ 40 ^{0}C (mm^2/s):	Not available
EVAPORATION RATE:	Not available
AUTO-IGNITION TEMPERATURE:	Not available
EXPLOSION PROPERTIES:	Not available
OTHER INFORMATION:	These physical data and other properties do not constitute a specification.

10. STABILITY AND REACTIVITY

REACTIVITY:	See Section 7.
CHEMICAL STABILITY:	Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur.
POSSIBILITY OF HAZARDOUS REACTIONS:	See Section 7.
CONDITIONS TO AVOID:	See Section 7.
INCOMPATIBLE MATERIALS:	See Section 7.
HAZARDOUS DECOMPOSITION PRODUCTS:	See Section 7.

11. TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

INHALATION:	The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
INGESTION:	Accidental ingestion of the material may be damaging to the health of the individual.
SKIN:	Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. Limited evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
EYE:	When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.
CHRONIC:	Prolonged or repeated skin contact may cause degreasing with drying, cracking and dermatitis following.

Brake Fluid Dot 3	**TOXICITY** Dermal (Rabbit) LD50: >2000 mg/kg[2]	**IRRITATION** Not Available
butyl alcohol propoxylated	**TOXICITY** Dermal (rabbit) LD50: >2000 mg/kg[2] Dermal (rabbit) LD50: 14946 mg/kg[2] dermal (rat) LD50: >2000 mg/kg[1] Inhalation (rat) LC50: 0.147 mg/l/4h**[2] Oral (rat) LD50: >2000 mg/kg[1] Oral (rat) LD50: >300-2000 mg/kg[1] Oral (rat) LD50: 4240 mg/kg[2] Oral (rat) LD50: 5300 mg/kg[2]	**IRRITATION** Eye: adverse effect observed (irritating)[1] Eye: no adverse effect observed (not irritating)[1] Skin: no adverse effect observed (not irritating)[1]
Diisopropanolamine	**TOXICITY** Oral (rat) LD50: >2000 mg/kg[2]	**IRRITATION** Eye (rabbit): 50 mg - SEVERE Skin (rabbit): 500 mg - mild

11. TOXICOLOGICAL INFORMATION (CONT)

	TOXICITY	IRRITATION
6-tert-butyl-2,4-Dimethylphenol	dermal (rat) LD50: >2000 mg/kg[1] Oral (rat) LD50: 910 mg/kg[1]	Eye: adverse effect observed (irritating)[1] Eye: SEVERE * Skin: adverse effect observed (irritating)[1]

Legend: *1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*

BUTYL ALCOHOL PROPOXYLATED:

Polyethers, for example, ethoxylated surfactants and polyethylene glycols, are highly susceptible towards air oxidation as the ether oxygens will stabilize intermediary radicals involved. Investigations of a chemically well-defined alcohol (pentaethylene glycol mono-n-dodecyl ether) ethoxylate, showed that polyethers form complex mixtures of oxidation products when exposed to air. Sensitization studies in guinea pigs revealed that the pure nonoxidized surfactant itself is nonsensitizing but that many of the investigated oxidation products are sensitizers. Two hydroperoxides were identified in the oxidation mixture, but only one (16-hydroperoxy-3,6,9,12,15-pentaoxaheptacosan-1-ol) was stable enough to be isolated. Human beings have regular contact with alcohol ethoxylates through a variety of industrial and consumer products such as soaps, detergents, and other cleaning products . Exposure to these chemicals can occur through ingestion, inhalation, or contact with the skin or eyes. Studies of acute toxicity show that volumes well above a reasonable intake level would have to occur to produce any toxic response. Moreover, no fatal case of poisoning with alcohol ethoxylates has ever been reported. Alcohol ethoxylates are according to CESIO (2000) classified as Irritant or Harmful depending on the number of EO-units: EO < 5 gives Irritant (Xi) with R38 (Irritating to skin) and R41 (Risk of serious damage to eyes) EO > 5-15 gives Harmful (Xn) with R22 (Harmful if swallowed) - R38/41 EO > 15-20 gives Harmful (Xn) with R22-41 >20 EO is not classified (CESIO 2000) Oxo-AE, C13 EO10 and C13 EO15, are Irritating (Xi) with R36/38 (Irritating to eyes and skin). AE are not included in Annex 1 of the list of dangerous substances of the Council Directive 67/548/EEC

