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CHEMICAL

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME



The *Industrial Chemicals (Notification and Assessment) Act 1989* (the Act) commenced on 17 July 1990. As required by Section 5 of the Act, a Chemical Gazette is published on the first Tuesday in any month or on any days prescribed by the regulations.

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1 POLYMER NOTIFICATION GUIDANCE

Criteria

The type of notification required under NICNAS for a polymer depends mainly on the volume per year and the molecular weight. The type and category of polymer and the corresponding type of notification are summarised in the table below. In broad terms, these are as follows:

Standard notification

- all biopolymers with a volume greater than 1 tonne per year; and
- synthetic polymers with a volume greater than 1 tonne per year and a number-average molecular weight (NAMW) less than 1000.

Limited notification

- small volume polymers (less than 1 tonne per year) and site-limited polymers (less than 10 tonne per year);
- synthetic polymers with a volume greater than 1 tonne per year and a NAMW greater than 1000; and
- polymers used for research and development or analysis at a volume between 50 kg and 1 tonne per year.

Synthetic polymers of low concern (PLC)

- polymers which satisfy the criteria listed below. Guidance for notifiers is provided in Appendix 12 in the NICNAS Handbook for Notifiers on the NICNAS website www.nicnas.gov.au.

It should be noted that each batch of a particular new polymer must meet the criteria to be eligible for notification as a PLC.

(a) *Number-average molecular weight*

Except for certain polyesters (see (g) below), a PLC must have a NAMW greater than 1000.

For polymers with NAMW between 1000 and 10000, the allowable low molecular weight species (MW below 1000 and 500) for these polymers is 25% and 10% respectively provided that the polymer has a limited content of reactive functional groups (for guidance and list of reactive functional groups, see Appendix 12 of Handbook).

For polymers with NAMW greater than 10000, the allowable low molecular weight species (MW below 1000 and 500) for these polymers is 5% and 2% respectively. There is no restriction on the number of reactive functional groups in the polymer.

(b) *Low charge density*

A polymer has a low charge density if it is not a cationic polymer or is not reasonably anticipated to become a cationic polymer in a natural aquatic environment ($4 < \text{pH} < 9$).

Certain solid materials and polymers with a low content of cationic groups are allowable as PLCs (see guidance in Appendix 12 of Handbook).

(c) *Low residual monomer content*

A polymer has a low residual monomer content if the concentration of monomer in the polymer is below its lowest concentration cut-off in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*. That is, the polymer would not be classified as a hazardous substance.

(d) *Stability*

A polymer is stable under the conditions in which it is used if it does not readily break down by hydrolysis, thermal degradation, photodegradation, depolymerisation or any other means.

(e) *Chemical composition*

A PLC must contain as an integral part of its composition at least two of the atomic elements carbon, hydrogen, nitrogen, oxygen, silicon and sulfur. There are restrictions on the content of other elements (see guidance in Appendix 12 of Handbook).

(f) *Water absorbing polymers*

A water absorbing polymer with NAMW 10000 and greater cannot be a PLC.

(g) *Polyesters*

A polyester manufactured solely from one or more allowable reactants may be a PLC, provided that the polymer meets the other criteria (see Appendix 12 of Handbook for list of allowable reactants).

Notification Requirements

The data requirements for a polymer subject to a Standard Notification, a Limited Notification or notification as a Synthetic Polymer of Low Concern are found in the Handbook on the website. Similarly, requirements for a polymer which may be eligible for a commercial evaluation or low volume permit are found under the appropriate heading.

Part D of the Schedule, which is specific to polymers, is required in most polymer notification statements. In general, there are more stringent data requirements for biopolymers than synthetic polymers. Guidance for each of the data items in the Schedule can be found in chapter 10, *SCHEDULE OF DATA REQUIREMENTS*, in the Handbook on the website.

TABLE: Polymers which Require an Assessment Certificate or a Permit

Notification Category		Schedule Requirements	
		Synthetic Polymer	Biopolymer
Standard > 1 te/yr	NAMW <1000	A,B,C,D	A,B,C,D
	Limited NAMW >1000	A,B,D	A,B,C,D
Limited Small volume (< 1 te/yr) or Site-limited (< 10 te/yr)	NAMW <1000	A,B	A,B,D
	NAMW >1000	A,B	A,B,D
Synthetic polymer of low concern		Complete Form 1-PLC	Not applicable
Research and development or analytical	< 50 kg/yr	No notification	No notification
	Limited 50 kg - 1 te/yr	A,B	A,B,D
Less than 10 kg/yr		No notification if low risk	
Commercial evaluation permit (< 2 te for < 2 yr)		As for non-polymers	
Low volume permit (< 100 kg/year)		As for non-polymers	

2 PUBLICATION SUMMARY REPORT

Triglycidyl Trimellitate Summary Report Reference No: NA/853

Vantico Pty. Ltd. (ACN: 091 627 879) of 235 Settlement Road Thomastown VIC 3074 has submitted a standard notification statement in support of their application for an assessment certificate for Triglycidyl Trimellitate. The notified chemical is intended to be used as cross-linking agent for polyester or acrylic powder coatings. Two to 15 tonnes of the notified chemical will be imported per annum for each of the first five years.

ASSESSMENT OF PUBLIC, OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL EFFECTS

Hazard Assessment

Based on the results of studies of either the notified chemical or a structural analogue, the notified chemical is considered to be of very low acute oral toxicity and low acute dermal toxicity in rats. It is a slight skin irritant, a moderate to severe eye irritant and a skin sensitiser.

The notified chemical is considered to be of low repeated dose toxicity, with a NOEL of 1000 mg/kg/day, the highest dose tested, being identified for the structural analogue.

Positive findings were obtained in *in vitro* genotoxicity studies but negative findings were obtained in two *in vivo* studies. Therefore the notified chemical cannot be classified as a mutagen.

Overall, based on the submitted information, the notified chemical would be classified as an eye irritant and a skin sensitiser according to the *Approved Criteria for Classifying Hazardous Substances*. Consequently labelling with risk phrases R36 and R43 is appropriate.

Occupational Health and Safety

Transport and Storage

The notified chemical is not manufactured in Australia, but will be imported as a component in Araldite PT 910 at < 50%. Araldite PT 910 exists as solid, waxy granules, which are not inhalable. The notified chemical is of low volatility and is therefore unlikely to be available for inhalation from the imported product. Waterside workers and transport and storage personnel will only handle Araldite PT 910 as it is imported; in 25 kg polythene bags, contained in outer packaging. The 25 kg polythene bags will not be opened until arrival at reformulators. Therefore waterside, transport and storage workers will not be directly exposed to the notified chemical except in the event of spills.

Reformulation Plant Operators

At reformulation sites, Araldite PT 910 granules are manually weighed and poured from bags or shovelled using metal scoops, into mixing hoppers. Other raw materials are added and the mixture is transferred to an extruder either under gravity in a closed system, or poured manually in an open system. The mix is heated until it melts (>100°C), remixed and then

extruded onto a roller, where it is spread into a thin sheet. The melted mix solidifies on cooling and the solid sheets are chipped, milled, sieved and packaged.

The potential for inhalation exposure to the notified chemical in the form of dust exists during weighing, addition to and extraction from mixing hoppers, during milling and packaging activities and on disposal of empty containers. According to the notifier local exhaust ventilation will be in use in all areas where dust containing the notified chemical may be generated. Dermal exposure may also occur during these activities and also to the melt as it leaves the extruder. According to the notifier reformulation workers must wear personal protective equipment consisting of long sleeved overalls, disposable dust masks or a powered air supplied respirator, chemical goggles, rubber gloves and safety boots, which will contribute to reducing exposure. Also, the notified chemical is only present at a maximum of 50% in the Araldite PT 910 granules and 1.8% in the extrudate and solidified final product. However the notified chemical is a skin sensitiser and therefore exposure to small concentrations may lead to adverse health effects. Also, there is potential for respiratory sensitisation from breathing of dust containing the notified chemical. Therefore if local ventilation fails or appropriate PPE is not correctly used as advised there is potential for adverse health effects to occur.

Quality Control Workers

Quality control personnel will be exposed to the solid extrudate in the form of flakes and powders during collection of samples, to finely milled powder during milling of the flakes, and when spraying the fine powders onto test panels. All milling, spraying and cleaning of laboratory equipment is to be performed in a spray booth with exhaust ventilation. Quality control personnel will wear personal protective equipment consisting of laboratory coats and use either powered air respirators or disposable dust masks. Also the notified chemical will be present at a maximum concentration of approximately 1.8%. Overall, if all control systems are correctly employed, the risk of adverse health effects should be low in this group of workers.

Research and Development

Research and development personnel will potentially be exposed to the notified chemical via inhalation and dermally while working with the granules of Araldite PT 910, the dry-blended reformulated mixture, the melt mix (dermal exposure only) and final paint products. They will therefore be exposed to mixtures containing a maximum of 50% notified chemical. However all research and development is to be performed within a controlled laboratory fitted with local dust extraction system. Research and development personnel will wear personal protective equipment consisting of laboratory coats, rubber gloves, safety glasses, and disposable dust masks. As above, if all controls systems are correctly employed, the risk of adverse health effects should be low in this group of workers.

Maintenance Workers

Maintenance workers may be exposed via inhalation and dermally to dusts containing the notified chemical left on the machinery they are required to service. They will therefore be exposed to mixtures containing a maximum of 50% notified chemical. Local exhaust ventilation will not be available, although according to the notifier maintenance workers must wear personal protective equipment consisting of PVC or nitrile rubber gloves and disposable dust masks. Due to the nature of the work, the lack of exhaust ventilation and assuming that all other control systems, such as PPE are correctly employed, the risk of adverse health

effects in this group of workers is at least equal to that of the reformulators noting that maintenance of equipment should not occur frequently.

Production Administration Workers

Production administration workers are expected to have intermittent contact with the notified chemical, although when they are to spend lengthy periods of time in the production area they must wear personal protective equipment consisting of dust coats, and disposable dust masks. Overall, it is considered that administration workers are unlikely to come into direct contact with the notified chemical and hence the risk of adverse health effects should be low in this group of workers.

Application Plant Operators

Applicators will potentially be exposed to the notified chemical in the final product at a maximum concentration of 1.8% when manually loading the hoppers which automatically feed the spray gun and when collecting oversprayed coating. However, exhaust ventilation is used in the loading area and oversprayed powder may be collected using vacuum cleaners. Exposure may also potentially occur during spraying activities. However, according to the notifier, all spraying is to be performed in a spray booth fitted with local exhaust ventilation. Application plant operators must wear personal protective equipment consisting of disposable overalls and rubber gloves, chemical goggles or face shield and dust masks when exposure is considered to be minimal, otherwise full-face respirators. If all controls systems are correctly employed, the risk of adverse health effects should be low in this group of workers.

Overall, the greatest risks of workers experiencing adverse health effects, such as skin sensitisation and eye, respiratory and skin irritation, due to exposure of the notified chemical, are considered to be with the maintenance workers and the reformulators. The risks for these workers are considered to be low.

Public Health

The notified chemical will be used as an ingredient in powder coatings for use on items such as outdoor furniture, car parts and door and window frames. Products containing the notified chemical are not available for sale to the public. Members of the public may make dermal contact with items coated with products containing the notified chemical. However, the risk to public health from the notified chemical will be negligible because the notified chemical is present at low concentrations and is likely to be bound within a cured resin coating, from which it is unlikely to be bioavailable.

Environmental Effects

It is not expected that the new chemical will constitute a hazard to the environment when used as a curing agent for powder polymer coatings in the manner indicated by the notifier.

A maximum of 2.5 tonnes of the chemical are expected to be placed into landfill each year with waste resulting from formulation and manufacture of powder coatings. A further maximum of 3.75 tonnes per annum may be lost from overspray during application of the powder coatings to metal articles in spray booths, and while some of this would be collected and re-used, most would be either placed into landfill with other waste, or could possibly be incinerated. Although not readily biodegradable, the compound is expected to slowly mineralise to water and landfill gases as a result of slow biological and abiotic processes.

Incineration would destroy the compound with liberation of water vapour and oxides of carbon.

After application to metal articles, the polymer coating is cured through heat treatment in a furnace, and after this the chemical is tightly bound into the polymer matrix with no potential for release.

At the end of their useful lives articles coated with the polymer (and cured through the agency of the notified chemical) would be either placed into landfill or smelted in a blast furnace for metal recovery. Smelting would destroy the chemical, while in a landfill the polymer coating would be eventually degraded through slow biological and abiotic processes.

Ecotoxicity studies indicate that the chemical may exhibit some toxicity against fish and daphnia, but at worst the chemical is regarded as slightly to moderately toxic to these species. However, very little of the notified chemical is expected to reach receiving waters and realistically it presents no hazard to this compartment. The chemical is not expected to bioaccumulate.

