File No: NA/485....

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME

FULL PUBLIC REPORT

Parabar 9340

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Director
Chemicals Notification and Assessment

FULL PUBLIC REPORT

Parabar 9340

1. APPLICANT

Exxon Chemical Australia Ltd. of GPO Box 20575, MELBOURNE VIC 3001 and co-notifiers Australian Petroleum Pty Ltd, BP Australia Limited, Castrol Australia Pty Limited, Mobil Oil Australia Ltd and the Shell Company of Australia Limited have jointly submitted a standard notification statement in support of their application for an assessment certificate for Parabar 9340.

2. IDENTITY OF THE CHEMICAL

Parabar 9340 is not considered to be hazardous based on the nature of the chemical and the data provided. Therefore the chemical name, CAS number, molecular and structural formulae, molecular weight, spectral data and details of exact import volume and customers have been exempted from publication in the Full Public Report and the Summary Report.

Trade Name:	Parabar 9340
Molecular Weight:	the average molecular weight of the new chemical is greater than 1 000
Spectral Data:	ultraviolet-visible (UV/Vis) absorption spectra and infrared (IR) spectra were provided for Parabar 9340

3. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa:	viscous brown liquid at 20°C
Boiling Point:	initial 286.9°C; final 720.7°C.
Specific Gravity:	1.1058
Vapour Pressure:	5.2 x10^{-6} KPa at 23°C
Water Solubility:	4.506 mg/L at 20°C

Partition Co-efficient (n-octanol/water): log P_{ow} > 6

Hydrolysis as a Function of pH: hydrolysis of Parabar 9340 has not been determined as it does not contain hydrolysable function groups and is poorly soluble in water

Adsorption/Desorption:

Parameters	*Soil Type*		
	Colorado	Freehold	Snyder
% Adsorbed	76.0	43.1	63.7
% Desorbed	6.4	32.5	15.4
% Retained	93.6	67.5	84.6
K'	11.0	2.4	7.1
K_{oc}	452.0	288.0	353.0

Dissociation Constant: pK_a 9.89

Flash Point: > 160°C

Flammability Limits: Upper Limit = 5.0% (as for the diluent oil)
Lower Limit = 1.0% (as for the diluent oil)

Autoignition Temperature: 340°C (as for the diluent oil)

Explosive Properties: none indicated by the molecular structure

Reactivity/Stability: Parabar 9340 is a stable viscous liquid at room temperature

Comments on Physico-Chemical Properties

Tests were performed at facilities complying with OECD Principles of Good Laboratory Practice.

The initial and final boiling points represent the boiling range temperature estimates for the notified substance.

Concentrations of the notified substance in water were determined by the total organic carbon (TOC) analysis of the equilibrated solutions. Percent carbon information and results of the TOC analysis were used to calculate the test substance's concentration in water. The results show that the aqueous concentrations had reached equilibrium by day two.

Hydrolysis of the notified substance was not determined, as the notifier claims that it does not contain any hydrolysable functional groups. While the complex mixture contains trace amounts of amide functionalities, the low water solubility of the

notified substance should limit hydrolysis in the expected environmental pH range.

A partition coefficient test reported that the notified substance eluted as several discrete chromatographic components when analysed by high performance liquid chromatography (HPLC). The majority of these components of the UV detectable notified substance were estimated to have log values greater than 6. There were several minor components with log K_{OW} less than 1.7, and one component with log K_{OW} of 1.72.

The water soluble fraction of the notified substance showed moderate adsorption to each of the three soils tested, with the highest adsorption and retention obtained on the Colorado soil (highest organic carbon content (OCC)), and the lowest on the Freehold soil (lowest OCC). The resultant K_{OC} values indicate that this fraction of the notified substance would exhibit medium mobility within soils (1), with increasing mobility expected in soils with less OCC. The remainder of the substance is expected to be far less mobile.

The notified substance is completely soluble in fat, indicating its potential to migrate into and be stored in biological tissues. However, the high molecular weight of the material and its low permeability would indicate a low likelihood of absorption membranes.