In general, alcohol ethoxylates (AE) are readily absorbed through the skin of guinea pigs and rats and through the gastrointestinal mucosa of rats. AE are quickly eliminated from the body through the urine, faeces, and expired air (CO2).Orally dosed AE was absorbed rapidly and extensively in rats, and more than 75% of the dose was absorbed. When applied to the skin of humans, the doses were absorbed slowly and incompletely (50% absorbed in 72 hours). For high boiling ethylene glycol ethers (typically triethylene- and tetraethylene glycol ethers): **Skin absorption:** Available skin absorption data for triethylene glycol ether (TGBE), triethylene glycol methyl ether (TGME), and triethylene glycol ethylene ether (TGEE) suggest that the rate of absorption in skin of these three glycol ethers is 22 to 34 micrograms/cm2/hr, with the methyl ether having the highest permeation constant and the butyl ether having the lowest. The rates of absorption of TGBE, TGEE and TGME are at least 100-fold less than EGME, EGEE, and EGBE, their ethylene glycol monoalkyl ether counterparts, which have absorption rates that range from 214 to 2890 micrograms/ cm2/hr. Therefore, an increase in either the chain length of the

11. TOXICOLOGICAL INFORMATION (CONT)

alkyl substituent or the number of ethylene glycol moieties appears to lead to a decreased rate of percutaneous absorption. However, since the ratio of the change in values of the ethylene glycol to the diethylene glycol series is larger than that of the diethylene glycol to triethylene glycol series , the effect of the length of the chain and number of ethylene glycol moieties on absorption diminishes with an increased number of ethylene glycol moieties. In general, the toxicity of the PPGs Butyl Ether decreased with increasing molecular weight; for example, PPG-40 Butyl Ether was less toxic than PPG-2 Butyl Ether. Mutagenicity data were not found on the PPGs Butyl Ether. However, an ether of molecular weight 800 Da (~PPG-13 Butyl Ether) was non-carcinogenic when fed to rats for 2 years. Because the PPGs Butyl Ethers undergo metabolic degradation; i.e., the butyl group are removed and oxidized, the PPG chains are split into random length fragments, the genotoxicity of the component chemicals, propylene glycol (PG) and n- Butyl Alcohol, were also considered. Both PG and n-Butyl Alcohol were non-mutagenic in mammalian and microbial assays. PG was non-carcinogenic in a 2-year feeding study using rats and in a lifetime dermal study using mice. These studies effectively eliminated the need for genotoxicity data on the PPG Butyl Ethers. There was concern about the irritancy potential of PPG-2 Butyl Ether. In animal irritation studies, the ingredient caused minor, transient erythema and desquamation; in addition, erythema, edema, ecchymosis, necrosis, and other changes were observed during an acute percutaneous study. PPG-2 Butyl Ether also caused minor to moderate conjunctival irritation and minor corneal injury. It was concluded that the PPG Butyl Ethers were safe for use in cosmetics when formulated to avoid irritation. The dermal LD50 of PPG-3 Butyl Ether was 2 g/kg in rats and rabbits, and the dermal LD50 of Buteth-3 in rats was 3.5 g/kg. The oral LD50 of PPG-3 Butyl Ether and of Buteth-3 in rats was 2 g/kg and 6.6 g/kg, respectively. Polypropyleneglycol butyl ethers (not defined) had a dermal and an oral LD50 of 2 g/kg and 0.3-2 g/kg bw, respectively,in mice.Buteth-3 (1000 mg/kg/day) was not toxic to rabbits in a 21-day dermal study; erythema, desquamation,and fissuring were observed In short-term oral toxicity studies in rats, PPG-3 Butyl Ether had a NOAEL of 1000 mg/kg bw; polypropylene glycol butyl ethers had a NOEL of 100 mg/kg bw/day for clinical observations, higher absolute and relative liver weights, and an increased incidence of liver and thyroid gland hypertrophy; and 1-(2-butoxy-1-methylethoxy)propan-2-ol had a NOAEL of 100 mg/kg/day based on very slight to slight hepatocellular hypertrophy with no corresponding increases in liver weights in low-dose males. In a 90-day oral toxicity study, administration of up to 1000 mg/kg bw/day PPG-3 Butyl Ether to rats in drinking water produced treatment-related increases in absolute and relative liver and kidney weights. Exposure to 1000 and 3000 ppm methoxyisopropanol produced some adverse effects in a two-generation study in rats; adverse effects were not observed with 300 ppm. PPG-3 Butyl Ether was not genotoxic in vitro in the Ames test or in vivo in a mouse micronucleus assay. Propylene glycol butyl ether was not genotoxic in an Ames test or a mammalian chromosomal aberration assay in rat lymphocytes, and neither propylene.