RECOMMENDATIONS

Regulatory controls

- The NOHSC Chemicals Standards Sub-committee should consider the following health hazard classification for the notified chemical:
 - R36: Irritating to eyes
 - R43: May cause sensitisation by skin contact

and use of the safety phrase:

- S22: Do not breathe dust
- Use the following risk phrases for products/mixtures containing the notified chemical:
 - $\geq 20\%$: R36
 - $\geq 1\%$: R43

Control Measures

Occupational Health and Safety

- Employers should implement the following engineering controls to minimise occupational exposure to the notified chemical as introduced and in final powder coating products:
 - spray painting of powder coatings should be performed in a booth;
 - spray painting booths and equipment should be in accordance with Australian Standard AS3754 -1990 - *Safe Application of Powder Coatings by Electrostatic Spraying*;
 - local exhaust ventilation should be used when spraying, during filling of hoppers, when reclaiming powder and during clean-up;

- automatic spray guns, feed lines and feed equipment should be used;
 - spray gun air pressure should be minimised to prevent overspray as this could result in unnecessary powder build-up within the spray booth;
 - the power supply and powder coating feedlines should be interlocked with the air extraction system so that if a fault develops in the ventilation system, the powder coating and power supplies are cut off;
 - the spread of dust within the powder coating building should be minimized;
 - circumstances leading to draughts and air turbulence should be evaluated and controls implemented;
 - operations of opening powder coating packages, loading of hoppers and reclaiming powder should be contained to prevent or minimise the generation of dusts;
 - the layout of the workstation and the size of the hopper opening should be such that generation of dust is minimised in filling the hopper, other methods in the use of hoppers should be considered, namely: large hoppers should be used to avoid frequent refilling of smaller units, and preference should be given to the use of powder coatings supplied in drums which allow mechanical transfer of the powder to hoppers.
- Employers should implement the following safe work practices to minimise occupational exposure during handling of the notified chemical as introduced and in final powder coating products:
 - work practices designed to avoid the generation of dust;
 - restricting access to spray painting areas;
 - designing a safe workplace so that the spray painter is never between the object to be sprayed and the airflow of contaminated air;
 - situating the articles to be sprayed sufficiently within the booth to avoid ricochet;
 - implementing good personal hygiene practices, for example, powder coating dust should not be allowed to collect on the face, exposed body areas should be thoroughly washed and overalls should be regularly cleaned;
 - storing powder coating and waste powder in a designated area and access restricted;
 - cleaning booths and surrounding areas on a regular basis;
 - promptly cleaning-up spills of powder coatings;
 - not using compressed-air or dry sweeping during clean-up operations;
 - using a spark-proof squeegee when a wet clean-up is required;
 - emptying vacuum cleaners in the booth and under exhaust ventilation;
 - taking care to avoid the generation of dust during disposal of waste powder;
 - waste powder being baked in the original box for disposal to landfill as a solid;
 - vacuuming primary decontamination of work clothing;
 - checking regularly the cleaning and maintenance of plant equipment, including ventilation and spray equipment and filters;
 - to minimise electrical hazards associated with electrostatic spraying all equipment, including spray guns and booth, should be earthed; all hooks used to suspend objects to be sprayed should be cleaned prior to re-use in order to maintain effective metal contact.

- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified chemical as introduced and in final powder coating products:
 - overalls, gloves (PVC or nitrile rubber), head and eye protection and respiratory protection; for spraying the respiratory protective equipment should provide head covering to avoid dust build-up around the edges of the face masks; during manual spraying, the gun-hand must not be insulated from the gun, either the gun hand should be cowled by a cover sleeve or the palm of an insulating glove may be cut out; operators standing outside a booth and spraying inside a booth through an aperture should wear this type of protective equipment; and anti-static and conductive footwear should be provided.

Guidance in selection of personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

- Atmospheric monitoring of dust levels should be conducted to measure workplace concentrations during formulation and use of the notified chemical.
- A copy of MSDS should be easily accessible to employees.
- If products and mixtures containing the notified chemical are classified as hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Secondary Notification

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

3 PUBLICATION SUMMARY REPORT

**Merquat 2001
Summary Report
Reference No: NA/896**

Nalco Australia Pty Ltd of 2 Anderson St Botany NSW 2019 (ABN 41 000 424 788) has submitted a limited notification statement in support of their application for an assessment certificate for Merquat 2001. The notified polymer is intended to be used in the formulation of cosmetic and personal care products, such as soaps and shampoos. Less than 16 tonnes of the notified chemical will be imported per annum for each of the first five years.

ASSESSMENT OF PUBLIC, OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL EFFECTS

Hazard Assessment

The notified polymer has low acute oral toxicity in rats but is a slight irritant to rabbit skin and eyes. In a human repeat insult test study, the notified polymer at 20 % in aqueous solution produced results indicative of sensitisation and/or cumulative irritation during the induction phase in a small number of subjects, although results indicative of sensitisation were not seen in a challenge phase using a 5 % aqueous solution of the notified polymer. The notified polymer was found to be non-mutagenic under the conditions of the test in a bacterial point mutation assay.

Based on the results of the toxicity studies submitted by the notifier, the notified polymer would not be classified as a hazardous substance in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*. However the results of the human repeat insult patch test indicate that prolonged or repeated dermal contact with concentrated solutions of the notified polymer should be avoided.

Occupational Health and Safety

The results of the hazard assessment indicate that skin sensitisation in sensitive individuals and skin and eye irritation on dermal contact with concentrated solutions of the notified polymer are the main occupational risks in handling the notified polymer. Little risk is expected in handling reformulated consumer products containing the notified polymer at low concentrations.

Workers who may handle the concentrated solutions, apart from in sealed containers only, include laboratory staff, repackaging operators, and customer service and reformulation workers. Contact with residues of the notified polymer on equipment may occur when transfer hoses are connected or disconnected at the drums. All workers handling the notified polymer in concentrated solutions will wear chemical resistant gloves and safety glasses or goggles.

Public Health

The use of these products is likely to be widespread among consumers. However the low toxicity of the Merquat 2001 and the low concentration of it in the proposed consumer

formulations suggests that it will not pose a significant hazard to public health when used in the proposed manner.

Environmental Effects

A maximum of 1.6 tonnes of the notified polymer is expected to be placed into landfill each year with manufacturing waste and domestic garbage containing incompletely consumed packages of the consumer products. Although it is not readily biodegradable, the polymer is expected to be slowly mineralised to water and landfill gases as a result of slow biological and abiotic processes. Some of the polymer may also be incinerated, in which case it would be destroyed liberating water vapour and oxides of carbon and nitrogen.

Almost all the notified polymer will be released to the sewer as a consequence of its use in consumer products such as soaps and shampoos. At maximum import levels the Predicted Environmental Concentration (PEC) of the polymer in sewage is estimated as 15.4 µg/L. The polymer is expected to remain substantially associated with sewage sludge and very little is expected to be released with sewer plant effluent to receiving waters. However, assuming no degradation or assimilation of the polymer into sludge and that a dilution factor of 1:10 is appropriate, then the PEC in receiving waters would be reduced to 1.54 µg/L.

The E_bC₅₀ for green algae (the most sensitive species for which toxicity data is available) is 0.73 mg/L, and taking this as the Predicted No Observed Effect Concentration (PNEC), the safety margin (Q, which is the ratio PNEC/PEC) is estimated as around 500. Reducing this by a factor of 1000 to account for the fact that only two ecotoxicity end points are available (for daphnia and green algae), the Q value becomes 0.5 indicating a possible environmental hazard. However, receiving waters usually contain suspended colloidal matter of both mineral and organic origin (eg. humic material), and the interaction of cationic polymers with this material has been demonstrated to dramatically reduce the toxicity of the polymers. In addition, most of the notified polymer will become associated with sewage sludge during passage through the sewer mains and the sewage treatment plants and will not be released to receiving waters.

It is not expected that the notified polymer will constitute a hazard to the environment when used in cosmetics in the manner indicated by the notifier. However, if released in quantity to natural waters (for example as a result of transport accident) the available toxicity data indicates that such a spill may cause severe ecological damage.

The MSDS supplied by the notifier indicates that the notified polymer is characterised as a moderate hazard to the environment, and also indicates that the polymer should not be allowed to enter waterways due to its toxicity to aquatic species.

RECOMMENDATIONS

Regulatory controls

- The NOHSC Chemicals Standards Sub-committee should consider the following health hazard classification for the notified polymer:
 - S24: Avoid contact with skin
 - S37: Wear suitable gloves

Control Measures

Occupational Health and Safety

- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified polymer as introduced:
 - impermeable gloves, safety goggles and industrial clothing

Guidance in selection of personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

- A copy of the MSDS should be easily accessible to employees.
- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Secondary Notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

- (1) Under Subsection 64(1) of the Act; if
 - the import volume increases above 30 tonnes notified polymer per annum, in which case a test report on the toxicity of the notified polymer against fish should be provided;

or

- (2) Under Subsection 64(2) of the Act:
 - if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.

4 PUBLICATION SUMMARY REPORT

Polymer in Superfloc AF 124 and Superfloc 1264 Flocculants Summary Report Reference No: NA/938

Cytec Australia Holdings Pty Ltd of Suite 1, 7-11 Railway Street, Baulkham Hills, NSW 2153 (ABN 45 081 148 629) has submitted a limited notification statement in support of their application for an assessment certificate for Polymer in Superfloc AF 124 and Superfloc 1264 Flocculants. The notified polymer is an anionic flocculant and is intended to be used for secondary clarification of industrial wastewater. It will be imported in two finished products - Superfloc AF 124 and Superfloc 1264 (24-27% and 22-23% notified polymer respectively).

The notified polymer will be imported in 1000 L Intermediate Bulk Containers at a rate of 20-30 tonnes per year for each of the first 5 years.

ASSESSMENT OF PUBLIC, OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL EFFECTS

Hazard Assessment

A combined skin and eye acute irritation study in rabbits of Superfloc AF 124 containing 24-27% notified polymer resulted in both dermal and ocular irritation, with the product classified as hazardous with the risk phrases R36/38 – Irritating to Eyes and Skin according to the NOHSC *Approved Criteria for Classifying Hazardous Substances*. The notified polymer is classified similarly.

The toxicological properties of the products containing notified polymer may be influenced by the presence of hazardous ingredients such as ammonia and petroleum distillate, which are inhalation hazards, with the former also a skin, eye and respiratory irritant. Given the high molecular weight of the notified polymer, absorption across biological membranes is highly unlikely and consequently, systemic toxicity is likely to be low.

The MSDS for the imported product containing the notified polymer indicates that the product presents a significant slip hazard.

Occupational Health and Safety

During the dilution and subsequent addition of the imported flocculants containing the notified polymer to industrial wastewaters, skin contamination may occur, resulting in a risk of skin and eye irritation. The risk is low during addition of the diluted solution to the wastewater streams due to the use of metering equipment and the low concentration of Superfloc. There is also a risk of slipping during handling of the imported flocculants due to their physical nature.

Therefore, it is important that the dilution procedure be automated as much as possible and that safe work practices be introduced to prevent spillage. To further reduce the risks, appropriate personal protective equipment such as impervious clothing and footwear, impervious gloves and safety goggles/face shield should be worn by workers when handling the flocculants containing the notified polymer.

Public Health

Exposure of the public as a result of the use, transport and disposal of products containing the notified polymer is likely to be negligible. Therefore, the notified polymer is unlikely to pose a significant risk to public health when used in the proposed manner.

Environmental Effects

The intended use pattern of the notified polymer is expected to result in the majority of the polymer being eventually released to the environment. The ecotoxicity data provided indicate the notified polymer is slightly toxic to fish, highly toxic to daphnia and moderately to highly toxic to marine algae.

Assuming a large urban paper mill or industrial effluent plant treats 5 ML of wastewater each day and flows into a sewerage treatment system with a capacity of 250 ML, then the concentration of the notified polymer would be diluted by a factor of 50. Assuming an industrial effluent plant located in a rural area treats 2 ML of waste each day and flows into a sewerage treatment system with a capacity of 5 ML, then the concentration of the notified polymer would be diluted by a factor of 2.5. Assuming these dilution factors, that 80% of the notified polymer is removed from the wastewater stream through association with effluent and a dosing rate of the notified polymer of 1 mg/L, then the metropolitan and rural PEC values are 0.004 and 0.08 mg/L, respectively. When released to receiving waters the concentration is reduced by a further factor of at least 10, so the Predicted Environmental Concentration (PEC) for metropolitan and rural use are 0.0004 and 0.008 mg/L, respectively.

Applying an assessment factor of 100 to the EC_{50} for *Daphnia* (the most sensitive test species) suggests the recommended no effect concentration for the notified polymer would be 0.0015 mg/L. The PEC value for use in a metropolitan area is just below the recommended no effect concentration for the notified polymer ($PEC/PNEC = 0.27$) while the ratio for use in a rural area is 5.3. Given this latter ratio is greater than one, it suggests a potential hazard.

When used in a mining situation, the notified polymer is expected to be released to, and confined within, specialised tailings dams. Biodegradation of the notified polymer is considered unlikely. However, under the low pH conditions of the tailings dam, the notified polymer is expected to slowly degrade. When used in the treatment of wastewater from mine sites, the notified polymer is unlikely to pose a significant risk to the environment.

The notified polymer is not expected to cross biological membranes due to its high molecular weight and is therefore not expected to bioaccumulate.

Wastes containing the notified polymer including residues from imported drums and sludge will be disposed of in landfill and are expected to be immobile. Even though the notified chemical is soluble in water, it is expected to adsorb to soil and sediment due to its high molecular weight and polyanionic nature. However, some leaching of the notified polymer can not be discounted.

In conclusion, the environmental exposure and overall environmental hazard from the use of the notified polymer in pulp and paper manufacture in metropolitan areas seems acceptable

but in rural areas may be significant. We understand that only metropolitan use is expected at this time.

RECOMMENDATIONS

Control Measures

Occupational Health and Safety

- Employers should ensure that transfer procedures are automated as much as possible. Spills should be avoided and cleaned up promptly.
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified polymer as introduced in the products Superfloc AF 124 and Superfloc 1264:
 - Impervious clothing and footwear
 - Impervious gloves
 - Safety goggles/face shield

Guidance in selection of personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

- A copy of the MSDS should be easily accessible to employees.

If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Storage

- The following precautions should be taken regarding storage of the notified polymer:
 - Avoid iron, copper or aluminium containers or equipment.
 - Store at < 32°C.

Emergency procedures

- Precaution should be observed following spills/release as the product containing the notified polymer may cause a slip hazard. Dry-sweeping compound may be required if slipperiness remains following clean-up.

Secondary Notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

(1) Under subsection 64(1) of the Act:

- If use in rural paper mills or industrial effluent plants is proposed, details of the plant effluent releases including sewerage capacity and flows should be provided to enable a more accurate assessment of hazard.

or

(2) Under subsection 64(2) of the Act:

- if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.

5 PUBLICATION SUMMARY REPORT

Prosoft TQ 1003 Summary Report Reference No: NA/956

Betzdearborn Australia Pty Ltd of 69-77 Williamson Road, Ingleburn NSW 2565 (ABN 84 001 221 941) has submitted a standard notification statement in support of their application for an assessment certificate for Prosoft TQ 1003. The notified chemical is intended to be used as a pulp additive for paper making for toilet and facial tissue. Seventy-two tonnes of the notified chemical will be imported per annum for each of the first five years.

ASSESSMENT OF PUBLIC, OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL EFFECTS

Hazard Assessment

Based on analogue data, the notified chemical should possess moderate acute oral and dermal toxicity. Irritation studies in rabbits show that the notified chemical is corrosive to skin and eyes. Although inhalation toxicity data were not provided for the notified chemical, a similar corrosive effect would be expected in lungs.

