



Commonwealth  
of Australia

*Gazette*

No. C 4, Tuesday, 2 April 2002  
Published by the Commonwealth of Australia

*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 PUBLICATION SUMMARY REPORT

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## Ester 6 Summary Report Reference No: NA/967

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Hellay Laboratories Pty Ltd (ABN: 49050 136 528) of 9 Monterey Rd, Dandenong VIC 3175 has submitted a standard notification statement in support of their application for an assessment certificate for Ester 6. The notified chemical is intended to be used as a component of finished hydraulic oil formulations. 10-100 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 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 or to be genotoxic. It is not likely to be an eye irritant but could be a slight skin irritant. Upon repeated exposure, organ or systemic effects are not expected. 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

Hydraulic oil containing the notified chemical will be imported in 200 L steel containers, each containing 95% notified chemical. Exposure to hydraulic oils containing the notified chemical during transport is not expected to occur except in the event of accidental spillage.

Dermal exposure to the notified chemical may occur when filling hydraulic systems and during maintenance of equipment. Dermatitis may result after repeated exposure to the notified chemical, however, due to the expected low frequency of exposure, the risk is small. Also the use of personal protective equipment, such as impermeable gloves and industrial clothing, will reduce any risk of adverse health effects.

Disposal contractors may experience dermal exposure to the notified chemical during disposal. The risk to disposal contractors of adverse effects from oil contaminants is likely to be greater than that due to the notified chemical.

#### *Conclusion*

The toxicological profile, mode of use and use of personal protective equipment indicate that the potential for significant risks to human health through occupational exposure to the notified chemical is low.

#### Public Health

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

## Environmental Effects

The notified chemical will not be manufactured in Australia. The chemical will be imported into Australia as a 95% component in a finished hydraulic oil formulation.

Usage patterns indicate that a large portion of the imported chemical contained in the hydraulic base stock could enter the environment either following oil changes, or through leakages from mobile equipment during normal operations. It is expected that oil changes will be carried out by trained mechanics in closed workshops and the used oil generated will be disposed of properly through the appropriate channels. Oil leakages during operations of mobile hydraulic machinery would occur in open areas such as agricultural soils, ditches and forests. Leakages would be distributed over a wide area given the anticipated nationwide use of the oil. Oil entering the soil environment would become adsorbed onto sediment or organic particles. The new chemical is not readily biodegradable, but is inherently biodegradable. Hence, oil entering the soil will eventually degrade through biological and abiotic processes.

Release to the aquatic environment is not anticipated except in the event of a major spill. Oil entering the water compartment would eventually enter sewage treatment facilities, where it would partially degrade. Undegraded material would adsorb onto sediment or organic solids and be removed with solid wastes.

The notified chemical is not toxic to aquatic organisms up to the limit of its water solubility and is considered to have low potential for bioaccumulation due to the low exposure. Hence safety margins toward these organisms are expected to be high.

Overall, the environmental hazard from the notified chemical will be low provided that the material is used as indicated, and that disposal of used oil takes place via the proper routes such as recycling and incineration.

## RECOMMENDATIONS

### Occupational Health and Safety

- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified chemical as introduced
  - impermeable gloves
  - 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 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.

## Disposal

- The notified chemical should be disposed of at an approved facility.

## 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.

## 2 PUBLICATION SUMMARY REPORT

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### Intersept Summary Report Reference No: NA/982

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Interface Australia Pty Ltd (ABN 39 000 692 026) of 4 Henry St Picton NSW 2571 has submitted a standard notification statement in support of their application for an assessment certificate for Intersept. The notified chemical is intended to be used as a bactericide/fungicide in the manufacture of carpets. Nine 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 chemical was of low acute oral toxicity in rats and low acute dermal toxicity in rabbits. However, it was harmful via the inhalation route in rats. The notified chemical was corrosive to the skin and caused severe eye irritation in rabbits. In addition, it was a skin sensitiser in guinea pigs in a Magnusson and Kligman test.

The notified chemical was not genotoxic in a bacterial reverse mutation test, sister chromatid exchange test, in vitro chromosomal aberration test or mouse lymphoma mutation test.

From a 90-day dietary study in rats, the NOEL was determined to be 62.5 mg/kg/day for males based on forestomach lesions and lenticular degeneration, and 37.5 mg/kg/day for females based on lenticular degeneration. A report of a reproductive and development study was provided. The no observed adverse effect level (NOAEL) was considered to be 125 mg/kg/day in female rats based on the clinical signs, reduced bodyweight gain, and embryo and foetal toxicity.

According to the NOHSC *Approved Criteria for Classifying Hazardous Substances*, the notified chemical was classified as a hazardous substance with risk phrases of R20 (Harmful by inhalation), R34 (Causes burns), R43 (May cause sensitisation by skin contact), and R63 (Possible risk of harm to the unborn child).

The notifier also provided toxicity studies on carpet extract. The concentration of the notified chemical in the carpet extract was below the analytical limit. The carpet extract seems to be of low acute oral toxicity in rats, is non-irritating to eyes but slightly irritating to the skin in rabbits.

According to the MSDS, INTERSEPT is a combustible liquid.

#### Occupational Health and Safety

Exposure of workers during transportation or warehousing of the notified chemical in 205 L steel drums should only occur in the event container rupture. Should rupture occur, spread of the notified chemical will be limited by its viscosity.



The chemical is first neutralised with ammonium hydroxide prior to manufacture of the carpet precoat. The 205 L drums are lifted mechanically and tilted to release the contents into an open mixing vat. The viscosity of notified chemical should limit the potential for dermal or ocular exposure and workers are required to wear PPE because the notified chemical is corrosive. Under these conditions worker exposure is unlikely. The drums contain a removable plastic liner which the notifier estimates will contain a residual amount of 100 – 150 mL of the notified chemical. Worker exposure during removal of these plastic liners, initially to landfill but, at a later date, as feedstock for the manufacture of the carpet backing should be low given the viscosity of the notified chemical and the use of PPE. Worker exposure during QA sampling and testing should also be low for the same reasons. In addition, neutralisation should reduce the potential for skin and eye irritancy so that risk of these effects to workers should be lower. Although the mixing vat is open and no exhaust ventilation is used, inhalation exposure to the notified chemical is likely to be low given its low vapour pressure and the fact the aerosols are not generated during mixing (according to the notifier). On balance, although worker exposure on average is likely to be low, even occasional contact with the notified chemical is undesirable given it is corrosive, skin sensitising and teratogenic. Therefore, adequate PPE must be worn by all workers likely to come in contact with the notified chemical.