4. PURITY OF THE CHEMICAL

Degree of Purity: > 90%

Toxic or Hazardous Impurities: none

Non Hazardous Impurities: <10%

5. USE, VOLUME AND FORMULATION

Parabar 9340 will not be manufactured in Australia. The chemical will be imported as a component of a lubricating oil additive package at concentrations below 20%. Over the next five years the annual import volume is estimated to be greater than 100 metric tonnes.

6. OCCUPATIONAL EXPOSURE

Parabar 9340 will be imported in bulk vessels as a component of an oil additive product. The bulk liquid will be transported by road tanker to customer blending facilities. Lubricant processors at customer facilities will blend the additive with mineral oil and other additives in 250 to 25 000 litre batches. The final concentration of Parabar 9340 is estimated at less than 5% weight of the blended lubricant. Mixed lubricant is finally dispensed into consumer size containers ranging from 2 to 200 litres. The finished product is sold and transported in these containers to retail outlets, vehicle fleet operators and industrial users all over Australia.

Worker exposure may occur during the following activities:

unloading the additive blend at the port for storage or road transport;
transportation of the bulk additive blend to commercial customers for blending;
storage sites at the importer's or oil blenders' storage tanks;
blending operations at the lubricant oil blending plants;
maintenance of pump, blending, and associated equipment at plants; or,
during transport.

Final use of lubricant oil at industrial sites

Approximately 1 to 4 workers will be involved at each location with a maximum of 10 workers estimated to be involved from import to delivery. Ten to fifteen truck deliveries to customers sites are expected per year and would typically be completed within a few hours. All transfer and blending operations are automated with flexible pipe transfer connections to sealed containers. Dispensing to consumer containers, which are screw top sealed, is also automated. The notifier states that exposure will be minimal during blending and transport operations due to the use of contained liquid handling systems.

7. PUBLIC EXPOSURE

Lubricant oil additives containing the notified chemical are available to the public through retailers. Public exposure can occur during do-it-yourself (D-I-Y) oil changes. The user may be dermally exposed to the notified chemical and its decomposition products in oils, but the dermal contact would be short and infrequent. The levels of the notified chemical and/or its decomposition products in the lubricating oil additive are low (< 5%(w/w)). Accidental splashing into the eye or short dermal exposure to lubricating oils containing up to 5 %(w/w) of the notified chemical or its decomposition products or any public exposure to accidental spills is not expected to have significant adverse effects. The proposed use of the notified chemical is not expected to pose a significant hazard to public health.

8. ENVIRONMENTAL EXPOSURE

- **Release**

The notifier expects negligible environmental release of the notified substance during product manufacturing. Fugitive emissions during transport and blending are considered by the notifier to be negligible due to the very low vapour pressure of the substance. If spillages occur during the blending processes, they will be contained on-site and soaked up with absorbent material, *ie* sand or soil, before being transported off-site to an approved industrial facility for disposal by incineration. The drumming/ re-packing of the finished lubricant product into consumer sized containers is essentially carried out in an automated filling line. Leakage from product transfer lines is expected to be very minimal, with it being collected then recycled or disposed of. On completion of the blending process, containers, transfer hoses, pipelines and pumps are cleaned by flushing through with mineral base oil.

During use, the finished lubricant oils containing the notified substance are generally considered to be contained in the sumps of diesel and gasoline engines until the lubricant is changed. Some of the notified substance will be combusted during use. Collected used lubricants will be either re-used, recycled, cleaned or burnt (for their fuel value). Release of the lubricants to the environment may occur due to engine leaks and during engine oil changes.

The empty bulk tanks will be Marpol washed (according to MARPOL[1] marine pollution requirements). The washings are placed into a "slops" tank, which is emptied by waste disposal companies. The bulk lined containers (BLC) are delivered and washed by the handling companies. These are generally shipping agents who have appropriate washing facilities for BLC before they are returned. The drums are mostly reused as lube drums after washing, with the waste washings properly disposed of. This may be via incineration or landfill at an industrial facility. When the imported adpack (containing the notified substance) is transported by road tankers, the tankers, once they deliver, are washed at the transport company's wash station. Washings are sent to separator pits and disposed of according to regulations. The notifier claims that in all cases, disposal of the substance would conform to relevant local disposal regulations.