Cases of skin and respiratory sensitisation in humans are reported for quaternary ammonium compounds analogous to the notified chemical.

No repeat dose toxicity data were provided for the notified chemical. A 91-day oral study of an analogue established a NOEL of 120mg/kg/day, based on decreased body weight gain. In a corresponding dermal study in rabbits by the same authors, the NOEL was 200mg/kg/day, also based on decreased body weight gain. No developmental toxicity data were provided for the notified chemical. In an analogue study of alkyl imidazoline, no developmental effects attributable to treatment were observed. On this basis, a developmental toxicity NOEL of ≥ 100 mg/kg/day and LOEL of > 100 mg/kg/day were assigned.

In a bacterial reverse mutation assay, the notified chemical was non-mutagenic. In contrast, mutagenicity was observed in a mouse lymphoma mutation assay. In a human lymphocyte chromosome aberration assay the notified chemical was shown to be non-clastogenic. Data are insufficient for the notified chemical to attract a genotoxic classification.

On the basis of the NOHSC Approved Criteria for Classifying Hazardous Substances, the notified chemical should be classified Harmful (Xn) and Corrosive (C) with the risk phrases R20/21/22 – Harmful by Inhalation, in Contact with Skin and if Swallowed, R34 – Causes Burns and R42/43 – May Cause Sensitisation by Inhalation and Skin Contact.

Occupational Health and Safety

The main activities during which exposure to the notified chemical may occur are decanting from import containers and routine maintenance of plant during the paper manufacturing process. Given the enclosed nature of the process, exposure downstream of the initial mixing process is unlikely. The main routes of exposure are likely to be dermal and ocular from slops and spills.

The toxicity profile of the notified chemical indicates that if dermal and/or ocular exposure occurs, especially at the decanting stage where concentrated chemical is handled, severe and possibly permanent damage is likely to skin and eyes. Although the low vapour pressure indicates that vapour formation is unlikely, if inhalation exposure does occur, for example from aerosols produced during manufacturing processes, the severity of effects to skin and eyes suggests that severe permanent respiratory damage would also result. Moreover, on the basis of analogue data the notified chemical is a skin and respiratory sensitizer and so exposure via these routes may be associated with occupational sensitisation.

Although the potential for worker exposure to the notified chemical during paper tissue manufacture is restricted, the notified chemical is of concern to occupational health and safety, given the severity of its health effects.

Given the identified exposure routes and these potentially serious health impacts, personal protective equipment must be used. It is important that during handling of the notified chemical especially in imported form that skin and eye exposure be prevented by the use of impervious clothing and footwear, gloves and chemical safety goggles. In addition, given the unpredictable nature of allergic sensitisation, it is prudent that personnel such as maintenance workers also be protected from exposure to even small amounts of chemical residue such as on plant. As a minimum, these workers should also use impervious clothing/footwear and gloves.

Public Health

Public exposure to the notified chemical arising from use, waste disposal or during transport is expected to be minimal. The public will be exposed by dermal contact with tissue paper containing the notified chemical. However, the chemical is likely to be strongly bound to the fibres of the tissue paper and transfer to skin of the user is expected to be negligible. It is considered that the notified chemical will not be a significant risk to public health.

Environmental Effects

Approximately 50 tonnes of the chemical will be released to the sewer in association with used toilet paper. Assuming that the tissue is released into sewers throughout Australia the global Predicted Environmental Concentration (PEC) of the chemical in sewage is estimated as 0.05 mg/L. However, the chemical would initially be associated with the solid cellulose material in paper and not in aqueous solution. As the cellulose fibres break down through biological action, the chemical may be released but would then associate with negatively charged humic material and assimilate into sewage sludges. Periodically sludges are removed from the sewage systems by the water authorities and are usually placed into landfill.

A further 25 tonnes of notified chemical will be placed into landfill with used facial tissue. Based on an annual quantity of municipal solid waste of 13 million tonnes, the average concentration of the notified chemical entering landfill from the disposal of facial tissues is estimated as approximately 2 ppm.

No biodegradation data were provided in the notification, but since the chemical does not contain any functional groups which are known to be refractory to degradation, it is expected to be ultimately biodegradable and under aerobic conditions it would be mineralised to water

and oxides of carbon and nitrogen while in anaerobic environments it would decompose to water, methane and ammonia.

The release of the notified chemical with the greatest potential for environmental impact is the discharge of waste water from the pulp and paper mill.

Annually, assuming 90% fixation of the new chemical to fibre, a maximum of approximately 8.4 tonnes will be lost from the paper making process and sent to a water treatment plant prior to discharge to Lake Bonney. Although the waste treatment plant incorporates a stage of extended aeration in treatment ponds, the expected low rate of biodegradation indicates that it is unlikely that much of the chemical would degrade in this plant. However, it is probable that the chemical would become associated with humic material in solid sludge at the bottom of the aeration lagoons. The company indicated that waste sludge from this plant is composted with bark and other materials and this would eventually be applied to land – probably forests.

The volume of waste water discharged from the paper plant is approximately 40 megalitres each day, and the maximum concentration of the chemical in the paper plant effluent is expected to be approximately 0.57 mg/L.

The waste treatment plant consists of a primary clarifier and a series of three aerobic degradation ponds, and the residence time in the plant is approximately 10 days. After treatment the effluent then passes into an 11 km drain before discharging into Lake Bonney. Although biodegradation during the aeration stages is unlikely, it is probable that much of the chemical would adsorb to humic material in the lagoons and would eventually be assimilated into bottom sediments. If it is assumed that (as with the paper fibres) around 90% of this discharged Prosoft TQ 1003 is removed into sediments, the worst case PEC of the chemical in the effluent discharged to Lake Bonney is estimated as 0.06 mg/L.

Lake Bonney is dune bound and the water level is managed in such a way as to minimise the need for marine discharge – release to the marine environment has occurred only twice in the last decade, and so it appears that the total volume of water flowing into the lake is roughly in balance with the evaporation rate. Mixing in the lake is not efficient as evidenced by the measurement of faecal coliform levels around the drain (faecal coliforms are also discharged in paper mill effluent). The concentration of bacteria decreases rapidly with distance from the drain. Consequently, for the purpose of making some estimate of the residual chemical concentration in the lake water, a dilution factor of 1:5 will be assumed, which gives the PEC in the effluent stream and in Lake Bonney near to the drain discharge of approximately 0.01 mg/L.

The new chemical is highly toxic to fish (96 h LC50 = 2.2 mg/L for rainbow trout and 0.93 mg/L for fathead minnow), highly toxic to *daphnia* (48 h LC50 = 0.22 mg/L) and is very likely highly toxic to green algae. The PECs above indicate that even for the worst case PEC of 0.01 mg/L, the safety factor for environmental effects to *daphnia* is around 20. This safety factor would be further increased due to association of the chemical with colloidal organic matter (humic material) in the lake water.

Once the chemical has entered the Lake Bonney water, although only slow biodegradation is expected, some degradation through direct and indirect photolysis may be possible. However, it is expected that association with humic material would effectively remove the chemical through its incorporation into sediments. The chemical is not expected to bioaccumulate.

Provided the new chemical is used for the manufacture of tissue paper as described, it is not expected to be a hazard to the environment, although some localised impacts could be possible.

RECOMMENDATIONS

Regulatory controls

- The NOHSC Chemicals Standards Sub-committee should consider the following health hazard classification for the notified chemical:
 - R20/21/22 – Harmful by Inhalation, in Contact with Skin and if Swallowed;
 - R34 – Causes Burns;
 - R42/43 – May Cause Sensitisation by Inhalation and Skin Contact;
 - S24/25 – Avoid Contact with Skin and Eyes
- Use the following risk phrases for products/mixtures containing the notified chemical:
 - $\geq 25\%$: R20/21/22, R34, R42/43
 - $\geq 10\%$ - $< 25\%$: R34, R42/43
 - $\geq 5\%$ - $< 10\%$: R36/38, R42/43
 - $\geq 1\%$ - $< 5\%$: R42/43

Control Measures

Occupational Health and Safety

- Employers should implement the following engineering controls to minimise occupational exposure to the notified chemical as introduced:
 - Enclosure of manufacturing process as much as possible.
- Employers should implement the following safe work practices to minimise occupational exposure during handling of the notified chemical as introduced:
 - Avoid spillage and generation of aerosols.
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified chemical as introduced:
 - Impervious clothing and footwear
 - Impervious gloves
 - Chemical goggles or faceshield

Guidance in selection of personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

- A copy of the MSDS should be easily accessible to employees.

If products and mixtures containing the notified chemical are classified as hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Health Surveillance

- As the notified chemical is a skin and respiratory sensitiser, employers should carry out health surveillance for any worker who has been identified in the workplace risk assessment as having a significant risk of occupational asthma or contact (allergic) dermatitis.

Environment

- The following monitoring should be conducted to measure environmental release during use of the notified chemical:
 - It is recommended that the quarterly monitoring of the treatment plant effluent discharged into Lake Bonney be continued and NICNAS should be informed of any increase in toxicity.

Secondary Notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

(1) Under Subsection 64(1) of the Act:

- If quarterly monitoring of the treatment plant effluent discharged into Lake Bonney indicates any increase in the toxicity of the effluent after introduction of the new chemical, this information be immediately conveyed to the Director, NICNAS;

or

(2) Under Subsection 64(2) of the Act:

- if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.

6 PUBLICATION SUMMARY REPORT

4-(2-hydroxyethoxy)phenyl-(2-hydroxy-2-propyl)ketone (Irgacure 2959) Summary Report Reference No: NA/991

Ciba Specialty Chemicals Pty Ltd of 235 Settlement Rd Thomastown VIC 3074 has submitted a standard notification statement in support of their application for an assessment certificate for Irgacure 2959. The notified chemical is intended to be used as a photoinitiator in UV-curable lacquers, inks, and varnishes. 1 500 kg of the notified chemical will be imported per annum for each of the first five years.

ASSESSMENT OF PUBLIC, OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL EFFECTS

Hazard Assessment

Based on the toxicological data provided, the notified chemical would not be acutely toxic via the oral or dermal routes. It is not likely to be a skin sensitiser, genotoxic, or clastogenic. It is not likely to be an eye irritant but could be a slight skin irritant. Based on the results of a 28-day oral study in rats (NOAEL 1000 mg/kg bw/day- the top dose), organ or systemic effects are not expected. The particle size distribution of the notified chemical indicates it contains a high respirable fraction (84 % of particles are below 10 µm). The notified chemical would not be classified as a hazardous substance according to NOHSC *Approved Criteria for Classifying Hazardous Substances* in terms of the toxicological data provided.

Occupational Health and Safety

There is little potential for occupational exposure to the notified chemical during transport and storage.

The greatest exposure to the notified chemical is expected to occur during the formulation of the overprint lacquer, in particular while weighing and manually adding the 99.5 % notified chemical powder to the mixing vessel. Due to the high percentage of particles in the respirable range and the possibility of skin irritation, weighing and manually adding the 99.5 % notified chemical powder to the mixing vessel must take place in a well ventilated area. Blending process workers should wear overalls, PVC coated cotton gloves, protective goggles and respirators. In the event of inadequate ventilation, self-contained breathing apparatus (half face mask with cartridge) should be worn.

The engineering controls and personal protective equipment indicated by the notifier should control the exposure of washing operators, laboratory QC and R & D workers as well as printer workers using the overprint lacquer to the notified chemical.

Stringent engineering controls, such as a correctly constructed and maintained spray booth, and a high level of personal protective equipment, such as impermeable overalls and gloves and a full face mask with a separate air supply should provide adequate protection from the notified chemical during spray gun application of the powder coating.

The notified chemical becomes biologically unavailable for absorption once it is incorporated in the surface coating during UV-curing. The health risk for workers handling products coated with paint containing the notified polymer is considered to be negligible.

Employers should ensure that NOHSC exposure standard for a nuisance dust (10 mg/m³ TWA) is not exceeded in the workplace. Employers should also note that while NOHSC does not have an exposure standard for the respirable fraction of dust, the American Conference of Governmental Industrial Hygienists have developed an occupational exposure standard of 3 mg/m³ TWA for the respirable dust fraction.

Given the risk reduction measures indicated and that the notified chemical is unlikely to be hazardous, Irgacure 2959 is of low concern to human health and safety in the workplace.

Public Health

The public may be exposed to the notified chemical either as a pure powder or as a component of an ink lacquer following transport accidents involving the breakage of the containers in which they are carried. Such accidents are unlikely. Where they do occur, contact with the powder form is likely to be dermal and minimal and transient. Contact with spilled varnish containing the notified chemical may be hazardous because of the presence of other chemicals. Members of the public may also be exposed to the notified chemical as an environmental contaminant. This is also unlikely as any waste is chemically and physically reduced to inert material and disposed of as land-fill.

Public contact with the notified chemical is expected to be by means of contact with it as a component of cured varnish on packaging. However it will be present in the varnish at a low concentration and in a state inaccessible to human contact. The low likelihood of exposure to the notified chemical and the toxicological profile of the notified chemical suggest that the notified polymer will not pose a significant hazard to public health when used in the proposed manner.

Environmental Effects

The majority of the notified chemical will be incorporated in printed packaging material. However, prior to leaving the printers, the printed material is irradiated with UV light which promotes homolysis of the bond ether linkage in the notifier chemical which then initiates a free radical polymerisation process to form a high molecular weight, crosslinked compound. Therefore, once incorporated into the printed material, the notified chemical is consumed and poses little risk to the environment.

The ecotoxicity data indicate the notified chemical is moderately toxic to algae, but appears to be practically non-toxic to fish and daphnia. The notified chemical is not readily biodegradable, however, in water the notified chemical is expected to degrade photochemically.

The wastes containing the notified chemical generated during the formulation process will be disposed of in landfill. The notified chemical has a log K_{OC} of 1.05 and a relatively high water solubility. Therefore it will be mobile in both the terrestrial and aquatic compartments. Analysis of the notified chemical's physico-chemical properties using the Mackay Level 1 Fugacity Model indicates that 99.34% of releases will remain in the aquatic compartment.