11. TOXICOLOGICAL INFORMATION (CONT)

DIISOPROPANOLAMINE:	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.
6-TERT-BUTYL-2,4-DIMETHYLPHENOL:	The chemical showed no genotoxic effects in bacteria and in a chromosomal aberration test *in vitro*. In a combined repeat dose and reproductive/developmental toxicity screening test, there were no clinical observations attributed to the administration of the test substance in parental animals. However, increases of liver and kidney weights were observed at the middle and highest dose level (30 and 150 mg/kg/day). In addition, histopathological examination showed swelling of liver cells and degeneration and protein cast of the proximal renal tubules in the groups. For hindered phenols: Available data shows that acute toxicity of these substances is low. **Mutagenicity.** Data from bacterial reverse mutation assays and *in vitro* and *in vivo* chromosome aberration studies were reviewed. All assays, with and without metabolic activation, were negative. The alkyl phenolics (which may occur as breakdown products of some polyethoxylated surfactants) have been implicated in a phenomenon which has apparently occurred since the mid 1960s, namely lower sperm counts and reduced fertility in males. Nonyl phenol acts like an oestrogen hormone which stimulates breast cells to divide in vitro. When pregnant rats are fed nonylphenols at doses comparable to that at which humans might be exposed, male offspring had significantly smaller testicles and lower sperm counts. Although the human foetus is "bathed" in naturally occurring oestrogens during pregnancy it is suggested that it has developed a protective mechanism against natural oestrogens but is not safe from synthetic variants. * DuPont
DIISOPROPANOLAMINE & 6-TERT-BUTYL-2,4-DIMETHYLPHENOL:	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.
ACUTE TOXICITY:	Data either not available or does not fit the criteria for classification.
SKIN IRRITATION/CORROSION:	Data either not available or does not fit the criteria for classification.
SERIOUS EYE DAMAGE/IRRITATION:	Data available to make classification.

11. TOXICOLOGICAL INFORMATION (CONT)

RESPIRATORY OR SKIN SENSITISATION:	Data either not available or does not fit the criteria for classification.
MUTAGENICITY:	Data either not available or does not fit the criteria for classification.
CARCINOGENICITY:	Data either not available or does not fit the criteria for classification.
STOT – SINGLE EXPOSURE:	Data either not available or does not fit the criteria for classification.
STOT – REPEATED EXPOSURE:	Data either not available or does not fit the criteria for classification.
ASPIRATION HAZARD:	Data either not available or does not fit the criteria for classification.

12. ECOLOGICAL INFORMATION

TOXICITY:

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
Brake Fluid Dot 3	Not Available	Not Available	Not Available	Not Available	Not Available
butyl alcohol propoxylated	LC50	96	Fish	2-400mg/L	2
	EC50	48	Crustacea	2-705mg/L	2
	EC50	72	Algae or other aquatic plants	1-589mg/L	2
	EC0	24	Crustacea	1-989.5mg/L	2
	NOEC	96	Fish	1-mg/L	2
	LC50	96	Fish	143.877mg/L	3
	EC50	48	Crustacea	>100mg/L	2
	EC50	96	Algae or other aquatic plants	315mg/L	2
	EC0	48	Crustacea	>=100mg/L	2
	NOEC	48	Crustacea	1-mg/L	2
	LC50	96	Fish	104mg/L	2
	EC50	48	Crustacea	>100mg/L	2
	EC50	72	Algae or other aquatic plants	ca.112mg/L	2
	EL10	72	Algae or other aquatic plants	ca.72.3mg/L	2
	NOEC	48	Crustacea	1-mg/L	2
Diisopropanolamine	LC50	96	Fish	1-466mg/L	2
	EC50	48	Crustacea	=277.7mg/L	1
	EC50	72	Algae or other aquatic plants	74mg/L	2
	NOEC	72	Algae or other aquatic plants	125mg/L	2
6-tert-butyl-2,4-Dimethylphenol	LC50	96	Fish	0.734mg/L	3
	EC50	48	Crustacea	2.9mg/L	2
	EC50	96	Algae or other aquatic plants	0.521mg/L	3
	NOEC	504	Crustacea	0.32mg/L	2

***Legend:** Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12(QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

12. ECOLOGICAL INFORMATION (CONT)

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
DO NOT discharge into sewer or waterways.