Following neutralisation of the notified chemical, it is pumped via an enclosed line to a 1000 L storage tank, to the carpet precoat mixing vat where the concentration of the notified chemical is reduced to 1.5% and then to bulk tankers. At this concentration there should be little risk to workers of skin or eye irritancy or reproductive effects. Although skin irritation was observed in the skin sensitisation study in control animals at rechallenge with 2.5% notified chemical, the neutralised chemical may be less likely to exhibit this effect. According to the NOHSC *Approved Criteria for Classifying Hazardous Substances*, the concentration cut-off for classifying a mixture as R63 is 5%. Therefore the precoat would not be classified as R63. However, according to the NOHSC *Approved Criteria for Classifying Hazardous Substances*, the precoat would be classified as a skin sensitiser as it is above the concentration cut-off of 1%. Taken together, the reduced hazard of the precoat coupled with the use of an automated system and the use of PPE suggests that the risk of adverse health effects to workers should be low, although adequate PPE should still be required to protect against skin sensitisation.

The carpet precoat is transported to the carpet manufacturing plant, added to an application tank via enclosed transfer and applied to the carpet via a roller. Exposure to workers at this stage should be minimal and the risk of adverse health effects should be low. However, again, adequate PPE is required to minimise the risk of skin sensitisation from intermittent exposure due to spillage. Once the precoat is dried on the finished carpet, the notified chemical is encapsulated and would not be bioavailable.

## **Public Health**

Exposure of the general public as a result of transport and disposal of products containing the notified chemical is assessed as being negligible. Direct public exposure to the notified chemical will be widespread and will occur primarily as a result of dermal contact with treated carpet products. As carpets wear small particles may become a part of dust and could be inhaled. Ingestion exposure is also possible, especially in young children, as a

consequence of dermal contact with treated carpet and transfer of material from the hands to the mouth.

The tables below give an overview of the estimated doses and margins of safety for several toxicological effects for each exposure scenario. For skin irritation the NOEL was assumed to be at the limit of detection (1ppm) or  $1\mu\text{g}/\text{cm}^2$  for wipe samples. For eye irritation it was assumed that an eye has a volume of  $4\text{ cm}^3$  and the carpet extract tested contained  $12\text{ mg}/\text{cm}^3$ . In the skin sensitisation test a concentration of 1.25% Intersept gave a similar response to the control group and therefore a dose of  $1250\text{ mg}/\text{cm}^2$  was considered to be the NOEL.

#### Irritation and sensitisation effects

Effect	Total dose	NOEL	Margin of safety
Skin irritation	$0.05\ \mu\text{g}/\text{cm}^2$	$1\ \mu\text{g}/\text{cm}^2$	20
Eye irritation	$0.005\ \mu\text{g}/\text{eye}$	$48\ \mu\text{g}/\text{eye}$	9600
Skin sensitisation	$0.05\ \mu\text{g}/\text{cm}^2$	$1250\ \mu\text{g}/\text{cm}^2$	25 000
Pulmonary sensitisation	$2 \times 10^{-8}\ \mu\text{g}/\text{cm}^2$	$1250\ \mu\text{g}/\text{cm}^2$	$6 \times 10^{10}$

#### Acute systemic effects

Scenario	Total dose ( $\mu\text{g}/\text{kg}$ )	NOEL ( $\mu\text{g}/\text{kg}$ )*	Approx. margin of safety
Adult worker	3.1-55.8	230 000	4000
Adult nursing home	4.5-82	230 000	3000
Pregnant	2.3-48	230 000	5000
Child	17-300	230 000	800

\*NOEL derived from acute oral  $\text{LD}_{50}$

#### Chronic systemic effects

Scenario	Total dose ( $\mu\text{g}/\text{kg}$ )	NOEL ( $\mu\text{g}/\text{kg}$ )	Approx. margin of safety
Adult worker	3.1-55.8	37 500	700
Adult nursing home	4.5-82	37 500	460
Pregnant	2.3-48	37 500	800
Child	17-300	37 500	130

#### Developmental effects

Scenario	Total dose ( $\mu\text{g}/\text{kg}$ )	NOEL ( $\mu\text{g}/\text{kg}$ )	Approx. margin of safety
Adult worker	3.1-55.8	125 000	2000
Adult nursing home	4.5-82	125 000	N/A
Pregnant	2.3-48	125 000	450
Child	17-300	125 000	N/A

The smallest margin of safety was for skin irritation. Although the estimated dose was only 20 times higher than the estimated NOEL, the assumptions used in this calculation were relatively conservative and therefore the margin of safety may be even greater. In general the estimated margins of safety are relatively high, suggesting that significant risk to public health is unlikely after exposure to carpets treated with Intersept.

## Environmental Effects

The notified chemical is intended as a biocide for use in synthetic carpet manufacture, and assuming import quantities of 9 tonnes per annum, as a worst case it is estimated that up to 8% (540 kg) of the new chemical may be lost each year as a result of spills and waste during various manufacturing and application activities. The majority of this is expected to be placed into landfill although some may be incinerated.

The fate of most of the imported chemical will be closely associated with that of old carpet, and most of this is expected to be placed into landfill. The notified chemical is a component of a cured polymer adhesive layer between the carpet proper and its flexible backing, and as the carpet backing and adhesive matrix are slowly broken down by the bacterial and abiotic processes operative in the landfills the compound will be released, primarily to soil. Here it is expected to be relatively immobile due to its expected high affinity for the organic component of soils and sediments, and would then be mineralised through bacterial action to water and oxides of carbon and nitrogen, while the phosphorus content would be converted to phosphate and would become associated with soil minerals.

Since most of the waste chemical associated with manufacture of the precoat and from unused precoat itself is also expected to be placed into landfill, this would also be degraded as described.

If any old carpet were to be incinerated this would also be completely destroyed, and the phosphate would become associated with ash and ultimately the soil.