The notifier estimates that an "empty" container has approximately 1.1% unused residues left inside. Therefore, less than 25 tonnes of the notified substance (at maximum import volumes) may be present either for incineration as drum washings during reconditioning of the containers or for disposal as consumer container residues. Consumer containers may be recycled. However, it is unlikely that many of these containers will be disposed of to landfill.

- **Fate**

The notified substance will be used in automotive and industrial lubricants and will share their fate. Therefore, most spent oil will be combusted (if used for fuel value) or recycled. Incineration products are expected to include oxides of carbon, nitrogen and sulfur. A minor component will be released to the environment through spills and leaks, but this would be widely dispersed. If the notified substance was washed off road surfaces, it would be expected to adsorb to soils or sediments adjacent the road.

Collection of waste lubricants is more easily accomplished from industrial and commercial users than from the small but significant quantity arising from the section of the community that changes its own (D-I-Y market) (2). The notifier estimates that 20% of cars are not serviced at garages, which may lead to the "used oil" not being collected. This could potentially lead to a release of used oil to the environment. It has been estimated from an ANZECC Report (2) that 35% of oil used for automotive purposes will not be collected and could be disposed of in an inappropriate manner, such as dust suppression, vegetation control, uncontrolled burial and incomplete combustion[2].

[1] MARPOL: International Convention for the Prevention of Pollution by Ships 1973/78
[2] No figures are available for how much automotive oil was collected for re-use, but an estimate of about 35% of all oil sold is not collected and possibly disposed of in an inappropriate manner.

The notified substance was found to be not readily biodegradable (calculated as the ratio of the amount of CO_2 produced to the theoretical carbon dioxide ($ThCO_2$), and then expressed as a percentage). Biodegradation amounted to 1.46% at the end of the 28-day exposure to activated sludge from a domestic sewage treatment facility in the CO_2 Evolution (Modified Sturm Test) for ready biodegradability [OECD TG 301B] (3). The notified substance's inherent biodegradability was not measured.

The potential for bioaccumulation was not determined. Due to the substance's partition coefficient (log K_{OW} > 6), water solubility (4.506 mg/L) and high fat solubility, bioaccumulation may be perceived as an issue of concern (4). However, biological membranes are not permeable to chemicals of very large molecular size. Therefore, bioaccumulation of the notified substance is not expected (4, 5, 6)

9. EVALUATION OF TOXICOLOGICAL DATA

9.1 Acute Toxicity

Summary of the acute toxicity of Parabar 9340

Test	*Species*	*Outcome*	*Reference*
acute oral toxicity	rat	LD_{50}> 2 000 mg/kg	(7))
acute dermal toxicity	rabbit	LD_{50}> 2 000 mg/kg	(8))
skin irritation	rabbit	slight irritant	(9)
eye irritation	rabbit	slight irritant	(10)
skin sensitisation	guinea pig	strong sensitiser	(11)
skin sensitisation	human	non- sensitiser	(12)

9.1.1 Oral Toxicity (7)

Species/strain:	rat/Crl:CD·BR
Number/sex of animals:	5/sex
Observation period:	14 days
Method of administration:	oral intubation
Clinical observations:	minimal (one soft stool, day of dosing)
Mortality:	none
Morphological findings:	none
Test method:	similar to OECD guidelines (3)

LD_{50}:	> 2 000 mg/kg
Result:	the notified chemical was of low acute oral toxicity in a limit test in rats

9.1.2 Dermal Toxicity (8)

Species/strain:	rabbit/New Zealand White
Number/sex of animals:	5/sex
Observation period:	14 days
Method of administration:	single dose (2 000 mg/kg) applied to a clipped area of skin (not less than 10% body surface); covered with gauze patch and secured with plastic sleeve; removed and washed with peanut oil at 24 hours
Clinical observations:	all animals gained weight over the period of the study, no signs of systemic toxicity were noted; signs of skin slight to moderate skin irritation were seen in all animals
Mortality:	none
Morphological findings:	postmortem, 4 animals showed desquamation at the application site
Test method:	similar to OECD guidelines (3)
LD_{50}:	>2 000 mg/kg
Result:	the notified chemical was of low acute dermal toxicity in rabbits