Liquid wastes containing the notified chemical will be incinerated by licensed waste disposal contractors and are expected to produce water vapour and oxides of carbon.

The notified chemical's high water solubility and log P value indicate it has a low bioaccumulation potential.

RECOMMENDATIONS

Control Measures

Occupational Health and Safety

- Employers should implement the following engineering controls to minimise occupational exposure to the notified chemical as introduced:
 - Ensure adequate ventilation and local exhaust
- Employers should implement the following safe work practices to minimise occupational exposure during handling of the notified chemical as introduced and in the powder coating product:
 - NOHSC exposure standard for nuisance dust should not be exceeded in the workplace
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified chemical as introduced and in the powder coating product:
 - Overalls, PVC coated cotton gloves, protective goggles and respirators should be worn; where engineering controls do not reduce particulate exposure to safe levels a self-contained breathing apparatus (half face mask with cartridge) should be worn

Guidance in selection of personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

- A copy of the MSDS should be easily accessible to employees.

If products and mixtures containing the notified chemical are classified as hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Secondary Notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

Under Section 64(2) of the Act:

- if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.

No additional secondary notification conditions are stipulated.

7 PUBLICATION SUMMARY REPORT

Polymer in RW 3210 Summary Report Reference No: NA/992

BASF Akzo Nobel Automotive OEM Coatings Pty Ltd (ACN 092 127 501) and Akzo Nobel Pty Ltd (ACN 000 119 424) of 51 McIntyre Road Sunshine VIC 3020 have submitted a limited notification statement in support of their application for an assessment certificate for Polymer in RW 3210. The notified polymer is intended to be used as a component of an automotive primer paint. Less than 1500 tonnes of the notified polymer will be manufactured per annum for each of the first five years.

ASSESSMENT OF PUBLIC, OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL EFFECTS

Hazard Assessment

No toxicological data have been provided for the notified polymer. The notified polymer has a high NAMW, and absorption across biological membranes and resultant systemic toxicity would be restricted. It contains a low proportion of reactive functional group and a low content of residual monomers. Therefore, the notified polymer is unlikely to be a hazardous substance according to the NOHSC *Approved Criteria for Classifying Hazardous Substances*.

The Material Safety Data Sheet (MSDS) for RW 3210 emulsion indicates that the emulsion may be slightly irritating to skin, eyes and respiratory tract. The reported health effects are likely to relate to other components of the emulsion, such as solvents, rather than the notified polymer.

Occupational Health and Safety

The notified polymer is manufactured in Australia for formulation into an automotive primer. The intermediate and final aqueous emulsions are formulated in closed vessels. The intermediate polymer emulsion is transferred in enclosed lines to a closed blend tank where additional components are added to form the final paint additive emulsion. After sampling for quality analysis, the emulsion is then stored prior to transport in bulk containers to automobile manufacturing facilities. Incidental exposure to the notified polymer may occur during transfer of RW 3210 to storage tanks or mixing vessels.

The notified polymer is never isolated and therefore occupational exposure to the polymer for process, maintenance and laboratory workers would only occur from contact with the aqueous polymer emulsions (containing <30% notified polymer). Contact may result in slight skin and eye irritation. Given the engineering controls, personal protective equipment available to these workers, and the low probability of exposure and likely low systemic toxicity of the notified polymer, the overall health risk for workers involved in polymer manufacture and formulation is assessed as low.

The notified polymer is transported in bulk containers for end-use in the form of an emulsion to be added to automotive primer paint. The potential for exposure to the notified polymer during storage and transport would be considered low and would only be envisaged following

accidental puncture of the bulk containers. Therefore, the health risk for transport workers would be assessed as low.

The paint additive containing the notified polymer will be mixed in a tank which will be used to coat automotive bodies by dipping. At this point, exposure to diluted notified polymer (<10%) would only occur as a result of contact with the final paint. As this process is automated, the possibility of exposure is low and would be envisaged only following accidental spillage during routine operations, maintenance or laboratory analysis.

Following curing of the paint, the polymer will be cross-linked with other paint components to form a high molecular weight stable film. In this form, the polymer is essentially unavailable for absorption and thus the health risk to workers from the notified polymer after paint curing would be negligible.

Given the controls in place and the likely low toxicity of the notified polymer, the health risk to workers involved in end use of the notified polymer is assessed as low.

Public Health

The polymer emulsion and the final paint additive will not be sold to the public and the application will be restricted to car manufacturers. The public may come in contact with the notified polymer only after it has been applied to and becomes an integral part of a hard film covered by more layers of paint on motor vehicles. Therefore, the risk to the public induced by the notified polymer is considered to be low.

Environmental Effects

The majority of the notified polymer will be combined with other coating components to form a very high molecular weight and stable coating. Therefore, once incorporated into the coating formulation, the notified polymer is expected to be immobile in the environment. As the coating degrades over time, any fragments, chips and flakes of the coating will be of little concern as they are expected to be inert. The metal panels and car bodies coated with the polymer are likely to be either recycled for steel reclamation or be placed into landfill at the end of their useful life. During recycling, the polymer would be destroyed in furnaces and converted to water vapour and oxides of carbon and nitrogen.

The notified polymer in waste from spills and equipment cleaning will be passed through interceptor pits and will be treated on-site by flocculation. The resulting solid containing the notified polymer will be dried followed by disposal into landfill while the water will be tested prior to release into the sewer. Wastewater resulting from the cleaning of bulk transportation tanks will be collected and used in the formulation of new polymer batches.

As a consequence of its hydrophobic nature, the notified polymer is expected to associate with the soil matrix and sediments. The notified polymer is not expected to cross biological membranes due to its high molecular weight and is therefore not expected to bioaccumulate.

RECOMMENDATIONS

Control Measures

Occupational Health and Safety

No specific precautions are required for the notified polymer itself, however, due to the presence of hazardous components in the aqueous emulsions and final primer paint:

- Employers should implement the following engineering controls to minimise occupational exposure:
 - Enclosed fixed transfer lines for transfer operations
 - Closed reactor, emulsification tank and blend tank
 - Exhaust ventilation during manufacture, QC analysis, storage and paint application;
- Employers should implement the following safe work practices to minimise occupational exposure during handling of the polymer emulsions and the final primer paint:
 - Prevent splashes and spills;
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the polymer emulsion and the final primer paint:
 - chemical goggles or safety glasses with side shields
 - chemical resistant industrial clothing
 - PVC or rubber gloves
 - protective footwear;

Guidance in selection of personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

- A copy of the MSDS should be easily accessible to employees.

If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Secondary Notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

Under Subsection 64(2) of the Act:

- if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.

No additional secondary notification conditions are stipulated.

8 PUBLICATION SUMMARY REPORT

NT-18 Summary Report Reference No: NA/993

HP Australia Limited of 31-41 Joseph Street, Blackburn VIC 3130 (ABN 74 004 394 763) has submitted a standard notification statement in support of their application for an assessment certificate for NT-18. The notified chemical is intended to be used as an ingredient of a toner for electrophoto-copying machine or electrophoto-graphic printer and will be contained in toner at less than 1%.

Annual imports of the notified chemical over the next five years are anticipated to be less than 20 tonnes.

ASSESSMENT OF PUBLIC, OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL EFFECTS

Hazard Assessment

Based on the toxicological data provided, the notified chemical would not be acutely toxic via the oral and dermal route. It is not likely to be a skin sensitiser or genotoxic. It is not likely to be a skin irritant but could be a slight eye irritant. The no-observed-adverse effect level (NOAEL) established in a 28-day repeat dose oral study in rats was 1000 mg/kg bw/day (highest dose tested with no treatment-related effects).

The notified chemical is not classified as a hazardous substance according to the National Occupational Health and Safety Commission (NOHSC) *Approved Criteria for Classifying Hazardous Substances*.

Data on the particle size of the notified chemical show that a large proportion of the particles are within the respirable range (24% by weight < 10 µm). Also, the toner is formulated as a powder with average particle size from 5 µm to 10 µm and distribution from 1 µm to 30 µm. The toner is considered a nuisance dust and employers are responsible for maintaining atmospheric levels of toner dust below the NOHSC exposure standard of 10 TWA mg/m³. Australia does not have a national exposure standard for respirable dust, however, the American Conference of Governmental Industrial Hygienists TLV is 3 TWA mg/m³.

The material safety data sheet (MSDS) for the toner states that it would not be classified as a hazardous substance according to the *Approved Criteria for Classifying Hazardous Substances*.

Occupational Health and Safety

Exposure to toner containing the notified chemical can occur during machine operation, during clearing paper feed problems and machine maintenance. Transport and storage of the toner bottles and cartridges is unlikely to result in worker exposure except in the event of accidental spillage.

From the repeat dose toxicity studies, the NOAEL of 1000 mg/kg bw/day (highest dose tested with no treatment related effects) was established for NT-18. Assuming 100% dermal

absorption, a 70 kg worker would need to be dermally exposed to 70 g NT-18/day or >7 kg toner/day to reach the NOAEL. This is unlikely given the routine conditions of use. The calculations described do not include a safety factor.

The main route of exposure is dermal. While ocular exposure to toner dust may occur, the risk of eye irritation in workers involved in transport, storage, use and disposal of the notified chemical in this application is low.

Printing staff performing additions of toner and replacement of a used toner container (cartridge or bottle) are expected to be exposed infrequently to the notified chemical as the toner container is sealed and loaded directly into a printing machine. Upon application to the paper, the toner is fused to the surface and release is unlikely to occur. Therefore, the risk of adverse health effects to printing personnel is low and no personal protective equipment is required. Nevertheless, due to the small toner particle size, any generation of dust should be avoided.

Service personnel may be exposed to the notified chemical when cleaning printer/copier equipment and replacing copier developer. However, as the notified chemical is not likely to be hazardous and given its low concentration in the toner (<1%), the risk of adverse health effects is low. Cotton or disposable gloves may be worn to prevent skin irritation due to frequent exposure to toners, and workers should avoid any generation of dust when handling the toner.

Spilt residues should be swept up manually or using a dust explosion-proof vacuum cleaner and placed within a waste container.

Workers handling printed paper are not at risk of adverse health effects because the polymer is fixed to the paper and not available for exposure or dermal uptake.

Given these considerations, the chemical will not pose a significant health hazard in the occupational environment.

In the event that the notified chemical will be handled as a raw ingredient at high concentrations, workers should be protected from skin contamination because it has staining properties.

Public Health

There is potential for public exposure to the notified chemical from spillage of the toner during exchange of cartridges in printers and photocopiers. However, given the low toxicity profile of NT-18 and the very low proportion of NT-18 in the toner, the potential for dermal and inhalational exposure of the public to the notified chemical during use of the toner cartridges is considered to be very low.

Environmental Effects

Although the notified chemical is moderately toxic to green algae it does not exhibit acute toxicity to either fish or *daphnia* up to the limit of its water solubility, but is slightly toxic to *daphnia* under conditions of chronic exposure. However, the compound is not expected to be released to the water compartment except at very low concentrations, and this in a very diffuse manner. Consequently, use of the compound as indicated as a component of toners for printers and photocopying is not likely to constitute a hazard to the aquatic compartment.

In the event of accidental spillage or release of the toner, the clean up operation would probably entail disposal to landfill. The long term fate of the majority of the notified chemical is expected to be either through paper recycling, landfill disposal or incineration of waste paper. In the first two cases it is anticipated that the chemical would be destroyed either by a vigorous chemical environment (paper recycling) or through slow biological and abiotic processes. Even in the absence of substantial degradation, the relatively low usage rate and diffuse nature of disposal patterns indicates very slow release into the wider environment, and this at low concentrations. Incineration of the chemical would lead to its total destruction with production of water and oxides of carbon and nitrogen while the sodium and iron components would report to ash.

However, the notified chemical is not expected to have affinity for soil and if released to soil or sediments will be mobile in these media and is expected to be slowly leached into the water compartment. The chemical is not expected to have potential for bioaccumulation.

The notified chemical is not considered to be a hazard to the environment when used as a component of printer and photocopying toner as indicated.

RECOMMENDATIONS

To minimise occupational exposure to NT-18 the following guidelines and precautions should be observed:

- In case manufacturing of the notified chemical or toner is performed in Australia, protective eyewear, clothing and gloves should be worn when handling the notified chemical;
- Generation of dust clouds when handling the toner should be avoided;
- Service operators should wear cotton or disposable gloves when handling the toner (ie when removing spent cartridges or bottles containing the notified chemical or when servicing printers or photocopiers);
- Spillage of the notified chemical should be avoided. Spillage should be cleaned up promptly with absorbents which should be put into containers for disposal;
- A copy of the appropriate MSDS should be easily accessible to employees.

If products containing the notified chemical are hazardous to health in accordance with the *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control

procedures consistent with State and Territory hazardous Substances regulations must be in operation.

Secondary Notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

(1) Under Sub-section 64(1) of the Act:

If the conditions of use are varied, then greater exposure of the public may occur. In such circumstances, further information may be required to assess the hazards to public health.

Or

(2) Under Sub-section 64(2) of the Act:

- if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.

9 PUBLICATION SUMMARY REPORT

Polymer in RW0978 Summary Report Reference No: NA/995

Akzo Nobel Pty Ltd and BASF Akzo Nobel Automotive OEM Coatings Pty Ltd both of 51 McIntyre rd Sunshine VIC 3020 have submitted a limited notification statement in support of their application for an assessment certificate for Polymer in RW0978. The notified polymer is intended to be used as a component of a surface coating. Less than 20 tonnes of the notified polymer will be imported per annum for each of the first five years.

ASSESSMENT OF PUBLIC, OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL EFFECTS

Hazard Assessment

No toxicological data have been provided for the notified polymer. However, given its high molecular weight, low proportion of reactive functional groups (amine groups) and low concentration of residual monomers, the notified polymer is unlikely to be a hazardous substance in accordance with the NOHSC Approved Criteria for Classifying Hazardous Substances. The systemic toxicity of the notified polymer is likely to be low, given its high molecular weight and consequent low bioavailability.

The Material Safety Data Sheet (MSDS) for RW0978 emulsion indicates that the emulsion may be irritating to skin and eyes and may cause kidney and liver damage if swallowed; these effects are based on the effects of organic solvents present in RW0978.