The new chemical has been demonstrated to be acutely toxic to fish and highly toxic to daphnia under acute exposure conditions and in a 21-day survival and reproduction test. Moreover, it is very highly toxic to green algae with an  $E_bC50$  of only 3.3  $\mu\text{g/L}$ . However, the use pattern of the chemical suggests that very little would reach the water compartment from its use in carpet manufacture or through its function in the carpet, and any incidental release would be low level and diffuse. Also if released to water it is expected that potential for toxicity to aquatic species would be mitigated through the chemical becoming associated with sediments and its susceptibility to biodegradation.

The chemical is not expected to bioaccumulate in aquatic species.

Although a test on the chemical demonstrated some toxicity to earth worms at soil concentrations of 1000 mg/kg, it is unlikely that the compound would enter the wider soil compartment in concentrations likely to be of concern.

The use pattern of the new chemical as described in the notification dossier, together with the expectation that it will not be environmentally persistent indicates that when used as indicated it presents a low risk to the environment. Nevertheless, the compound is highly toxic to aquatic species and every effort should be made to prevent releases to the water compartment.

The chemical is not considered to pose a risk to the environment based on its reported use pattern. However, due to its high toxicity to aquatic species any large release to water

courses (eg. resulting from transport accidents) are expected to cause significant environmental damage.

## RECOMMENDATIONS

### *Regulatory controls*

The NOHSC Chemicals Standards Sub-committee should consider the following health hazard classification for the notified chemical:

R20 (Harmful by inhalation), R34 (Causes burns), R43 (May cause sensitisation by skin contact), and R63 (Possible risk of harm to the unborn child).

Use the following risk phrases for products/mixtures containing the notified chemical:

≥ 25%: R20, R34, R43, R63; ≥ 10%: R34, R43, R63; ≥ 5%: R36, R38, R43, R63; ≥ 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, during neutralisation and precoat manufacture:

Manufacturing processes should be enclosed where possible.

Employers should implement the following safe work practices to minimise occupational exposure to the notified chemical as introduced, during neutralisation and precoat manufacture:

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, during neutralisation and during precoat manufacture:

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.

Workers should be informed of the reproductive hazards of the notified chemical prior to entering the area in which it is to be used.

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(1) of the Act; if

- The use pattern of the new chemical changes such that increased exposure to the aquatic environment is anticipated. In this case full test reports for the daphnia chronic study and the algal toxicity study should be provided.
- If the conditions of use are varied from use in carpet pre-coat materials at concentrations up to a maximum of 1.5%, greater exposure of the public may occur. In such circumstances, further information may be required to assess the hazards to public health.

or

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.

### 3 PUBLICATION SUMMARY REPORT

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#### Fluorogelb 2 Summary Report Reference No: LTD/1003

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Cosmetic Products Pty Ltd (ACN 000 128 101) of 1 Wella Way Somersby NSW 2250 has submitted a limited notification statement in support of their application for an assessment certificate for Fluorogelb 2. The notified chemical is intended to be used as a component of hair dye. Less than 1 tonne 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 chemical has low acute oral and dermal toxicity. It is neither a skin irritant (as neat chemical and at 5% dilution) nor a skin sensitiser. The notified chemical and a 5% dilution were slight eye irritants as evidenced by transient conjunctival effects and iridial inflammation. In a 90-day oral repeat dose study, serum cholesterol was significantly elevated and alteration of the pancreatic system were seen in high dose males, therefore, the NAOEL for males was established as 30 mg/kg bw/day. In the absence of similar effects in high dosed females, the NOAEL for females was established as 90 mg/kg bw/day, the highest dose tested in the study. This suggests that male animals are more susceptible to the toxic effects from the test substance compared to females. The notified chemical gave negative results *in vitro* and *in vivo* genotoxicity studies.

On the basis of the data supplied, the notified chemical, Fluorogelb 2, would not be classified as hazardous substances under the NOHSC *Approved Criteria for Classifying Hazardous Substances*.

##### Occupational Health and Safety

###### *Transport and Storage*

Except in the event of accident, exposure during transport and storage is limited, since workers are only expected to handle sealed containers.

###### *Reformulation*

Reformulation will be carried out predominantly in closed systems, however addition of the dye concentrate containing the notified chemical involves manual operations. The dye concentrate is in a powder form, therefore, inhalation exposure to workers is of concern when manually adding dye concentrate into the mix tank. The non-respirable size of the dye concentrate (up to 710 µm) and the use of ventilation systems and respiratory protection would limit exposure to the notified chemical when handling the dye concentrate.

Limited dermal and ocular exposure to the notified chemical is possible when opening and closing drums, connecting and disconnecting transfer and filling lines, and cleaning and maintenance of equipment. Dermal exposure due to drips and spills at the filling station can

also occur. Precautions should be taken to avoid ocular contact with the dye preparations, as slight eye irritation may occur.

The notified polymer is considered to be non-hazardous. However, the presence of a wide range of additional ingredients in the hair dye preparations may require that more stringent precautions be taken to prevent worker exposure. Adequate ventilation systems are in place to maintain exposure levels below the relevant occupational exposure standard. The use of the personal protective equipment specified in the Material Safety Data Sheet (MSDS) and the low concentration of the notified chemical in the dye preparation render low occupational exposure during these activities.

#### *End-use*

Intermittent dermal exposure can occur when applying the dye preparation to the hair. Hairdressers use chemical resistant gloves when applying the dye. The low concentration of the notified chemical in the hair dye products (maximum 5%) and the use of gloves would ensure low occupational risk.

### **Public Health**

The public exposure to the hair dye products containing low levels of the notified chemical will be widespread and repeated. Home users are provided with disposable gloves for use when applying the dye. Given its low concentration, the short time and low frequency exposure, and its low toxicity, the risk to the public health induced by the notified chemical is hence considered to be low.

### **Environmental Effects**

Almost all of the import volume of the notified chemical is likely to be released to the sewer during the process of applying the dye to hair. There will also be a small release to the sewer during the formulation of the finished hair dye products.

The balance of the import volume of the notified chemical will be released to landfill as residue on 'empty' import bags and 'empty' bottles or tubes of the finished dye products. In landfill the notified chemical may leach into the water compartment given its moderate solubility in water and relatively low  $\log P_{ow}$ .

The end use of the notified chemical suggests that release is likely to be dispersed across the populated areas of Australia and a PEC was calculated as  $8.43 \times 10^{-4}$  mg/L per day. The notified chemical is only slightly to moderately toxic to aquatic organisms of which algae appear to be the most sensitive resulting in a predicted no effect concentration (PNEC) of 36.9  $\mu\text{g/L}$ . The PEC is lower than the ecotoxicity values, giving a ratio of PEC/PNEC of 0.023.