PERSISTENCE AND DEGRADABILITY:

Ingredient	**Persistence: Water/Soil**	**Persistence: Air**
butyl alcohol propoxylated	LOW	LOW
diisopropanolamine	LOW	LOW
6-tert-butyl-2,4-dimethylphenol	LOW (Half-life = 49 days)	LOW (Half-life = 0.67 days)

BIOACCUMULATIVE POTENTIAL:

Ingredient	**Bioaccumulation**
butyl alcohol propoxylated	LOW (LogKOW = 1.2706)
diisopropanolamine	LOW (LogKOW = -0.82)
6-tert-butyl-2,4-dimethylphenol	LOW (BCF = 263)

MOBILITY IN SOIL:

Ingredient	**Mobility**
butyl alcohol propoxylated	LOW (KOC = 10)
diisopropanolamine	HIGH (KOC = 1)
6-tert-butyl-2,4-dimethylphenol	LOW (KOC = 5228)

13. DISPOSAL CONSIDERATIONS

PRODUCT/PACKAGING DISPOSAL:	Legislation addressing waste disposal requirements may differ by country, state and/or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: Reduction, Reuse, Recycling, Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. **DO NOT** allow wash water from cleaning or process equipment to enter drains. It may be necessary to collect all wash water for treatment before disposal. In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. Where in doubt contact the responsible authority. Recycle wherever possible. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material). Decontaminate empty containers.

14. TRANSPORT INFORMATION

ROAD & RAIL TRANSPORT:	
ADG REQUIREMENT	Not classified as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.
MARITIME TRANSPORT:	
IMO/IMDG REQUIREMENT	Not classified as a Dangerous Good according to the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.
AIR TRANSPORT:	
ICAO/IATA REQUIREMENT	Not classified as a Dangerous Good according to the criteria of the International Maritime Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

15. REGULATORY INFORMATION

POISON SCHEDULE:	Not scheduled.
AUSTRALIAN INVENTORY STATUS:	All components are listed or exempted.

16. OTHER INFORMATION

CONTACT PERSON/POINT: General Manager 1300 796 009

This information was prepared in good faith from the best information available at the time of issue. It is based on the present level of research and to this extent we believe it is accurate. However, no guarantee of accuracy is made or implied and since conditions of use are beyond our control, all information relevant to usage is offered without warranty. The manufacturer will not be held responsible for any unauthorised use of this information or for any modified or altered versions.

If you are an employer it is your duty to tell your employees, and any others that may be affected, of any hazards described in this sheet and of any precautions that should be taken.

Safety Data Sheets are updated frequently. Please ensure you have a current copy.

16. OTHER INFORMATION (CONT)

LITERATURE REFERENCES:

* NOHSC: 2011 National Code of Practice for the preparation of Material Safety Data Sheets.
* Safe Work Australia: 2016 Preparation of Safety Data Sheets for Hazardous Chemicals
* NOHSC: 1008 Approved Criteria for Classifying Hazardous Substances.
* NOHSC: 10005 List of Designated Hazardous Substances.
* NOHSC: 1005 Control of Workplace Hazardous Substances, National Code of Practice.
* NOHSC: 2007 Control of Workplace Hazardous Substances, National Code of Practice.
* NOHSC: 1003 Exposure Standards for Atmospheric Contaminants in the Occupational Environment, National Exposure Standards.
* NOHSC: 3008 Exposure Standards for Atmospheric Contaminants in the Occupational Environment, Guidance Note.
* NOHSC: 1015 Storage and Handling of Workplace Dangerous Goods, National Standard.
* NOHSC: 2017 Storage and Handling of Workplace Dangerous Goods, National Code of Practice.
* SUSDP: Standard for the Uniform Scheduling of Drugs and Poisons
* ADG: Australian Dangerous Goods Code
* MSDS of component materials.

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END OF SDS