Occupational Health and Safety

The notified polymer is manufactured and emulsified in closed vessels. The resulting polymer emulsion is then transferred in enclosed lines to a closed blend tank where additional components are added to form the final paint additive emulsion. After sampling for quality analysis, the aqueous emulsion is then stored prior to transport in bulk containers.

The notified polymer is never isolated and therefore exposure to the polymer for process, maintenance and laboratory workers would only occur from contact with diluted polymer emulsion or final paint additive containing <30% notified polymer. Contact may result in slight skin and eye irritation. However, given the engineering controls and personal protective equipment worn by these workers, the low probability of exposure and likely low systemic toxicity of the notified polymer renders the overall health risk for workers involved in polymer manufacture low.

The notified polymer is transported in bulk containers for end-use in the form of an emulsion to be added to automotive primer paint. The potential for exposure to the notified polymer during storage and transport would be considered low and would only be envisaged following accidental puncture of the bulk containers. Therefore the health risk for transport workers would be assessed as low.

The paint additive containing the notified polymer will be mixed in an electrocoat tank which will be used to coat automotive bodies and parts by dipping. At this point, exposure to diluted

notified polymer (<10%) would only occur as a result of contact with the final paint. As this process is automated, the possibility of exposure is low and would be envisaged only following accidental spillage during routine operations, maintenance or laboratory analysis. Given the likely low toxicity of the notified polymer, the health risk to these workers involved in end use would be assessed as low.

Following curing of the paint, the polymer will be cross-linked with other paint components to form a high molecular weight stable film. In this form, the polymer is essentially unavailable for absorption and thus the health risk to workers from the notified polymer after paint curing would be negligible.

Public Health

The very low likelihood of contact with the notified polymer and the low toxicity of the notified polymer suggest that the notified polymer will not pose a significant hazard to public health when used in the proposed manner.

Environmental Effects

The majority of the notified polymer will be combined with other coating components to form a very high molecular weight and stable coating. Once incorporated into the coating formulation, the notified polymer is expected to be immobile in the environment. As the coating degrades over time, any fragments, chips and flakes of the coating will be of little concern as they are expected to be inert. The metal panels and car bodies coated with the polymer are likely to be either recycled for steel reclamation or be placed into landfill at the end of their useful life. When recycled the polymer would be destroyed in furnaces and converted to water vapour and oxides of carbon and nitrogen.

The notified polymer in waste from spills and equipment cleaning will be passed through interceptor pits and will be treated on-site by flocculation. The resulting solid containing the notified polymer will be dried followed by disposal into landfill while the water will be tested prior to release into the sewer. Wastewater resulting from the cleaning of bulk transportation tanks will be collected and used in the formulation of new polymer batches.

As a consequence of its hydrophobic nature, the notified polymer is expected to associate with the soil matrix and sediments and not be mobile but slowly degrade. The notified polymer is not expected to cross biological membranes due to its high molecular weight and is therefore not expected to bioaccumulate.

RECOMMENDATIONS

Control Measures

Occupational Health and Safety

No specific precautions are required to control exposure to the notified polymer. However, the following precautions should be taken when handling the aqueous emulsions and paints containing the notified polymer:

- Good ventilation;
- Protective eyewear, impermeable gloves and chemical resistant industrial clothing and footwear.

Guidance in selection of personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

- A copy of the MSDS should be easily accessible to employees.

If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Secondary Notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

Under Subsection 64(2) of the Act:

- if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.

No additional secondary notification conditions are stipulated.

10 PUBLICATION SUMMARY REPORT

Polymer in Collacral LR 8990 Summary Report Reference No: PLC/217

BASF Australia Ltd (ABN 62 008 437 867) of 500 Princes Highway Noble Park VIC 3174 has submitted a synthetic polymer of low concern (PLC) notification statement in support of their application for an assessment certificate for Polymer in Collacral LR 8990. The notified polymer is intended to be used as a thickener in water based architectural paint formulations. 10 - 100 tonnes of the notified polymer will be imported per annum for each of the first five years.

ASSESSMENT OF PUBLIC, OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL EFFECTS

Hazard Assessment

The notified polymer fulfils the criteria for a synthetic polymer of low concern and can be considered not to be a health hazard.

The technical bulletin for the 40% aqueous solution of the polymer states that prolonged exposure may cause irritation of the skin and mucous membranes.

Occupational Health and Safety

Transport and storage of the containers of notified polymer should result in minimal worker exposure and consequent health effects except in the event of accidental container rupture.

During the paint manufacture processes, the main exposure route for the notified polymer will be dermal. The paints will be viscous, and ready formation of aerosols is not expected. There is a risk of slight irritation (dermal, ocular) should spillage occur as indicated on the MSDS for the imported polymer solution.

Occupational exposure during the sale and professional use of architectural paints is likely to be widespread and often under poorly controlled conditions. Dermal contact during handling and application of the paints is likely. The occupational health and safety risk associated with dermal contact with the notified polymer in the form of uncured paints will be low, due to the low toxicological hazard of the polymer and the low concentration (< 2 %) in the finished paints.

Conclusion

The notified polymer is of low concern to human health and safety and no specific risk reduction measures are necessary.

Public Health

While dermal and possibly eye contact with the notified polymer may occur during application of the paints containing the polymer by the public, the notified polymer is not

expected to pose a significant hazard to public health when used in the proposed manner based on its expected low toxicity.

In dried paint films, the notified polymer will be encapsulated in an inert, very high molecular weight matrix, which will render it biologically unavailable, and consequently public exposure to the notified polymer from dried paint films is considered to be low.

Environmental Effects

The majority of the notified polymer will be bound with other paint components in a high molecular weight and stable paint film. Therefore, once incorporated into the paint formulation, the notified polymer is expected to be immobile and pose little risk to the environment.

The notified polymer in waste from spills and equipment cleaning will be collected by licensed waste disposal contractors and will either be disposed of in landfill or incinerated. Small spills will be washed into the notifier's on-site effluent treatment plant where wastes are treated with flocculants to remove solids prior to discharge to sewer. Therefore, release of the notified polymer is expected to be low. Solid wastes from this process will be disposed in landfill.

Equipment used to apply the paint will be washed in water and the notified polymer may be disposed into the sewer or poured onto the ground. When dried paint containing the notified polymer is disposed of in landfill or onto the ground, it is expected to become associated with the soil matrix. Incineration of wastes containing the notified polymer will produce water vapour and oxides of carbon and nitrogen. When released into the sewer, the notified polymer's high water solubility suggests that it will be predominantly remain in the aquatic compartment, where it will become diluted and dispersed, eventually associating with sediments.

In a worst case based on maximum annual releases of 4.5 tonnes per annum, all of which is released to sewer, assuming that none is removed during sewage treatment processes, and assuming a national population of 19,000,000 and that each person contributes an average 150 L/day to overall sewage flows, the predicted concentration in sewage effluent on a nationwide basis is estimated as 4.3 microgram/L. When released to receiving waters the concentration is generally understood to be reduced by a further factor of at least 10, and so the Predicted Environmental Concentration (PEC) is around 0.43 microgram/L. Due to the water solubility of the notified polymer most would be expected to remain in the water column. Some will be treated with flocculents and removed prior to release to receiving waters, further reducing this concentration.

The notified polymer is not expected to cross biological membranes due to its high molecular weight is therefore not expected to bioaccumulate.

RECOMMENDATIONS

Control Measures

No specific precautions are required to control exposure to the notified polymer. However, in the interests of good occupational health and safety, the following guidelines and precautions should be observed:

Occupational Health and Safety

- Spillage of the notified polymer should be avoided. Spillage should be cleaned up promptly with absorbents which should then be put into containers for disposal;
- A copy of the MSDS should be easily accessible to employees.

If products containing the notified chemical are hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control procedures consistent with State and Territory hazardous substances regulations must be in operation.

Secondary Notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

- (1) Under Subsection 64(1) of the Act; if
 - the notified polymer is introduced in a chemical form that does not meet the PLC criteria.

or

- (2) Under Subsection 64(2) of the Act:
 - if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.

11 PUBLICATION SUMMARY REPORT

Infineum C9510 Summary Report Reference No: PLC/241

Infineum Australia Pty Ltd of 2/6 Riverside Quay Southbank VIC 3006 (ABN 24084581 863) has submitted a synthetic polymer of low concern (PLC) notification statement in support of their application for an assessment certificate for Infineum C9510. The notified polymer is intended to be used as a lubricant additive. Fifty tonnes of the notified chemical will be imported per annum for each of the first five years.

ASSESSMENT OF PUBLIC, OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL EFFECTS

Hazard Assessment

The notified polymer fulfils the criteria for a synthetic polymer of low concern and can be considered not to be a health hazard. It will be present in oil additive packages at a concentration of 2% but the formulation is yet to be finalised.

Occupational Health and Safety

During import and transport of the notified polymer, worker exposure is unlikely except in the event of a spill. Exposure after a spill would be controlled by use of the recommended practices for spillage clean up outlined in the MSDS supplied by the notifier.

During reformulation into a finished lubricant and repackaging of the lubricant into consumer sized containers, workers will not experience adverse health effects from their low exposure to the notified polymer as little of the lubricant additive package will be spilt during transfer, the notified polymer is at a low concentration and it is not a health hazard. The MSDS recommends the use of PVC or nitrile gloves with inner gloves if thermal protection is required. If handling hot material workers are advised to wear a face shield and don chemical resistant apron, jacket and rubber boots.

Customers of the finished lubricant and their employees will receive negligible exposure to the notified polymer because of its low concentration in the final lubricant. In addition, gear oil is filled automatically into new cars. Therefore, the risk of adverse health effects for these workers arising from exposure to the notified polymer is negligible.

Used gear oil or crankcase oil for disposal is expected to be collected by a licensed contractor and sent for recycling or incineration. Again the low concentration of the notified polymer in the final lubricant together with its expected low hazard should prevent any adverse health effects to workers.

Conclusion

The notified polymer is of low concern to human health and safety and no specific risk reduction measures are necessary.

Public Health

The imported lubricating oil additive package will not be sold to the public. There is public accessibility to the notified polymer after its incorporation into engine oil. Public exposure to the notified polymer occurs when oil changes of the car are required. However, taking into account its physical and chemical properties, its expected low toxicity, and the low concentrations in end use lubricating oil, the exposure is unlikely to cause significant public health concerns.

Environmental Effects

Losses of the notified polymer to the environment during transport, blending and repackaging are expected to be small, while losses through improper disposal during lubricant oil change may be higher. Exact figures arising from improper disposal of used lubricants are difficult to estimate because of the uncertainty surrounding the fate of 40% of used oils generated in Australia. However, the notifier anticipates that over 90% of the imported volume of polymer, generated as used oil, would be disposed of properly, either by incineration and recycling, and less than 10% could be released into the soil environment or into stormwater drains through improper use or disposal.

The bulk of recycled polymer will be incinerated in fuel oils. Incineration will result in the production of water vapour and oxides of carbon. Disposal into the soil environment will result in adsorption of the polymer onto soil particles, while release into waterways would result in the polymer floating on the surface and eventually becoming associated with sludge and sediments. The polymer is not readily biodegradable, but in soils, it is expected to slowly degrade through microbial and abiotic processes.

The environmental hazard from the notified polymer is considered to be small given the anticipated nationwide use; provided that the material is used as indicated and disposal of used oil takes place via the proper routes such as recycling and incineration.

RECOMMENDATIONS

Control Measures

No specific precautions are required to control exposure to the notified polymer. However, in the interests of good occupational health and safety, the following guidelines and precautions should be observed:

Occupational Health and Safety

- Employers should implement the following engineering controls to minimise occupational exposure to the notified polymer during formulation:
 - General and local exhaust ventilation.
- Employers should implement the following safe work practices to minimise occupational exposure during handling of the notified polymer as introduced:
 - Spillage should be avoided; spillage should be cleaned up using appropriate absorbents and placed into container for disposal.

- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified polymer:
 - Nitrile or neoprene gloves.
 - Protective clothing which protects the body, arms and legs
 - Safety glasses

Guidance in selection of personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

- A copy of the MSDS should be easily accessible to employees.
- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Disposal

- The notified polymer should be disposed of by incineration.

Secondary Notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

- (1) Under Section 64(1) of the Act; if
- the notified polymer is introduced in a chemical form that does not meet the PLC criteria.

or

- (2) Under Section 64(2) of the Act:
- if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.

12 PUBLICATION SUMMARY REPORT

Urethane Polymer Summary Report Reference No: PLC/261

3M Australia Pty Ltd of 2-74 Dunheved Circuit, St Marys NSW 1760 (ABN 90 000 100 096) has submitted a synthetic polymer of low concern (PLC) notification statement in support of their application for an assessment certificate for Urethane Polymer. The notified polymer will be used as a component of a fabric/fibre stain protector. The stain protector will be used predominantly on carpets and rugs and applied as a foaming spray. The notified polymer will be imported 50 kg/year for the first five years.

ASSESSMENT OF PUBLIC, OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL EFFECTS

Hazard Assessment

No toxicological information has been provided for the notified polymer. However, due to its high molecular weight and presence of only low concern reactive functional groups, it is unlikely to be a hazardous substance in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*. The notified polymer meets the criteria for a Polymer of Low Concern and thus is unlikely to represent a health hazard.

Occupational Health and Safety

Exposure to the notified polymer is not expected during import and handling of pressurised cans containing 1-5% notified polymer. Cans are not opened prior to end-use and so occupational exposure of import/storage and relabelling plant workers to the polymer would only be envisaged in the case of accidental rupture of containers or inadvertent activation of the release valve. These are unlikely given the low concentration of notified polymer in the product (1-5%), the strength of the containers and covering of the release valve by a cap that would require removal only during end use.

If any of the above scenarios occurs, dermal, ocular and inhalation exposure may be envisaged. Based on the MSDS for the product (an aqueous suspension of notified polymer), if skin, eye or inhalation exposure occurs, local irritation may result. The MSDS further warns that intentional overexposure can be harmful or fatal. It is likely that this and cautions regarding central nervous system depression following overexposure are likely to be due to the solvent propellant (isobutane) and not the notified polymer.

Given the engineering controls, low possibility of exposure and the low health hazard associated with the notified polymer, the health risk for workers handling the notified polymer from import, relabelling through to retail would be assessed as low.