The notified chemical is not expected to pose a significant hazard to the aquatic environment. Further the potential for bioaccumulation is likely to be low given the moderate water solubility and  $\log P_{ow}$ .

## RECOMMENDATIONS

### Occupational Health and Safety

- Employers should implement the following engineering controls to minimise occupational exposure when handling the notified chemical as introduced:
  - Local exhaust ventilation during transfer and mixing operations.
- Employers should implement the following safe work practices to minimise occupational exposure when handling the notified chemical and the hair dye products containing it:
  - Enclosed and automated bottle and tube filling operations;
  - During transfer operations and cleaning of equipment, avoid spills and splashing.
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified chemical and the hair dye products containing it:
  - Chemical resistant gloves, safety glasses, overalls and respiratory protection when handling the dye concentrate and the dye preparations;
  - Gloves (or disposable gloves for home users) when applying hair dye products to hair.

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.

### Disposal

- The notified chemical should be disposed of by landfill or incineration.

### Emergency procedures

- Spills/release of the notified chemical should be handled by collecting into closed containers for disposal.

### 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.

## 4 PUBLICATION SUMMARY REPORT

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**CIN 10092201**  
**Summary Report**  
**Reference No: LTD/1009**

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Kodak Australasia Pty Ltd (ACN 004 057 621) of 173 Elizabeth St Coburg VIC 3058 has submitted a limited notification statement in support of their application for an assessment certificate for CIN 10092201. The notified chemical is intended to be used as a component of photographic emulsions. Approximately 800 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**

The notified chemical was found to be harmful by oral administration to rats, with 100 % mortality at 1000 mg/kg bw, although no mortality was seen at 500 mg/kg bw. Similar results were seen in the toxicity prescreen for the mouse micronucleus study, with low mortality at 800 mg/kg bw, but high mortality at 1000 mg/kg bw. No mortality was seen in rats in a repeat dose study at 750 mg/kg bw/day. In rats, the LD50 was calculated as 707 mg/kg bw. The notified chemical was found to be of low toxicity in rats by dermal application.

The notified chemical was found to be non-irritant and non-sensitising to skin, and a slight irritant to rabbit eyes, with low levels of conjunctival redness persisting beyond 48 hours.

In a 28-day repeat dose oral study in rats, a NOAEL of 225 mg/kg bw/day was established. At 750 mg/kg bw/day, neurobehavioural effects and effects on the thyroid were observed. Minor effects such as urine discolouration were observed at all doses tested.

The notified chemical was found to be mutagenic in *S. typhimurium* TA100 both in the presence and absence of metabolic activation, although no genotoxic effects were observed for the other strains tested in the bacterial mutagenicity assay. In a chromosome aberration study in vitro, clear increases in the number of cells with chromosome aberrations were induced by the notified chemical both in the presence and absence of metabolic activation. In an in vivo mouse erythrocyte micronucleus test, the notified chemical was not clastogenic.

The notifier stated that the notified chemical has not been observed to result in human health effects during use elsewhere in the world.

Based on the results of the toxicity testing using the notified chemical, it should be classified as a hazardous substance in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances* and should carry the risk phrase R22: Harmful if swallowed. While the in vitro genotoxicity tests were indicative of potential for genotoxicity, the notified chemical would not be classified in accordance with the Approved Criteria for mutagenic effects based on the data provided. The safety phrases S24: Avoid contact with skin; and S37: Wear suitable gloves should however be applied.

## **Occupational Health and Safety**

Based on the results from the genotoxicity studies on the notified chemical, a precautionary approach of avoidance of exposure to the notified chemical should be used at all times. Occupational exposure to the notified chemical is most likely during film manufacture, which involves weighing out the dry powder and manually adding this to mix tanks, sampling for testing, then transferring the resultant solution, containing < 10 % notified chemical, to coating equipment. Dermal, inhalation and ocular exposure to the powder and dermal exposure to the solution are possible during these processes. Dermal exposure to the gelatin dispersion containing < 1 % notified chemical may also occur.

The risk of inhalation exposure is reduced as there is no significant proportion of the powder in the respirable size range, and as weighing and addition of the powder will be carried out under local exhaust ventilation. In addition, workers handling the dry powder are to wear company provided overalls, safety glasses, disposable vinyl or nitrile gloves, and a mask with particle filter. Workers handling solutions or gelatin dispersions will use personal protective equipment comprising disposable vinyl gloves, overalls and safety glasses.

There is little risk to occupational health and safety following incorporation into photographic film or paper, as the amount of notified chemical will be very small, and the layer containing the chemical will lie under several overcoat layers.

## **Public Health**

Public exposure to the notified chemical is expected to be limited to unlikely transport accidents involving damage to the packaging of the imported powder form. In the unlikely event of the powder becoming windborne the large particle size of the powder will prevent the breathing in of the powder and contact with the lungs is unlikely. However the powder may contact the skin, mouth, nose and eyes. This contact is likely to be minimal and transient. A slight irritation of the eyes is possible. In the end-use products the notified chemical is present as an integral part of a photographic emulsion layer which in turn is covered by other layers. The low likelihood of exposure to the notified chemical suggest that it will not pose a significant hazard to public health when used in the proposed manner.

## **Environmental Effects**

The notified chemical is not expected to pose a significant risk to the environment when used in the manner proposed. The majority of the notified chemical will be incorporated into a gelatin dispersion and coated onto photographic articles where it will be immobilised beneath overcoat layers. These articles will eventually be disposed to landfill where they will slowly degrade and release the notified chemical in a diffuse manner. In this environment the notified chemical is not expected to persist due to its susceptibility to hydrolysis.

The notifier has indicated that there will be a low release to the sewer from its facility in Victoria, resulting in a predicted environmental concentration (PEC) of 0.06 micrograms per litre after treatment at the Werribee sewage plant. The notified chemical is only slightly toxic to aquatic organisms of which fish appear to be the most sensitive, resulting in a predicted no effect concentration (PNEC) of 196 micrograms per litre. The PEC is several orders of magnitude lower than the levels at which ecotoxicity was observed, giving the low ratio of

PEC/PNEC of  $3.06 \times 10^{-4}$ , and there appears to be a wide safety margin from the predicted use pattern for the notified chemical. The notified chemical is not expected to pose a significant hazard to the aquatic environment.