9.1.3 Skin Irritation (9)

Species/strain:	rabbits/New Zealand White
Number/sex of animals:	6 females
Observation period:	7 days
Method of administration:	0.5 mL dose under gauze patch with semiocclusive dressing securing to clipped backs; removed after 4 hours

Test method:	according to OECD guidelines (3)
Observations:	minimal to slight erythema was observed in 5 out of 6 animals; only 1 animal had well defined erythema on day 3; all signs of irritation had regressed by day 7; irritation scores were determined according to Draize scores (13)
Result:	minimal irritant to the rabbit

9.1.4 Eye Irritation (10)

Species/strain:	rabbit/New Zealand White
Number/sex of animals:	6 (4 males, 2 females)
Observation period:	7 days
Method of administration:	0.1 mL of analogue (see below) introduced into lower conjunctival sac of right eye of each animal; left eye served as control.
Analogue	data supplied were from an analogous product
Test method:	similar to OECD guidelines (3)
Observations (unirrigated eyes):	
1. Corneal effects:	results for all animals, at all times, were zero;
2. Iridial effects:	response in one animal at 24 hours, resolved at 48 hours;
3. Conjunctival effects	superficial changes in the conjunctiva of all animals at 24 hours; resolved in all but 2 animals at 72 hours; and disappeared at 4 days in all animals; no permanent changes recorded; responses were determined according to Draize scores *(*Draize, 1959 #4*)*
Result:	slight irritant in rabbit eye

9.1.5 Skin Sensitisation (11)

Species/strain:	guinea pig/Hartley albino
Number of animals:	20 females

Induction procedure: induction by occlusive topical application of undiluted test material on day 0; 0.4 mL applied on 1.5 inch by 1.5 inch sheer adhesive bandage to previously clipped scapular region; bandage removed at 6 hours; residual chemical removed with peanut oil
day 7 and day 14; repeated as above

Challenge procedure: day 28: 0.4 mL of undiluted test material was applied to previously clipped right flank by Hilltop Chamber secured by Elastoplast; chamber was removed at 6 hours and remnant Parabar 9340 was removed with peanut oil after an additional 21 hours; day 35 rechallenged to left flank as above

Challenge outcome:

Challenge	***Test animals***		***Control animals***	
Time & concentration	***24 hours****	***48 hours****	***24 hours***	***48 hours***
28 day 100%	18/20**	13/20	1/10	0/10
35 day 100%	20/20	20/20	4/10	0/10

* time after patch removal
** number of animals exhibiting positive response

Test method: modified Buehler method, similar to OECD guidelines (3)

Result: strong sensitisation potential in guinea pigs

Human Trials (12)

Subjects: human volunteers

Number: 102 completed the definitive trial

Induction procedure: 0.2 mL applied at 50% dilution in mineral oil on semi-occluded patch to deltoid portion of upper arm; 9 times at 3 times per week (Mon, Wed, Fri) over 3 weeks for 24 ± 1 hours; mineral oil undiluted served as the control

Challenge procedure: after 10-17 day rest period, challenge at naive sight for 24 ± 1 hours; read at 48 hours and 96 hours after challenge application

Challenge outcome:

Challenge concentration	Test sites		Control site	
	48 hours*	96 hours*	48 hours	96 hours
50%	2/102**	0/102	1/102	0/102

* time after challenge
** number of subjects exhibiting positive response

Test method: adaptation of the Draize Patch Test similar to OECD guidelines (3)

Result no evidence of clinical sensitisation in humans

9.2 Repeated Dose Dermal Toxicity (14)

Species/strain: rats/Crl:CD.BR

Number/sex of animals: 5/5 for 5 groups (1 control, 3 doses, 1 high dose recovery group to 42 days)

Method of administration: topical on clipped skin applied on gauze and covered with a plastic wrap

Dose/Study duration: 100, 300, 1 000 mg/kg for a minimum of 6 hours per day for 28 days

Clinical observations: no changes in body weight, food consumption or other adverse signs

Clinical chemistry/Haematology: no changes in haematology, serum chemistry, or clotting factors