Public Health

The two most likely avenues for exposure are dermal contact and inhalation. After treatment, the product remains on the treated surface and may be slightly irritant. However, once the product has dried there is likely to be limited exposure to the public as the product is intended to remain in contact with the treated material. The product is potentially harmful if

intentionally inhaled in concentration, however, it is likely that this is due to the solvent propellant and not the notified polymer. The notifier expects very little mist produced from proper use. The risk to public health is therefore not likely to be significant.

It is noted that draft labels for the product containing the notified polymer advise that contact with the wet product should be avoided.

Environmental Effects

The majority of the notified polymer will be applied to carpet and rugs as a foaming aerosol which when dry remains on the treated article with little overspray expected. Therefore, most will be released into the environment through disposal of carpet and rugs in landfill. The notifier also indicates that overtime the notified polymer may, through mechanical action, slowly wear off the carpet surface and be vacuumed away. However, this is expected to be minor. The notified polymer in these products will slowly degrade through abiotic and biotic processes to oxides of nitrogen and carbon. Incineration of the notified polymer will produce oxides of nitrogen and carbon and water vapour.

Empty import cans and any residual notified polymer they may contain will be disposed of in landfill. These residues are not expected to escape from the can but if they did the notified polymer is expected to be immobile due to its low water solubility and will become part of the soil matrix.

The polymer is not expected to cross biological membranes due to its high molecular weight. Therefore the notified substance is not expected to bioaccumulate.

RECOMMENDATIONS

Control Measures

Occupational Health and Safety

- No special precautions are required for the notified polymer. However, in the interests of good occupational hygiene practice, employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified polymer in the aerosol product.
 - Impervious coveralls and footwear
 - Impervious gloves
 - Safety glasses
- A copy of the MSDS should be easily accessible to employees.
- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Secondary Notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

- (1) Under subsection 64(1) of the Act; if
 - the notified polymer is introduced in a chemical form that does not meet the PLC criteria.

or

- (2) Under subsection 64(2) of the Act:
 - if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.

13 PUBLICATION SUMMARY REPORT

RC 25433
Summary Report
Reference No: PLC/271

DuPont (Australia) Ltd of 49-59 Newton Road Wetherill Park NSW 2164 (ACN 000 716 469) has submitted a synthetic polymer of low concern (PLC) notification statement in support of their application for an assessment certificate for RC 25433. The notified polymer is intended to be used as a primer for automotives. Less than 100 kg of the notified chemical will be imported for the first year, increasing to <1tonne per annum for the next four years.

ASSESSMENT OF PUBLIC, OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL EFFECTS

Hazard Assessment

No toxicological information was provided for the notified polymer. However, the notified polymer has a high molecular weight and is unlikely to penetrate biological membranes. It contains no reactive functional groups and residual monomers are present below the relevant concentration cut offs for classification of the notified polymer as a hazardous substance. The polymer meets the PLC criteria and is unlikely to be a hazardous substance according to the NOHSC *Approved Criteria for Classifying Hazardous Substances*.

The notified polymer will be imported as a component of an automotive epoxy primer mixed in a number of solvents. The MSDS for the epoxy primer containing <10% notified polymer states that it may cause irritation to the eyes, skin, nose and throat, and gastrointestinal distress when swallowed. Inhaling the solvent vapours may cause central nervous system depression, headache, dizziness, nausea, staggering gait, confusion and unconsciousness. Prolonged overexposure to solvents has been reported to be associated with permanent brain and central nervous system damage.

The notifier classified the epoxy primer as a non-hazardous substance according to the NOHSC *Approved Criteria for Classifying Hazardous Substances*, since the solvents listed on the NOHSC *List of Designated Hazardous Substances* are present at concentrations below the relevant cut off levels for health hazard classification. The appropriate NOHSC exposure standards for the solvents are also listed in the MSDS.

The epoxy primer is classed as a dangerous good, Class 3, flammable liquid, due to the presence of solvents.

Occupational Health and Safety

The greatest exposure to the notified polymer is during paint make-up and use of the epoxy primer. Paint make-up should take place in a well-ventilated area.

The final paint mix including the epoxy primer contains a wide variety of solvent and other ingredients, which are likely to introduce human health hazards. The spraying procedure also produces a dense aerosol which could adversely affect human health even in the absence of additional hazardous components. It is also probable that professionals involved in the spray painting industry will use a number of different paint formulations.

The epoxy primer and the final paint mix containing the notified polymer are flammable due to their solvent content. Precautions must be taken to avoid sources of ignition, e.g. use of earthing leads. Operators should wear antistatic overalls and footwear.

For these reasons, the notified polymer must be assessed for the contribution it makes to the hazards associated with spray application of the paint. The spray application requires the use of stringent engineering controls, such as a correctly constructed and maintained spray booth, and of a high level of personal protective equipment, such as impermeable overalls and gloves and a full-face shield and respirator. The use of the paint containing the notified polymer should be in accordance with the NOHSC *National Guidance Material for Spray Painting*. The level of protection from exposure afforded by the standard protective measures will provide adequate protection from the notified polymer, which is likely to be less intrinsically toxic than most of the solvents and pigments in the epoxy primer. The low toxicological impact and the control measures in place render the health risk from the notified polymer for the workers as low.

Similar considerations apply in the cleaning of spray equipment and disposal of the polymer. The precautions used for the additional materials should be adequate for protection from the notified polymer. In addition, much of the polymer will be crosslinked and hardened, and therefore immobile, by the time of disposal.

Once the applied final paint mix has hardened, the polymer will not be separately available for exposure or absorption.

There is no occupational exposure expected for transport and storage workers except in case of an accident. The health risk for these workers is expected to be negligible under normal conditions.

The notified polymer itself is of low hazard to human health and safety. Apart from the controls already in place to prevent exposure to other paint components and to the notified polymer in particulate form during spraying, no additional controls are required.

There are NOHSC exposure standards for the solvents identified as ingredients in the imported epoxy primer containing the notified polymer. The employer is responsible for ensuring that these exposure standards, and exposure standards pertaining to other final paint mix additives, are not exceeded in the workplace.

Public Health

The epoxy primer containing the notified polymer will be used by professional commercial spray-painters consequently, public exposure is likely to be negligible, except in the event of an accidental spill during transport. Automobiles painted with the epoxy primer system will be heat cured, such that the polymer will react with other components in the paint formulation to form an inert, very high molecular weight paint film. This coating will be over-coated with top coats, which will themselves undergo a similar curing process. Therefore, the risk to the public from exposure to the notified polymer through all phases of its life cycle is considered to be low.

Environmental Effects

The majority of the notified polymer will be crosslinked with other paint components to form a very high molecular weight and stable paint film. Therefore, once incorporated into the paint formulation, the notified polymer is expected to be immobile and pose little risk to the environment.

The notified polymer in waste from spills and equipment cleaning will be collected by licensed waste disposal contractors and treated by a distillation process whereby the solvent is reclaimed and the remaining solid containing the notified polymer will be disposed of in landfill or combined with asphalt and used as a road base tackifier. The notified polymer in overspray will also be disposed of in landfill.

The notified polymer is not expected to be water-soluble and therefore will not be mobile in either the terrestrial or aquatic compartments. As a consequence of its low water solubility, the notified polymer is expected to eventually associate with the soil matrix and sediments. Due to its high molecular weight and low water solubility the polymer is not expected to bioaccumulate.

RECOMMENDATIONS

Regulatory controls

- The epoxy primer containing the notified polymer should be classified as follows under the ADG Code:
 - Class 3 (Flammable Liquid) and packaging group II
- Suppliers should label the epoxy primer containing the notified polymer as a Class [3] dangerous good with the signal word [Flammable].

Control Measures

Occupational Health and Safety

- Employers should implement the following engineering controls to minimise occupational exposure to the notified polymer in spray paint products:
 - Exhaust ventilation during paint make-up and cleaning of equipment
 - Automated spray painting
 - Enclosed spray painting booth with exhaust or filter system.
- Employers should implement the following safe work practices to minimise occupational exposure during handling of the notified polymer in spray paint products:
 - Use of the paint containing the notified polymer should be in accordance with the NOHSC *National Guidance Material for Spray Painting*
 - Employers should ensure that NOHSC exposure standards for all of the components of the final paint mix are not exceeded in the workplace

- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified polymer in spray paint products:
 - Chemical resistant gloves
 - Overalls or antistatic overalls during spray painting
 - Footwear or antistatic footwear during spray painting
 - Eye protection or full-face shield during spray painting
 - Air purifying respirator during spray painting

Guidance in selection of personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

- A copy of the MSDS should be easily accessible to employees.
- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Secondary Notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

- (1) Under Subsection 64(1) of the Act; if
 - the notified polymer is introduced in a chemical form that does not meet the PLC criteria.
- or
- (2) Under Subsection 64(2) of the Act:
 - if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.

14 PUBLICATION SUMMARY REPORT

SV93 Summary Report Reference No: PLC/274

MBT (Australia) Pty Ltd of 11 Stanton Rd Seven Hills NSW 2147 (ABN 46 000 450 288) has submitted a synthetic polymer of low concern (PLC) notification statement in support of their application for an assessment certificate for SV93. The notified polymer is intended to be used as a component of an additive to concrete. Less than 10 tonnes of the notified polymer will be imported per annum for each of the first five years.

ASSESSMENT OF PUBLIC, OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL EFFECTS

Hazard Assessment

The notified polymer was found to have very low acute oral toxicity, to be non-irritant to skin and a minimal irritant to eyes, and non-mutagenic in a bacterial reverse mutation assay. It is not expected to cross biological membranes, and systemic toxicity effects are not expected. Based on the data provided by the notifier, the notified polymer is not classified as a hazardous substance in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*.

Occupational Health and Safety

Dermal exposure to the imported products which contain < 2 % notified polymer may occur due to contact with drips and spills of the products during reformulation or addition to concrete. Exposure to the reformulated product containing a lower proportion of notified polymer may also occur during addition to concrete. There may also be dermal exposure to the concrete containing less than 0.01 % notified polymer. Exposure at this point will be very low due to the protective measures used to prevent contact with the fresh concrete.

Based on the low toxicological hazard presented by the notified polymer, the low concentrations present at all points, and the protective equipment specified in the MSDS (gloves, safety goggles and industrial clothing), the notified polymer will present a low risk to occupational health and safety.

Public Health

The only significant public exposure is limited to concrete purchased by do-it-yourself handymen for such application as residential driveways. This will be limited to dermal exposure. The notified polymer is not a dermal irritant in rabbits. Based on the above information the notified polymer is unlikely to pose a significant risk to public health.

Environmental Effects

The majority of the notified polymer will be immobilised in the matrix of the concrete fabrications in which it is used and will not pose a significant risk to the environment.

Formulation of the concrete admixture containing the notified polymer occurs through a process that minimises environmental release of the notified polymer and includes recycling of water used to wash residue from empty import containers and admixture plant equipment. The water used to wash admixture transport tankers is also recycled back into the formulation process.

At the concrete plants the notified polymer is used at a low concentration in concrete. Waste generated during the cleaning of plant equipment and ready-mix concrete trucks along with the excess concrete is allowed to harden before disposal to landfill. Therefore concrete waste containing the notified polymer is not likely to pose a hazard to the environment because the polymer will be immobilised in the matrix of this material.

There is potential for a small amount of notified polymer to be released to the environment as a consequence of spillage and leakage of hoses at the admixture plant. This release would be to waste water since the notifier states that this material would be washed into a holding pit connected to the on-site treatment plant. The notified polymer is likely to adsorb to waste water sludge at the on-site treatment plant thereby significantly reducing its release to the sewer. If some of the notified polymer leaches into water the risk to the aquatic environment would be low due to the high molecular weight of the notified polymer and its limited toxicity to aquatic organisms.

RECOMMENDATIONS

Control Measures

Occupational Health and Safety

- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified polymer as introduced:
 - impermeable gloves, safety goggles, industrial clothing.

Guidance in selection of personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

- A copy of the MSDS should be easily accessible to employees.
- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Secondary Notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

- (1) Under Section 64(1) of the Act; if
 - the notified polymer is introduced in a chemical form that does not meet the PLC criteria.

or

- (2) Under Section 64(2) of the Act:
- if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.

15 PUBLICATION SUMMARY REPORT

**Copolymer in Foraperle 321
Summary Report
Reference No: EX/32**

Elf Atochem (Australia) Pty Ltd (now Atofina (Australia) Pty Ltd) of 270-280 Hammond Road Dandenong SOUTH VIC 3175 has submitted a limited notification statement in support of their application for an assessment certificate for Copolymer in Foraperle 321. The notified polymer is intended to be used as a water repellent for paper products and protective coating for concrete products. It is estimated that greater than one tonne of the notified polymer will be imported per annum for each of the first five years.

Since granting of the abovementioned Assessment Certificate, International Sales and Marketing Pty Ltd of 55 Halstead Street South Hurstville NSW 2221 (ACN No. 36-467-259-314) has submitted a notification statement in support of their application for an extension of the original Assessment Certificate for Copolymer in Foraperle 321. Atofina (Australia) Pty Ltd has agreed to this extension. Information submitted by Atofina Australia Pty Ltd indicate that the use pattern remain the same as those assessed in NA/588.

The notifier, International Sales and Marketing Pty Ltd intends to import the notified polymer, in the product Tegosivin HE 503, at an additional amount of 25 kg per annum for use on concrete, clay and terracotta.

ASSESSMENT OF PUBLIC, OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL EFFECTS**Hazard Assessment**

Foraperle 321 containing the notified polymer was of low acute oral toxicity ($LD_{50} > 2\ 000$ mg/kg), was not a skin irritant or sensitiser, but was slightly irritating to rabbit eye. On the basis of the toxicology data provided, Foraperle 321 would not be classified as hazardous according to NOHSC *Approved criteria for Classifying Hazardous Substances*.

Occupational Health and Safety

The risk of occupational health and safety effects posed to transport workers, who will be handling unopened containers of the product containing the notified polymer, is low.