A small amount of the notified chemical will be released to secured landfill as residue on empty import bags and air filters used in the manufacturing process. In landfill the chemical may leach into the water compartment due to its high solubility and low n-octanol/ water partition coefficient. It will not persist in this environment due to its hydrolysable nature.

There is limited potential for bioaccumulation due to the low release of the notified chemical and because it is not expected to persist in the water compartment of the aquatic environment but degrade through abiotic processes including hydrolysis.

## RECOMMENDATIONS

### *Regulatory Controls*

- The NOHSC Chemicals Standards Sub-committee should consider the following health hazard classification for the notified chemical:
- R22: Harmful if swallowed
- S24: Avoid contact with skin
- S37: Wear suitable gloves.

### *Control Measures*

#### Occupational Health and Safety

- Employers should implement the following engineering controls to minimise occupational exposure to the notified chemical in powder solution form:  
Local exhaust ventilation.
- Employers should implement the following engineering controls to minimise occupational exposure to the notified chemical in powder solution form:  
Enclosed equipment should be used where possible.
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified chemical in powder form:  
gloves, overalls, safety glasses, and respiratory protection.
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified chemical in solution or dispersion form:  
gloves, overalls, 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 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.

## 5 PUBLICATION SUMMARY REPORT

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### Polymer in Optidose 3100 Summary Report Reference No:LTD/1011

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ROHM and HAAS Australia Pty Ltd has submitted a standard notification statement in support of their application for an assessment certificate for the chemical Polymer in Optidose 3100. The notified polymer is intended to be used in a scale inhibitor formulation for industrial cooling towers and boiler water applications. Up to 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 polymer is of low acute toxicity, is not irritating to the skin and only slightly irritating to the eye. Information provided by the notifier indicates that the results of toxicity testing of the notified polymer are consistent with toxicity data for the monomer poly(acrylic acid) and other acid functional groups. There is no data available that would indicate a potential toxicity for this polymer. The physical and chemical properties of the polymer preclude the potential for inhalation exposure. Final use concentrations of the polymer will further diminish the toxicity to insignificant levels.

Based on the available data the polymer in Optidose 3100 is not classified as hazardous under the *Approved Criteria for Classifying Hazardous Substances*.

##### Occupational Health and Safety

The polymer has low toxicity, volatility and reactivity. Engineering controls are in place in the workplaces where the polymer will be used. Therefore, the probability of exposure to the polymer is low and the risk to workers is minimal.

##### Public Health

Exposure of the general public as a result of reformulation, transport and disposal of the product containing the notified polymer is assessed as being negligible. The product containing the notified polymer is for industrial use only. It will not be used by the general public in domestic situations. The risk to public health is considered to be minimal since public exposure is unlikely as a result of the industrial uses of products containing the notified polymer.

##### Environmental Effects

The notified polymer will not be manufactured in Australia but will be imported for reformulation into a water treatment solution which will be used in industrial water treatment applications such as corrosion and scale inhibitors in cooling tower and boiler water applications.

The intended use pattern of the notified polymer is expected to result in the majority of the polymer being eventually released into the environment. However, release will occur in a

very diluted form owing to the low concentration of the notified polymer contained within the water treatment solution and in the cooling towers. The worst case scenario predicted environmental concentration (PEC) of the notified polymer discharged from water treatment systems and into the domestic sewer of a large city and a small town are expected to be in the order of 0.01 mg/L and 0.12 mg/L respectively. The ecotoxicity data indicate the notified polymer is not harmful to fish or *Daphnia*, but is able to inhibit the growth of algae and is considered moderately toxic to these organisms. The PEC/PNEC ratios calculated for the aquatic environment of a city and a small town respectively, are 0.125 and 1.5, indicating no immediate concern toward aquatic organisms when released in a city, but a potential for concern if released in a small town.

However, the PEC values are likely to be overestimated. Both values assume all of the imported volume of polymer is released from one site over a 365-day period, with no on-site treatment, no losses or adsorption, and no further dilution once released into the natural environment. In reality, rather than being restricted to one city or town, release of the imported volume of polymer will be much more diffuse than is assumed in calculating the PEC values. The polyanionic nature of the notified polymer indicates that it will bind strongly to soils and sediments. Consequently, a large portion of the polymer is also likely to be removed in sewage treatment facilities by adsorption and settling prior to release into receiving waters. Further dilution is expected to occur in the receiving waters.

Sludge containing the notified polymer collected from on-site and municipal treatment facilities is expected to be disposed of in landfill. In landfill, the polymer will adsorb to soil and sediment due to its polyanionic nature and should not leach in aquatic compartments even though the chemical is water soluble. In soil environments, the notified chemical is expected to undergo slow abiotic and microbial degradation.

Given the above considerations, the environmental exposure and overall environmental hazard from the notified chemical are expected to be low.

## RECOMMENDATIONS

### Occupational Health and Safety

- Employers should implement the following engineering controls to minimise occupational exposure to the polymer in Optidose 1000:  
local exhaust ventilation
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the polymer in Optidose 1000:  
Gloves, glasses, coveralls

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 polymer in Optidose 1000 are classified as hazardous to health in accordance with the *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.

#### Environment

#### Disposal

- The notified polymer should be disposed of in landfill or incinerated in accordance with local, state, and federal regulations.

#### Emergency procedures

Spills/release of the notified polymer should be contained immediately with inert material and placed in suitable containers for disposal in accordance with the MSDS. Spills and cleaning runoff should not be allowed to enter municipal sewers or open water bodies.

#### 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 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.

No additional secondary notification conditions are stipulated.



## 6 PUBLICATION SUMMARY REPORT

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### Polymer in Optidose 1000 Summary Report Reference No: LTD/1012

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ROHM and HAAS Australia Pty Ltd has submitted a standard notification statement in support of their application for an assessment certificate for the Polymer in Optidose 1000. The notified polymer is intended to be used in a scale inhibitor formulation for industrial cooling towers and boiler water applications. Up to 5 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 polymer is of low acute toxicity, is not irritating to the skin and only slightly irritating to the eye. Information provided by the notifier indicates that the results of toxicity testing of the notified polymer are consistent with toxicity data for the monomer poly(acrylic acid) and other acid functional groups. There is no data available that would indicate a potential toxicity for this polymer. The physical and chemical properties of the polymer preclude the potential for inhalation exposure. Final use concentrations of the polymer will further diminish the toxicity to insignificant levels.