Histopathology: nil

Test method: similar to OECD guidelines (3)

Result: no treatment related toxicity following repeat dermal dosing for 28 days at dose levels of up to 1 000 mg/kg in the rat

9.3 Genotoxicity

9.3.1 *Salmonella typhimurium* Reverse Mutation Assay (15)

Strains: TA 98, TA 100, TA 1535, TA 1537, TA 1538

Concentration range: 250, 500, 1 000, 2 500 and 5 000 μg/plate

Test method: similar to OECD guidelines (3)

Result:	the notified chemical was not considered to be mutagenic in the bacterial strains tested in the presence or absence of metabolic activation provided by rat liver S9 fraction

9.3.2 Micronucleus Assay in the Bone Marrow Cells of the Mouse (16)

Species/strain:	mice/CD-1
Number and sex of animals:	5/5
Doses:	500, 1 000, 2 000 mg/kg
Method of administration:	oral gavage 3 treatments 24 hours apart
Test method:	similar to OECD guidelines (3)
Result:	no increase in micronucleated polychromatic erythrocytes occurred and no cytotoxicity was induced

9.3.3 Chromosome Aberration Assay in Chinese Hamster Ovary Cells (17)

Clone:	WBL
Doses:	10, 20,40 and 80 μg/mL final concentration diluted in tetrahydrofuran (up to precipitation limit in media) for 16 hours with or without rat S9 mix
Test method:	according to OECD guidelines (3)
Result:	Parabar 9340 did not induce structural chromosomal aberrations in Chinese hamster ovary cells, in either the presence or absence of metabolic activation

9.4 Overall Assessment of Toxicological Data

Parabar 9340 shows low acute oral and dermal toxicity in rats with The respective LD_{50} values for both administration routes in excess of 2 000 mg/kg. Inhalation toxicity test were not completed as the compound is a viscous liquid at room temperature with a high boiling point and low vapour pressure. The notified chemical causes minimal skin irritation and slight eye irritation in rabbits. The responses noted in the eye and skin irritation studies were below the threshold necessary for classification as hazardous according to the *Approved Criteria for Classifying Hazardous Substances (18).*

Dermal sensitisation in guinea pigs was considered to be strong. However in repeat dose patch testing in human studies, with over 75 volunteers

completing the definitive trial, no sensitisation effects were observed. As the human study was conducted to recognised protocols these data were considered to overrule the animal study and therefore the notified chemical was not classified as hazardous for skin sensitisation effects. In a repeat dose dermal toxicity study in rats at high dose levels no treatment related toxicity was evident.

No mutagenicity was observed in bacteria and no increase in micronuclei occurred in mouse bone marrow cells. Similarly no clastogenicity was observed in Chinese hamster ovary cells *in vitro*.

Based on the human and animal studies summarised above, Parabar 9340 would not be classified hazardous according to the *Approved Criteria for Classifying Hazardous Substances (18).*

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10. ASSESSMENT OF ENVIRONMENTAL EFFECTS

The ecotoxicity studies presented below have been supplied by the notifier. The tests were carried out to OECD Test Methods.

A structurally related chemical (CMC 609) was used for the algal toxicity test. CMC 609, a commercial predecessor of the notified substance, is described by the notifier as an overbased magnesium alkylbenzene sulfonate. It differs only in the length of the carbon chain of the alkyl group and has a molecular weight of 485-505 g/mol. The notifier claims that the differences in chemical structure are not expected to have a significant impact on toxicity, and in fact believes that the longer alkyl chain length in the notified substance would typically confer less relative toxicity. *Environment Australia* agrees with these conclusions and accepts the algal toxicity data of CMC 609 will closely represent that of the notified substance. The notifier claims that *Environment Canada* and the United States' *Environmental Protection Agency* have both accepted this closely related material as representative of the notified substance.