Workers in the paper industry may be exposed to solutions containing up to 30% of the notified polymer by dermal, ocular and inhalation routes during paper production phases, that is, internal and external treatment of paper and paper products. Little information was provided by the notifier on these processes. Although not classifiable as an eye irritant, ocular exposure to Foraperle 321 may cause immediate irritation should eye contact occur. The notifier indicates that workers at the paper mills will be required to wear eye protection, gloves and overalls. Given that the results of a skin sensitisation and irritation study conducted on Foraperle 321 were negative, and that dermal absorption of the polymer is unlikely because it has a high molecular weight, the risk of workers experiencing acute health effects from handling the notified polymer is low.

No data on inhalation toxicity has been provided. However, the notifier states that local exhaust ventilation systems are in place in paper production areas, which will serve to control inhalation exposure and therefore any potential health effects via this route of exposure.

Dermal exposure is the primary route of exposure to the notified polymer for workers in the building industry. However, the risk of occupational health effects for these workers is low, given the results of toxicological studies submitted by the notifier.

Foraperle 321 also contains N-methyl-2-pyrrolidone (NMP) and acetic acid. NMP is readily absorbed through the skin and is also a skin and eye irritant (R36/38). These risk phrases are incorporated on the Foraperle 321 label. NOHSC has not established a national exposure standard for NMP. Acetic acid has a NOHSC exposure standard of 10 ppm or 25 mg/m³ (TWA) and 15 ppm or 37 mg/m³ (STEL). Employers are responsible for ensuring that the exposure standard is not exceeded in the workplace. As inhalation exposure to and dermal absorption of these components may occur in the workplace, workers should wear personal protective equipment as indicated in the Recommendations of this report. These outline the special glove requirements as given in the Foraperle 321 Material Safety Data Sheet (MSDS).

For the use of the notified polymer in Tegosivin HE 503 as a hydrophobing agent for concrete, clay and terracotta, no significant risk to worker health and safety is expected. This is based on the expected low hazard of the polymer and the very low concentration of polymer in the product as applied.

Public Health

Where the product is sold to the public for application in the home, the primary hazards associated with this application will, based on the limited data available, relate to the content of NMP in Foraperle 321, rather than the notified polymer. The skin and eye irritancy of NMP has prompted consideration of this compound for inclusion in the Standards for the Uniform Scheduling of Drugs and Poisons (SUSDP) by the National Drugs and Poison Scheduling Committee (NDPSC) at its February 1998 meeting. The NDPSC has included this compound in the SUSDP in Schedules 6 and 5 and have additionally classified it as a designated solvent. At the concentration of NMP used in Foraperle 321 the preparation will require labelling as a Schedule 5 poison.

Based on the use pattern of the notified polymer and its physico-chemical and toxicological properties, the copolymer in Foraperle 321 is considered not to pose a significant risk to public health.

Environmental Effects

The main environmental exposure of the notified polymer will be through its major use to treat paper products. Some environmental exposure will also occur when the polymer is used in a minor way as a protective coating for concrete. In both these cases the polymer will be adsorbed onto a substrate and will essentially be inert. The polymer is water soluble and hence potentially mobile in landfill. However, it will remain bound to the paper matrix or onto the surface of clay minerals in soil and be immobile. Both applications to pulp suspension during paper manufacture and recycling of paper treated with the notified polymer may result in a low level of discharge with wastewater of the polymer from treatment plants. Based on limited information, the polymer is moderately toxic to daphnia and bacteria and is

of a type which is known to be toxic to algae. However, at the proposed levels of import the discharge levels in pulp mill effluent and recycling plant effluent are well below expected toxic levels. Hence the potential environmental hazard is low.

RECOMMENDATIONS

To minimise occupational exposure to Copolymer in Foraperle 321 the following guidelines and precautions should be observed: safety goggles should be selected and fitted in accordance with Australian Standard (AS) 1336 to comply with Australian/New Zealand Standard (AS/NZS) 1337; industrial clothing should conform to the specifications detailed in AS 2919 and AS 3765.1; impermeable gloves or mittens should conform to AS 2161.2. The MSDS states that neoprene, polyvinyl chloride, natural rubber or butyl rubber gloves should be worn. Spillage of the notified chemical should be avoided. Spillages should be cleaned up promptly with absorbents which should be put into containers for disposal. Good personal hygiene should be practised to minimise the potential for ingestion. A copy of the MSDS should be easily accessible to employees.

Due to the presence of NMP and acetic acid in the product Foraperle 321, appropriate general and exhaust ventilation should be employed in areas where the product is being handled in undiluted form. There is a NOHSC exposure standard for acetic acid of 10 ppm or 25 mg/m³ (TWA) and 15 ppm or 37 mg/m³ (STEL). Employers are responsible for ensuring that this level is not exceeded in the workplace.

The NDPSC has included this compound in the SUSDP in Schedules 6 and 5 and have additionally classified it as a designated solvent. At the concentration of NMP used in Foraperle 321 the preparation will require labelling as a Schedule 5 poison.

16 ACCESS TO FULL PUBLIC REPORT

NICNAS publishes a Full Public Report for each new chemical assessed. These reports are available for public inspection at the library of the National Occupational Health & Safety Commission at their Canberra office by appointment only. Please call the library on (02) 6279 1161 or (02) 6279 1163 to arrange to view the Full Public Report.

Reports can also be viewed and downloaded free of charge from our website at www.nicnas.gov.au. Copies of these reports may also be requested, free of charge, by contacting the Administration Section of NICNAS by phone: (02) 8577 8816 or fax: (02) 8577 8888.

17 COMMERCIAL EVALUATION CATEGORY PERMIT

The permits listed in Table 1 were issued to import or manufacture the following chemicals for commercial evaluation under section 21G of the *Industrial Chemicals (Notification and Assessment) Act 1989*.

Table 1
Commercial Evaluation Category Permits

PERMIT NUMBER	COMPANY NAME	COMPANY POSTCODE	CHEMICAL OR TRADE NAME	HAZARDOUS SUBSTANCE	QUANTITY	USE	PERIOD APPROVED
497	Rhodia PPMC Pty Ltd	3128	Tetrakis (hydroxymethyl) phosphonium chloride, urea and distilled tetradecylamine, UVCB condensation product	Yes	2000 kg	Flame retardant	2 years
498	Bayer Hodgsons Pty Ltd	2127	Desmodur DN and Desmodur DA-L	Yes	1000 kg	Crosslinker for Adhesive	2 years
499	Lanier (Australia) Pty Ltd	3207	RTP-007	No	1800 kg	Ingredient in photocopier toner	2 years

18 LOW VOLUME CATEGORY PERMITS

The permits listed in Table 2 were issued to import or manufacture the following chemicals under section 21U of the *Industrial Chemicals (Notification and Assessment) Act 1989*. Low Volume Category Permits are approved for 36 months.

Table 2
Low Volume Category Permits

PERMIT NUMBER	COMPANY NAME	COMPANY POSTCODE	CHEMICAL OR TRADE NAME	HAZARDOUS SUBSTANCE	USE	DATE
414	L'Oreal Australia Pty Ltd	3191	2-oleamido-1,3-octadecanediol	No	Formulation of skin and hair care products	7/01/2002
415	Johnson & Johnson Pacific Pty Ltd	2019	Copper, [glycyl-N-L-histidyl-N,N3-L-lysinato(2-)]-, monoacetate	No	Cosmetic ingredient	11/01/2002
416	Estee Lauder Pty Ltd	2018	Hexane, 1,6-diisocyanato, polymer with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol, and 2-oxepanone	No	Anti-caking agent of cosmetic skin care product	18/01/2002

N.D.: not determined; insufficient data available to effect a health effects classification under Approved Criteria [NOHSC:1008(1999)]

19 EARLY INTRODUCTION PERMITS FOR NON-HAZARDOUS INDUSTRIAL CHEMICALS

The permits listed in Table 3 were issued to import or manufacture the following chemicals prior to the issue of their respective assessment certificates under section 30A of the Act.

Table 3

Early Introduction Permits

PERMIT NUMBER	COMPANY NAME	CHEMICAL OR TRADE NAME	USE
192	DIC International Australia Pty Ltd	Aroplaz 6421-X-75	Component of industrial paint
193	BASF Watty Coatings Pty Ltd	Polymer in ZK56-3452 & ZQ7-56042	Paint component
195	Sika Australia Pty Ltd	Pronal 7535	Superplasticiser for concrete and mortar

20 NOTICE OF CHEMICALS ELIGIBLE FOR LISTING ON THE AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES FIVE YEARS AFTER ISSUING OF ASSESSMENT CERTIFICATES

Notice is given in accordance with section 14(1) of the *Industrial Chemicals (Notification and Assessment) Act 1989*, that the following chemicals have been added to the Australian Inventory of Chemical Substances.

Table 4

Chemicals Eligible for Listing on the Australian Inventory of Chemical Substances

Amines, polyethylenepoly-, polymers with formaldehyde, glycolic acid, nonylphenol and succinic anhydride monopolyisobutylene derivs.	376364-34-0	Unspecified
1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid, 1,3-butanediol and 2,2'-oxybis[ethanol]	374929-01-8	$C_8H_6O_4 \cdot C_8H_6O_4 \cdot C_4H_{10}O_2 \cdot C_4H_{10}O_3$
1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-, polymer with 2-butoxyethanol, 2-(hexyloxy)ethanol and 1,1'-methylenebis[isocyanatobenzene]	374929-02-9	$C_6H_{14}O_3 \cdot C_6H_{14}O_2 \cdot C_8H_{18}O_2 \cdot C_{15}H_{10}N_2O_2$
Fatty acids, C18-unsatd., dimers, polymers with bisphenol A, lactic acid, polypropylene glycol diamine and polypropylene glycol diglycidyl ether	376364-37-3	Unspecified
1,3-Benzenedicarboxylic acid, polymer with 1,4-benzenedicarboxylic acid, 1,3-dihydro-1,3-dioxo-5-isobenzofurancarboxylic acid, 1,2-ethanediol and .alpha,..alpha.'-[(1-methylethylidene)di-4,1-phenylene]bis[.omega.-hydroxypoly(oxy-1,2-ethanediyl)]	138720-81-7	$(C_{15}H_{16}O_2 \cdot C_2H_4O)_x (C_{10}H_8O_4)_n (C_8H_6O_4) \cdot (C_9H_4O_5)$
2-Propenoic acid, polymer with 2,5-furandione and propenamide, sodium salt	91778-22-2	$(C_3H_3O_2)_p (C_4H_2O_4)_r (C_3H_5O)_s (Na)_y \quad y=p+r+s$
Siloxanes and Silicones, di-Me, 3-aminopropyl group-terminated, polymers with bisphenol A and nonanedioyl dichloride	197462-48-9	Unspecified
2-Butendioic acid (2Z), monobutyl ester, polymer with butyl 2-2-methyl-2-propenoate, butyl 2-propenoate, 1,4-diethenylbenzene and ethenylbenzene, benzoyl peroxide- and tert-Bu peroxide-initiated	376632-57-4	Unspecified
Lecithins, soya, borates	376364-41-9	Unspecified
Siloxanes and Silicones, di-Me, Me hydrogen, reaction products with 10-undecenoic acid	375843-95-1	$CH_3-(Si(CH_3)_2-O)_m (Si[(CH_2)_{10}COOH](CH_3)-O)_n-Si(CH_3)_3$
Siloxanes and Silicones, di-Me, Me hydrogen, reaction products with 10-undecenoic acid, sodium salts	375843-96-2	$CH_3-(Si(CH_3)_2-O)_m (Si[(CH_2)_{10}COONa](CH_3)-O)_n-Si(CH_3)_3$
2-Propenoic acid, 2-methyl-, butyl ester, polymer with 1,4-butanediyl, di-2-propenoate, N-(1,1-dimethyl-3-oxobutyl)-2-propenamide, methyl 2-methyl-2-propenoate and 2-propenoic acid	374714-16-6	$(C_8H_{14}O_2 \cdot C_5H_8O_2 \cdot C_3H_4O_2 \cdot C_{10}H_{14}O_4 \cdot C_9H_{15}NO_2)_x$
Fatty acids, soya, polymers with acrylic acid, epichlorohydrin, formaldehyde and phenol	375843-93-9	Unspecified
1,4-Butanediol, polymer with 2,2'-[1,2-ethanediylbis(omega)]bis[ethanol] and 1,1'	374928-99-1	$(C_{15}H_{10}N_2O_2 \cdot C_6H_{14}O_4 \cdot C_4H_{10}O_2)_x$

21 NOTICE OF AMENDMENTS TO THE AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES

Notice is given in accordance with section 20 of the *Industrial Chemicals (Notification and Assessment) Act 1989* (the Act) that the following amendment have been made to the Australian Inventory of Chemical Substances (AICS).

1. The following chemical has been added to AICS.

Table 5 Amendment to AICS

CHEMICAL NAME	CAS NUMBER	MOLECULAR FORMULA
2-Propenoic acid, 2-methyl-, reaction products with epichlorohydrin and formaldehyde-phenol polymer	68610-47-9	$(C_6H_6O.C_4H_6O_2.C_3H_5ClO.CH_2O)_x$

22 INTERNATIONAL CHEMICAL ASSESSMENT MEETINGS

NICNAS recently participated in two international chemical assessment meetings, the IPCS 9th CICAD Final Review Board meeting and OECD 13th SIDS meeting. Participation in these meetings enables access to hazard assessment reports conducted by other countries. These reports are used as a basis for national priority existing chemical (PEC) reports resulting in shorter assessment time without the need to review original toxicity studies.

IPCS Ninth Final Review Board Meeting on Concise International Chemical Assessment Documents (CICADS)

The 9th FRB meeting on CICADs was hosted by Health Canada in Ottawa, on 29 October to 1 November 2001.

The following CICADs were approved by the Final Review Board as international assessments:

- Acrolein
- Bromoethane
- Carbon disulphide
- Silver (Environmental aspects)

The following CICADs were approved by the Final Review Board as international assessments, pending further work:

- 4-Chloroaniline
- Polychlorinated biphenyls (Human health aspects)
- Diethyl phthalate
- Ethylene glycol (Human health aspects)

OECD 13th SIDS Initial Assessment Meeting

The thirteenth SIDS Initial Assessment Meeting (SIAM 13) was hosted by the Swiss Agency for the Environment, Forests and Landscape at Bern, Switzerland from 6 to 9 November 2001. Approximately 100 representatives from Member countries, the European Commission and industry attended.