Based on the available data the Polymer in Optidose 1000 is not classified as hazardous under the NOHSC Approved Criteria for Classifying Hazardous Substances.

##### Occupational Health and Safety

The polymer has low toxicity, volatility and reactivity. Engineering controls are in place in the workplaces where the polymer will be used. Therefore, the probability of exposure to the polymer is low and the risk to workers is minimal.

##### Public Health

Exposure of the general public as a result of reformulation, transport and disposal of the product containing the notified polymer is assessed as being negligible. The product containing the notified polymer is for industrial use only. It will not be used by the general public in domestic situations. The risk to public health is considered to be minimal since public exposure is unlikely as a result of the industrial uses of products containing the notified polymer.

##### Environmental Effects

The notified polymer will not be manufactured in Australia but will be imported for reformulated into a water treatment solution which will be used in industrial water treatment applications such as corrosion and scale inhibitors in cooling tower and boiler water applications.

The intended use pattern of the notified polymer is expected to result in the majority of the chemical being eventually released into the environment. The worst-case scenario predicted environmental concentration (PEC) of the notified polymer discharged from water treatment systems and into the domestic sewer of a large city and a small town, are expected to be in the order of 5 µg/L and 0.06 mg/L respectively. The ecotoxicity data indicate the notified polymer is not harmful to fish or *Daphnia*, but is able to inhibit the growth of algae and is considered moderately toxic to these organisms. The PEC/PNEC ratios calculated for the aquatic environment of a city and a small town respectively, are 0.06 and 0.8, indicating no immediate concern toward aquatic organisms.

However, the PEC values are likely to be overestimated. Both values assume all of the imported volume of chemical is released from one site over a 365-day period, with no on-site treatment, no losses or adsorption, and no further dilution once released into the natural environment. In reality, rather than being restricted to one city or town, release of the imported volume of polymer will be much more diffuse than is assumed in calculating the PEC values. The polyanionic nature of the notified polymer indicates that it will bind strongly to soils and sediments. Consequently, a large portion of the polymer is also likely to be removed in sewage treatment facilities by adsorption and settling prior to release into receiving waters. Further dilution is expected to occur in the receiving waters.

Sludge from effluent treatment facilities, container residues, and wastes from the formulation processes will be disposed in landfill. In landfill, the polymer will adsorb to soil and sediment due to its polyanionic nature and should not leach in aquatic compartments even though the chemical is water-soluble. In soil environments, the notified chemical is expected to undergo slow abiotic and microbial degradation.

On the basis of the PEC/PNEC ratio, the low environmental exposure, and low environmental hazard the chemical is not considered to pose a risk to the environment based on its reported use pattern.

## RECOMMENDATIONS

### Occupational Health and Safety

- Employers should implement the following engineering controls to minimise occupational exposure to the polymer in Optidose 1000:  
local exhaust ventilation
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the polymer in Optidose 1000:  
Gloves, glasses, coveralls

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 polymer in Optidose 1000 are classified as hazardous to health in accordance with the *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.

#### Environment

#### Disposal

- The notified polymer should be disposed of in landfill or incinerated in accordance with local, state, and federal regulations.

#### Emergency procedures

Spills/release of the notified polymer should be contained immediately with inert material and placed in suitable containers for disposal in accordance with the MSDS. Spills and cleaning runoff should not be allowed to enter municipal sewers or open water bodies.

#### 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 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.

No additional secondary notification conditions are stipulated.

## 7 PUBLICATION SUMMARY REPORT

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### Polymer in Infineum C9567 Summary Report Reference No: PLC/240

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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 Polymer in Infineum C9567. The notified polymer is intended to be used as a wax crystal nucleator additive in winterised diesel fuel. Four 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 at a concentration of 2% in the imported additive package but the additive package formulation is yet to be finalised. However, the MSDS states that a representative formulation will contain 52% distillate (petroleum), hydrotreated, light which is classified as harmful (Xn) and assigned the risk phrases R65: May cause lung damage if swallowed and R66: Repeated exposure may cause skin dryness or cracking.

##### 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 fuel and transfer of fuel to road tankers, workers will not experience adverse health effects from their low exposure to the notified polymer as little of the fuel additive package will be spilt during transfer, the notified polymer is at a low concentration and it is not a health hazard.

Tanker drivers and customers of the finished fuel and their employees will receive negligible exposure to the notified polymer because of the low concentration present in the final fuel (0.002%). Therefore, the risk of adverse health effects for these workers arising from exposure to the notified polymer is negligible.

The risk of adverse health effects from exposure to the petroleum distillate in the imported formulation is assessed as low as exposure is likely to be intermittent and there is little chance of workers imbibing the formulation.

##### Conclusion

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

## **Public Health**

The public may come into contact with the notified polymer after it is incorporated into diesel fuel. During transfer of the diesel fuel from storage tanks to fuel tanks in vehicles, there is potential for small spillage and skin contact by consumers. Given that the notified polymer is present at a very low concentration in finished diesel fuel, and that the exposure is likely to be limited, this is unlikely to cause significant public health concerns.

## **Environmental Effects**

Release of the notified polymer into the environment is expected to be low. Almost all of the notified polymer will be destroyed during combustion of the fuel containing the fuel additive releasing carbon dioxide and water. The polymer is not expected to add significantly to greenhouse gas emissions given that the combustion products comprise only a small fraction of the total amount of combustion products released by fuel burning itself. The polymer is expected to burn cleanly and be completely destroyed during combustion.

Very little of the polymer is expected to reach the aquatic compartment, except in the case of transport accidents. A small amount of polymer could be released in situations where transfer spills at service stations are cleaned up inappropriately by hosing into drainage systems. However, given the economic cost of these losses, any release of the polymer into the aquatic environment in this way is likely to be very small and diffuse. If the substance enters waterways it is expected to float on the surface and to eventually volatilise from water or reach the shoreline.