Ecotoxicity results

Test	Species	Results (Nominal Concentrations of WAF#)
Acute Toxicity Static system [OECD TG 203]	Rainbow trout (*Oncorhynchus mykiss*)	96 h LL_{50} > 1 000 mg/L*
Acute Immobilisation Static system [OECD TG 202]	Water flea (*Daphnia magna*)	48 h EL_{50} > 1 000 mg/L^{-1} **
Growth Inhibition† [Wilbury Test 73-CMΔ]	F/W Green Algae (*Scenedesmus capricornutum*)	96 h EbC_{50} = 1 100 mg/L^{-1} 96 h $E\mu C_{50}$ > 1 500 mg/L^{-1} 96 h NOEC = 125 mg/L^{-1}

Water accommodated fraction - see text below; * LL_{50}: Lethal Loading; ** EL_{50}: Effect Loading; † Inhibition to CMC 609 - see text above; and Δ T.R Wilbury test protocol number 73-CM (Acute Toxicity of the Water Accommodated Fraction [WAF] of Lubricant Additive to the Freshwater Algae, *Scenedesmus capricornutum*) based on the procedures of the US EPA and OECD.

Due to the low water solubility of the notified substance, the studies were performed to determine the toxicity of the water accommodated fraction (WAF). A 1 000 mg/L treatment was prepared and stirred for 24 hours. After settling for 1 hour, the WAF was removed and used as the treatment solution. The WAF were slightly cloudy.

The notified substance can be classed as non-toxic to rainbow trout, water fleas and algae, up to its limit of solubility (the WAF). A sample of the test media at the conclusion of the algal growth inhibition test was taken and cultured in fresh media for an additional 72 hours. The notifier claims that these results indicate that the effects to algae were algistatic rather than algicidal.

11. ASSESSMENT OF ENVIRONMENTAL HAZARD

The end use of the notified substance is as a component of lubricant oil. The main environmental exposure will be from inappropriate disposal of waste oil. A worst case scenario would be if all the uncollected oil was dumped into a sewer in a country centre. This would give a concentration of about 219 mg/L per day[3]. For a major city, the amount would only be about 2.19 mg/L per day, due to the much higher dilution factors expected.

It is expected that the substance will be moderately adsorbed to soil and sediment during the waste water treatment process. The notified substance has also been shown to have a low water solubility. Therefore, the actual concentration in the effluent will be significantly less. With its use, anticipated to be Australia wide, *ie* not concentrated in one town or city, and with good industrial and public practice, concentrations of the notified substance released to the environment are expected to be further reduced. Ecotoxicity tests showed that the substance is expected to be non-toxic to aquatic organisms up to the limit of its solubility (~5 ppm).

Disposal of containers with waste oil (oil residues and used oil) should not result in any significant environmental exposure. Waste oil may be recycled or incinerated. Incineration of the oil for fuel value or due to container reconditioning will destroy the substance. Used/waste oil collected by industrial and commercial users, which is not re-used, is expected to be disposed of to approved industrial facilities. D-I-Y consumer oil, if disposed of to domestic landfills, should remain in the containers. If leaks occur the oil should remain within the landfill, absorbing to soil and sediment.

12. ASSESSMENT OF PUBLIC AND OCCUPATIONAL HEALTH AND SAFETY EFFECTS

Since Parabar 9340 will only be imported as a component of a lubricant oil additive in the imported product, limited exposure to this chemical in its pure form is likely to occur. In the unlikely event of an accident, transport workers would only be exposed

[3] Given 20% of the oil is not collected, then of the 2 000 tonnes of the notified substance, 400 tonnes would not be collected (*ie* 20% x 2 000 tonnes). This would be 1 095 kg.d^{-1} (*ie* 400 tonnes/365 d). The dilution at a rural town could reasonably be expected to be about 5 ML, while for a major city, say Melbourne, it would be 500 ML. This would give final concentrations of the oil of 219 mg.L^{-1} per day and 2.19 mg.L^{-1} per day, respectively.

to Parabar 9340 in the oil additive mixture. The new chemical has a relatively high molecular weight (> 1 000) and low volatility, and is therefore unlikely to be absorbed across biological membranes such as the skin or to be inhaled in the event of a spill.

Since the delivery, blending and dispensing processes used in reformulation are automated and contained, workers will normally only be exposed to very small volumes of Parabar 9340. Exposure could occur during connection of hoses and during maintenance work on containers, pumps and connections, but this exposure is minimised by flushing with mineral oil on completion of processes. Data from toxicity and irritant studies shows very low acute toxicity and irritation potential, suggesting minimal risk to workers if exposed on an incidental basis.