Of the 38 chemicals discussed at the meeting, all but five of them had SIDS Initial Assessment Profiles (SIAPs) agreed at the meeting. The chemicals discussed and their status at the conclusion of the meeting are listed in the table.

If you would like more information on either of the meetings, please contact Ms Deborah Willcocks by phone on (02) 85778890 or by email deborah.willcocks@nicnas.gov.au

More information on the OECD SIDS program can be obtained from the OECD website at: <http://www.oecd.org/ehs/hpv.html>, and on the IPCS CICAD program at http://www.who.int/pcs/ra_site/cicads.htm

Outcome of SIAM 13 - Final Status of SIAPs

CAS Number	Chemical	Sponsor	Recommendation	Comments
75-56-9	Oxirane, methyl-	UK:eu	Candidate for further work	SIAP agreed
79-10-7	Acrylic acid	DE:eu	Candidate for further work	SIAP agreed
79-20-9	Methylacetate	DE:eu	Currently of low priority for further work	SIAP agreed
103-84-4	Acetanilide	KO	Currently of low priority for further work	SIAP agreed
127-19-5	Dimethylacetamide	IT	Currently of low priority for further work	SIAP agreed
5392-40-5	Citral	JP	Currently of low priority for further work	SIAP agreed
6386-38-5	Metilox	CH	Currently of low priority for further work	SIAP agreed
58-55-9	Theophylline	DE/ICCA	Currently of low priority for further work	SIAP agreed
68-12-2	N,N'-Dimethyl formamide	DE/ICCA	Candidate for further work	SIAP agreed
74-83-9	Methyl bromide	US/ICCA	<i>Provisional recommendation:</i> Currently of low priority for further work	SIAP to be modified . Future discussion on EDG
75-01-4	Ethene, chloro-	US/ICCA	Currently of low priority for further work	SIAP agreed.
75-38-7	Vinylidene fluoride	US/ICCA	Currently of low priority for further work	SIAP agreed
79-34-5	Ethane, 1,1,2,2-tetrachloro-	FR/ICCA	Environmental section is currently of low priority for further work. Human health section recommendation to be finalised at a future SIAM	Environmental section agreed. Human Health section to be redrafted and to come back to a future SIAM
88-73-3	ortho-Chloronitrobenzene	DE/ICCA	Candidate for further work	SIAP agreed
88-74-4	Aniline, o-nitro-	FR/ICCA	Currently of low	SIAP agreed

			priority for further work	
91-76-9	S-Triazine, 2,4-diamino-6-phenyl-	JP/ICCA	Currently of low priority for further work	SIAP agreed
107-15-3	Ethylenediamine	US/ICCA	<i>Provisional recommendation:</i> Currently of low priority for further work	SIAP to be modified. Future discussion on EDG
107-41-5	2-Methyl-2,4-pentanediol	UK/ICCA	Currently of low priority for further work	SIAP agreed
108-77-0	Cyanuric chloride	CH/ICCA	Currently of low priority for further work	SIAP agreed
112-57-2	Tetraethylenepentamide	US/ICCA	<i>Provisional recommendation:</i> Currently of low priority for further work	SIAP to be modified. Future discussion on EDG
112-85-6	Docosanoic acid	JP/ICCA	Currently of low priority for further work	SIAP agreed
123-54-6	Pentan-2,4-dione	DE/ICCA	Candidate for further work	SIAP agreed
616-38-6	Carbonic acid dimethylester	IT/ICCA	<i>Provisional recommendation:</i> Currently of low priority for further work	SIAP to be modified. Future discussion on EDG. (SIAP will not be finalised until the results of the reprotoxicity study are known, probably in 2002).
868-77-9	2-Hydroxyethyl methacrylate	JP/ICCA	Currently of low priority for further work	SIAP agreed
1310-58-3	Potassium hydroxide	BE/ICCA	Currently of low priority for further work	SIAP agreed
1477-55-0	1,3-Bis(aminomethyl)benzene	JP/ICCA	Currently of low priority for further work	SIAP agreed
6864-37-5	2,2'-Dimethyl-4,4'-methylenebis(cyclohexylamine)	DE/ICCA	Currently of low priority for further work	SIAP agreed

7447-40-7	Potassium chloride	NO/ICCA	Currently of low priority for further work	SIAP agreed
7681-57-4	Disodium disulphite	KO/ICCA	Currently of low priority for further work	SIAP agreed
16470-24-9	Fluorescent Brightener 220	DE/ICCA	Candidate for further work	SIAP agreed
65-85-0	Benzoic acid	NL/ICCA	Currently of low priority for further work	SIAP agreed Category chemical with 100-51-6 532-32-1 582-25-2
100-51-6	Benzyl alcohol	NL/ICCA	Currently of low priority for further work	SIAP agreed Category chemical with 65-85-0 532-32-1 582-25-2
532-32-1	Sodium benzoate	NL/ICCA	Currently of low priority for further work	SIAP agreed Category chemical with 65-85-0 100-51-6 582-25-2
582-25-2	Potassium benzoate	NL/ICCA	Currently of low priority for further work	SIAP agreed Category chemical with 65-85-0 100-51-6 532-32-1
95-50-1	o-Dichlorobenzene	AUS	Candidate for further work	SIAP agreed
109-66-0	n-Pentane	NO:eu	Currently of low priority for further work	SIAP agreed
71-36-3	n-Butanol	US/ICCA	Currently of low priority for further work	SIAP agreed
123-86-4	Butyl acetate	US/ICCA	Currently of low priority for further work	SIAP agreed

23 DRAFT PRIORITY EXISTING CHEMICAL REPORT FOR LIMONENE

In accordance with section 60E(1) of the *Industrial Chemicals (Notification and Assessment) Act* 1989 (the Act), as amended, notice is hereby given by the Director that the draft Priority Existing Chemical (PEC) assessment report for limonene and its isomers is available for public comment.

Under section 60D of the Act, the draft PEC report was given to applicants for 28 days to enable correction of any errors. The revised draft report has now been given to each applicant and persons who provided information (under section 58 of the Act) for the purpose of providing any requests to vary the content of the report.

The report presents a summary and evaluation of information relevant to a full assessment of limonene, covering use, exposure, toxicity, effects on human health and the environment. Recommendations are made for the safe use of limonene.

The draft PEC report is now available for public comment. This report (approximately 120 pages) must be referred to for the purpose of making comment.

The overview of the report is available on the Internet at <http://www.nicnas.gov.au/news>. Hard or read-only electronic copies of the draft report may be obtained directly from:

**Existing Chemicals
NICNAS
GPO Box 58
Sydney NSW 2001
Australia**

or may be requested by fax: **(02) 8577 8888** or email: **jun.zhang@nicnas.gov.au**. Requests should clearly state which form (hard or electronic copy) is required.

Any requests for variation must be made with respect to the draft report and accompanied by a completed application form (NICNAS Form 4a) and should be received at NICNAS **by 5 March 2002**.

24 DRAFT PRIORITY EXISTING CHEMICAL REPORT FOR ACRYLAMIDE

In accordance with section 60E(1) of the *Industrial Chemicals (Notification and Assessment) Act* 1989 (the Act), as amended, notice is hereby given by the Director that the draft Priority Existing Chemical (PEC) assessment report for acrylamide, CAS No. 79-06-1, is available for public comment.

Under section 60D of the Act, the draft PEC report was given to applicants for 28 days to enable correction of any errors. The revised draft report has now been given to each applicant and persons who provided information (under section 58 of the Act) for the purpose of providing any requests to vary the content of the report.

The report presents a summary and evaluation of information relevant to a full assessment of acrylamide, covering use, exposure, toxicity, effects on human health and the environment. Recommendations are made for the safe use of acrylamide.

The draft PEC report is now available for public comment. This report (approximately 180 pages) must be referred to for the purpose of making comment.

The overview of the report is available on the Internet at <http://www.nicnas.gov.au/news>.

Hard or read-only electronic copies of the draft report may be obtained directly from:

**Existing Chemicals
NICNAS
GPO Box 58
Sydney NSW 2001
Australia**

or may be requested by fax: **(02) 8577 8888** or email: **stephen.zaluzny@nicnas.gov.au**. Requests should clearly state which form (hard or electronic copy) is required.

Any requests for variation must be made with respect to the draft report and accompanied by a completed application form (NICNAS Form 4a) and should be received at NICNAS **by 5 March 2002**.

25 SECONDARY NOTIFICATION OF POLYMER IN REACTINT RED X64

In accordance with section 65(2) of *the Industrial Chemicals (Notification and Assessment) Act, 1989* (the Act), as amended, notice is given that the Director requires the secondary notification of the existing chemical **Polymer in Reactint Red X64**. There is no Chemical Abstracts Service (CAS) Registry number assigned for this chemical.

Additional Studies Available for Polymer in Reactint Red X64

Polymer in Reactint Red X64 was assessed as a new industrial chemical (NA/405) and a report published in June 1996. Since the publication of the report additional information has been made available by Asia Pacific Specialty Chemicals Limited (APS) to the Director. The information includes the following:

- Colourant composition patent
- Twenty eight day repeated dose oral (gavage) toxicity study
- Biodegradability study
- Micronucleus test
- Chromosomal aberration test
- Dermal sensitization study

Reasons for Secondary Notification

The Director has decided that a secondary notification for Polymer in Reactint Red X64 is required because of the new studies now available.

Requirement to apply for secondary notification

In accordance with section 65(3) of the Act, an application for secondary notification must be made by all persons who introduce Polymer in Reactint Red X64 into Australia either by import or manufacture. There is a penalty for failure to comply with the requirement for secondary notification. The penalty for non-compliance may include prohibition from further importation or manufacture.

Application for secondary notification and information required

Secondary notification must be made to the Director by means of an application for secondary notification assessment for an existing chemical, accompanied by any relevant information relevant to an assessment of Polymer in Reactint Red X64 which was not originally covered in the 1996 assessment report.

In addition APS must provide the following:

- colour extraction tests (as mentioned in original data package);
- any information on the leaching of the polymer from end use products; and
- any information on assessments/reviews conducted by overseas regulatory authorities.

The secondary notification application form can be found on the NICNAS website at: <http://www.nicnas.gov.au/forms/files/Form1a-SN-PEC.doc>.

An application that some or all of this information should be exempt from publication may be made by applying under section 75 of the Act, and using the approved form:

<http://www.nicnas.gov.au/forms/pdf/hvic-form3.pdf>

Applications must be received no later than **5 March 2002**.

Additional persons with relevant information

In addition to the requirement to apply for secondary notification, any persons with information relevant to the assessment of Polymer in Reactant Red X64 and not originally covered in the 1996 assessment report are encouraged to submit the information for consideration. A copy of the assessment report (NA/405) can be found on the NICNAS website:

<http://www.nicnas.gov.au/publications/CAR/new/NA/NASUMMR/NA0400SR/NA405.htm>

Applicants are requested to contact Ms Deborah Willcocks by telephone (02) 8577 8890, fax: (02) 8577 8888 or e-mail: deborah.willcocks@nicnas.gov.au as soon as possible.

26 CALL FOR INFORMATION FOR NICNAS PEC EXPOSURE STANDARD REVIEW

The National Occupational Health and Safety Commission (NOHSC) is considering recommendations to review specific exposure standards. The recommendations are contained in Priority Existing Chemical (PEC) reports prepared by the National Industrial Chemicals Notification and Assessment Scheme (NICNAS).

Exposure standards are guides to the safe use of chemicals in the workplace. The proposed standards give details on the acceptable concentration of substances in the worker's breathing zone, to limit the risk of adverse health effects. Information on the National Exposure Standards database can be found at:

<http://www.nohsc.gov.au/OHSInformation/Databases/ExposureStandards/expsearch.asp>

NOHSC is providing an opportunity for interested parties to supplement the information contained in the PEC reports. Information in the reports and any material provided in response to this request will be used to assist NOHSC in deciding if a review of the exposure standard is required and, if so, the priority of that review and the appropriate review methodology. NOHSC's arrangements for initiating and conducting reviews are set out in *Process to Review and Update the National Exposure Standards*, which can be found at:

<http://www.nohsc.gov.au/PDF/Standards/NESReviewProcess.pdf>

The chemicals for which information is sought are listed below:

2-Butoxyethanol	1,4-Dioxane
Carbon disulphide (from Sodium Ethyl Xanthate PEC)	HCFC 123
Chrysotile asbestos	Persulphates (Ammonium, Potassium, & Sodium)
Chrysotile alternatives	Savinase
Ortho-dichlorobenzene	Trichloroethylene

NOHSC is seeking information relevant to the consideration of the exposure standard recommendations about the above substances contained in the PEC reports. To assist interested parties, a list of questions that may be used to guide preparation of additional information can be found at:

<http://www.nohsc.gov.au/OHSLegalObligations/HazSubstancesAndDngGoods/esrInfo.doc>

PEC REPORTS

PEC reports can be found at: www.nicnas.gov.au/publications/car/pec/pecindex.htm

Alternatively, if you wish to have this information and/or a downloaded copy of a summary PEC report sent to you (not available for HCFC 123 secondary notification, Sodium ethyl xanthate secondary notification or Persulphates), place your request by:

- Telephone to Freecall 1800 666 843 – follow the prompts when the call is answered; or
- Fax to (02) 6279 1150 – mark your fax 'Call for information for NICNAS PEC Exposure Standard Reviews, Attention: Chemicals Framework Team' and include your name and postal address; or

- Email to esrequest@nohsc.gov.au – title your email ‘Call for information for NICNAS PEC Exposure Standard Review’ and include your name and postal address.

The call for information closes on 2 April 2002

27 AMENDMENTS TO NEW CHEMICAL REPORTS**NA/876 Polymer in Morfree 403A**

The Director of Chemicals Notification and Assessment approves modifications of the polymer name, molecular formula, structure formula and polymer ingredient tables for Polymer in Morfree 403A (NICNAS Reference No. NA/876, Certificate No. 001179), based on the requests from the notifier, Rohm and Haas Australia Pty Ltd.

NA/944 Sucralose

Paragraph 1 (Page 20) of the January Chemical Gazette should read, 175 kg per year of the notified chemical will be imported per annum for each of the first five years.