Small amounts of the polymer may be released to the environment via landfill or into the soil compartment. This release is likely to be diffuse, although higher releases may occur in the vicinity of the fuel blending facilities as a result of spills and removing residual materials from empty containers for reuse. Any spills occurring at refineries will be disposed of properly by incineration according to methods described in the MSDS. Any polymer entering the soil environment is expected to slowly degrade by biotic and abiotic processes.

The polymer is not expected to cross biological membrane or bioaccumulate given its low water solubility and high molecular weight.

The use of the new notified polymer as a fuel additive will not result in significant release to the aquatic or soil compartments. Release into the atmosphere will involve only carbon dioxide and water. Hence overall use of the polymer as intended is not considered to pose any hazard to the environment.

## **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. Spillages should be cleaned up promptly with absorbents which should then be put into containers for disposal;
- Good personal hygiene should be practised to minimise the potential for ingestion;
- A copy of the MSDS should be easily accessible to employees.
- The labels for products containing Infineum C9567 should be in accordance with the NOHSC *National Code of Practice for the Labelling of Workplace Substances*

If products containing the notified polymer 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:

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

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.

## 8 PUBLICATION SUMMARY REPORT

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### Aroplaz-6421-X-75 Summary Report Reference No: PLC/273

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DIC International (Australia) Pty Ltd of 18-20 Pickering Road, Mulgrave, VIC 3170 has submitted a synthetic polymer of low concern (PLC) notification statement in support of their application for an assessment certificate for Aroplaz 6421-X-75. The notified polymer is intended to be used as a component of paint for the spray application of machinery. Less than 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

No toxicological information has been provided for Aroplaz 6421-X-75. However, the notified polymer has a high molecular weight and is unlikely to penetrate biological membranes. Its chemical structure also suggests that the polymer has a low toxicity viz; a lack of reactive functional groups, lack of charged groups, lack of solubility in water, non-cationic in the pH range 4-9 and high stability. It contains no reactive functional groups and no residual monomers. The polymer meets the PLC criteria and is unlikely to be a hazardous substance according to the National Occupational Health and Safety Commission's (NOHSC) *Approved Criteria for Classifying Hazardous Substances*.

The hazardous nature of Aroplaz 6421-X-75 derives from the solvents used in the product. The imported polymer solution is classified as hazardous according to NOHSC *Approved Criteria for Classifying Hazardous Substances*.

The following risk phrases were listed on the material safety data sheet (MSDS) for Aroplaz 6421-X-75:

R11            Highly flammable  
R20/21        Harmful by inhalation and in contact with skin  
R38            Irritating to skin

The polymer solution Alkyd Resin (Aroplaz 6421-X-75) is classified as a Class 3 dangerous good (flammable liquid) because of the solvent content.

The MSDS states that inhalation of the vapour or spray mists can result in headaches, dizziness and nausea. Repeated and prolonged occupational over-exposure to solvents can produce central nervous system damage.

##### Occupational Health and Safety

The polymer solution is imported in steel drums, then transported to a manufacturing plant for further processing into paint. Skin contamination may occur during paint formulation, QC testing, packaging and cleaning up of spills and maintenance and cleaning up of equipment. QC testing provides the possibility of exposure to small quantities of the notified polymer when collecting samples. The formulation process is largely enclosed, with local exhaust ventilation provided, and workers handling the polymer will wear personal protective

equipment consisting of safety glasses or goggles, protective gloves, overalls, boots and respirator with vapour cartridge or canister. These controls will also provide protection against exposure to other constituents of the formulated coating. These controls and the low toxicological impact render the health risk from the notified polymer for these formulation workers as low.

During spray application of the paint, inhalation exposure to the notified polymer may occur, in addition to dermal and ocular exposure during spray application and cleaning of equipment.

The final paint mix including the pre-prepared paint component containing the notified polymer could contain a wide variety of additional ingredients. This is likely to introduce human health hazards due to the presence of potentially toxic solvents. It is also probable that professionals involved in the spray painting industry will use a number of different paint formulations. For these reasons, the notified polymer must be assessed for the contribution it makes to the hazards associated with the spray application of the paint. The presence of many potential and actual hazardous substances in the formulations requires the use of stringent engineering controls, such as correctly constructed and maintained spray booth, and of a high level of personal protective equipment, such as impermeable overalls and gloves, safety glasses or goggles and respirator. The use of the paint containing the polymer should be in accordance with the NOHSC *National Guidance Material for Spray Painting*. The level of protection from exposure afforded by standard protective measures will provide adequate protection from the polymer, which is likely to be less intrinsically toxic than most of the solvents and pigments and also some other paint resins.

Once the final paint mix has hardened, the notified polymer is bound within the matrix and unavailable for exposure or absorption.

There is no occupational exposure expected for transport and storage workers except in case of an accident.

There are NOHSC exposure standards for xylene, toluene and ethyl benzene, identified as ingredients in the paint solution. 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.

The solutions containing the 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.

Similar considerations apply in the cleaning of spray equipment and disposal of the polymer. The wastes containing the polymer may be hazardous materials on the basis of the solvent and other resin content, and the precautions used for the additional materials should be adequate for protection from the polymer. In addition, much of the polymer will be crosslinked and hardened, and therefore immobile, by the time of disposal.

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



## Public Health

Public exposure to the notified polymer is expected to be limited to unlikely transport accidents involving damage to the packaging carrying the imported product or to the packaging containing the reformulated paint. Such exposure is likely to be dermal and transient. The notified polymer has a high molecular weight and is not likely therefore to penetrate any biological membranes in contact with it. In the hardened paint coverings the notified polymer is present as an integral part of the matrix of the paint and is not accessible to human contact. The low likelihood of exposure to the notified chemical and its low toxicity suggest that it will not pose a significant hazard to public health when used in the proposed manner.

## Environmental Effects

Direct release of the notified polymer to the environment is not expected to occur during the formulation process, however, a small amount of waste will be generated mainly through accidental spills, equipment cleaning, and container residues. Some release of the notified polymer will also occur during application of the paint to machinery. Transfer efficiency of paint during spray painting is approximately 82.5%, hence 17.5% of paint containing the new polymer could be released as overspray. It is expected that spray painting will occur in closed workshops where the over-sprayed paint will be captured for disposal. The rest of the notified polymer will be incorporated into the coating formulation and deposited on machinery, where once dried, will be inert.