The skin sensitisation response in guinea pigs is strong, but the subsequent human study is extensive and the concentration levels used are sufficient to cover anticipated exposure levels in the workplace to this chemical. In a repeat dermal toxicity study in rats no treatment related effects were seen. Genotoxicity results show no adverse effects from Parabar 9340.

Based on the above information it is considered that Parabar 9340 will not pose a significant risk to occupational health when used in the circumstances described by the notifier.

Workers should be aware that the notified chemical will be blended with mineral oil and other additives to which exposure should be minimised (see recommendations section).

Based on the above information, it is unlikely that the notified chemical will pose a significant hazard to public health when used in the proposed manner.

13. RECOMMENDATIONS

To minimise occupational exposure to Parabar 9340 the following guidelines and precautions should be observed:

- Industrial clothing should conform to the specifications detailed in AS 2919 (19) and AS 3765.1 (19);
- Impermeable gloves or mittens should conform to AS 2161 (20);
- All occupational footwear should conform to AS/NZS 2210 (21);
- Spillage of the notified chemical should be avoided, spillages should be cleaned up promptly with absorbents which should then be put into containers for disposal;
- Good personal hygiene should be practised to minimise the potential for ingestion;
- A copy of the MSDS of the product should be easily accessible to employees.

Exposure to mineral oil and other oil additives should be minimised by wearing appropriate personal protective equipment as detailed in the MSDS.

14. MATERIAL SAFETY DATA SHEET

The MSDS for the imported product containing the notified chemical was provided in accordance with the *National Code of Practice for the Preparation of Material Safety Data Sheets* (22).

This MSDS was provided by the applicant as part of the notification statement. It is reproduced here as a matter of public record. The accuracy of this information remains the responsibility of the applicant.

15. REQUIREMENTS FOR SECONDARY NOTIFICATION

Under the Act, secondary notification of the notified chemical shall be required if any of the circumstances stipulated under subsection 64(2) of the Act arise. No other specific conditions are prescribed.

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Attachment 1

The Draize Scale for evaluation of skin reactions is as follows:

Erythema Formation	*Rating*	*Oedema Formation*	*Rating*
No erythema	0	No oedema	0
Very slight erythema (barely perceptible)	1	Very slight oedema (barely perceptible)	1
Well-defined erythema	2	Slight oedema (edges of area well-defined by definite raising	2
Moderate to severe erythema	3	Moderate oedema (raised approx. 1 mm)	3
Severe erythema (beet redness)	4	Severe oedema (raised more than 1 mm and extending beyond area of exposure)	4

The Draize scale for evaluation of eye reactions is as follows:

CORNEA

Opacity	*Rating*	*Area of Cornea involved*	*Rating*
No opacity	0 none	25% or less (not zero)	1
Diffuse area, details of iris clearly visible	1 slight	25% to 50%	2
Easily visible translucent areas, details of iris slightly obscure	2 mild	50% to 75%	3
Opalescent areas, no details of iris visible, size of pupil barely discernible	3 moderate	Greater than 75%	4
Opaque, iris invisible	4 severe		

CONJUNCTIVAE

Redness	*Rating*	*Chemosis*	*Rating*	*Discharge*	*Rating*
Vessels normal	0 none	No swelling	0 none	No discharge	0 none
Vessels definitely injected above normal	1 slight	Any swelling above normal	1 slight	Any amount different from normal	1 slight
More diffuse, deeper crimson red with individual vessels not easily discernible	2 mod.	Obvious swelling with partial eversion of lids	2 mild	Discharge with moistening of lids and adjacent hairs	2 mod.
Diffuse beefy red	3 severe	Swelling with lids half-closed	3 mod.	Discharge with moistening of lids and hairs and considerable area around eye	3 severe
		Swelling with lids half-closed to completely closed	4 severe		

IRIS

Values	*Rating*
Normal	0 none
Folds above normal, congestion, swelling, circumcorneal injection, iris reacts to light	1 slight
No reaction to light, haemorrhage, gross destruction	2 severe