Waste material generated during paint formulation and application will be disposed of to landfill or incineration. In landfill, the new polymer will slowly degrade. Leaching of the polymer from landfill sites is unlikely given the expected low water solubility. Incineration of polymer wastes would destroy the polymer yielding combustion products comprising mainly water and oxides of carbon. Polymer incorporated onto machinery will share the fate of the machines, which may include steel reclamation at the end of their useful life.

The environmental hazard posed by the notified polymer is expected to be low. The polymer is not expected to enter the aquatic environment during normal use, and it is unlikely to cross biological membranes, due to the high molecular weight, and as such should not bioaccumulate.

## RECOMMENDATIONS

### *Control Measures*

#### Occupational Health and Safety

No specific measures are required for the notified polymer. However, in the interest of good occupational health and safety, the following controls are recommended:

- Employers should implement the following engineering controls:
  - exhaust ventilation during formulation and filling processes
  - enclosed and automated formulation process

- Employers should implement the following safe work practices:
  - 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 solvent solution containing the notified polymer:
  - Chemical resistant gloves, protective clothing which protects the body, arms and legs, respirator with vapour cartridge or canister and goggles or 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 AROPLAZ 6421-X-75 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.

#### Emergency procedures

In the event of a spill, the notified polymer should be contained, absorbed onto soil, sand or other inert material, and the resulting waste disposed of in landfill or 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:

Under Section 64(1) of the Act; if

- the notified polymer is introduced in a chemical form that does not meet the PLC criteria.
  - if the conditions of use are varied from its proposed use as a component of paint for machinery, then greater exposure of the public may occur. In such circumstances, further information may be required to assess the hazards to public health.

or

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.

## 9 PUBLICATION SUMMARY REPORT

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### HA-96-3259 Summary Report Reference No: PLC/282

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PPG Australia Pty Ltd of McNaughton Road, Clayton, VIC 3168 (ACN 82 055 500 939) has submitted a synthetic polymer of low concern (PLC) notification statement in support of their application for an assessment certificate for Polymer in HA-96-3259. The notified polymer is intended to be used as component of a surface coating. Between 5 and 40 tonnes of the notified polymer will be imported or manufactured per annum for each of the first five years.

### ASSESSMENT OF PUBLIC, OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL EFFECTS

#### Hazard Assessment

No toxicological information has been provided for the polymer in HA-96-3259. 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 polymer solution HA-96-3259 Air-Drying Short Oil Alkyd Resin 6689 is a hazardous substance due to the content of aromatic solvents. It is classed as a Class 3 dangerous good (flammable liquid) because of the solvent content.

#### Occupational Health and Safety

The final paint mix including the pre-prepared paint component containing the notified polymer could contain a wide variety of additional ingredients. This is likely to introduce human health hazards due to the presence of potentially toxic solvents. The use of the paint containing the polymer should be in accordance with the NOHSC *National Guidance Material for Spray Painting*. There are NOHSC exposure standards for xylene and butyl acetate, identified as ingredients in the paint solution containing HA-96-3259. The level of protection from exposure afforded by the standard protective measures will provide adequate protection from the polymer, which is likely to be less intrinsically toxic than most of the solvents and pigments and some other paint resins. The polymer itself is of low hazard, and apart from the controls already in place to prevent exposure to other paint components, and to the polymer in particulate form during spraying, no additional controls are required.

#### Public Health

Paint products containing the polymer in HA-96-3259 are not available for sale to the general public and will only be used by professional spray painters. The potential for public exposure to the polymer during transport, manufacture, use and disposal is assessed as negligible. Members of the public may make dermal contact with items coated with products containing the polymer. However, exposure will be negligible because the polymer is likely to be bound within the cured paint film and therefore the risk to public health is considered to be very low. Therefore, the polymer in HA-96-3259 Air Drying Short Oil Alkyd Resin 6689 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 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. 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 treated by a distillation process whereby the solvent is reclaimed and the remaining solid containing the notified polymer will be disposed of in landfill. The notified polymer in overspray (up to 70% of imports) 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

### *Control Measures*

#### Occupational Health and Safety

No specific measures are required for the notified polymer. However, in the interest of good occupational health and safety, the following controls are recommended:

- Employers should implement the following safe work practices to minimise occupational exposure during handling of paints containing the polymer in HA-96-3259
  - 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 solvent solution containing the notified polymer:
  - impervious gloves, coveralls and goggles for the manufacture of the polymer and the paint.

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 HA-96-3259 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.

#### Emergency procedures

The following emergency procedures are recommended:

In the event of a spill, HA-96-3259 should be contained as described in the MSDS (i.e. absorbed onto soil, sand or other inert material) and the resulting waste disposed of in landfill.

#### 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(1) of the Act: if

- the notified polymer is introduced in a chemical form that does not meet the PLC criteria.

or

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.

**10 PUBLICATION SUMMARY REPORT**

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**LR-147  
Summary Report  
Reference No: EX/23**

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Minolta-QMS Australia of 4-44 Hampden Road Artarmon NSW 2154, Tech Pacific Australia Pty Ltd of 55 Mentomore Avenue Roseberry NSW 2018 and Kawaura & Co Pty Ltd of Unit 2, 17-19 Chester Street Camperdown 2050 have submitted a notification statement in support of their application for an extension of the Assessment Certificate for LR-147. The notified chemical is intended to be used as a component of a fully formulated toner product ready for use in photocopying machines. Less than one tonne per annum will be imported for the next five years.

The original assessment certificate is held by Minolta Business Equipment Australia Pty Ltd of Unit 9, 372 Eastern Valley Way Chatswood NSW 2067 and Lexmark International Inc of 12A Rodborough Road Frenchs Forest NSW 2086 respectively. Minolta Business Equipment Australia Pty Ltd and Lexmark International Inc have both agreed to this extension.

There has been no significant variation in matters affecting occupational, environmental or public exposure as set out in the notification statement that accompanied the application for extension of the original certificate. There has been no new information available to the notifier regarding the health and environmental effects of the notified chemical. The original summary report is republished below for public record.

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

On the basis of submitted data, the notified chemical would not be classified as hazardous in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*.

Based on the low toxicological hazard presented by the chemical and the expected very low exposures, the health risk posed to office workers is negligible. A low occupational health risk exists for office equipment repair workers, who may be frequently exposed via the skin and respiratory tract to low concentrations of the notified chemical. Exposure to the notified chemical is not expected to occur once the toner is bound to paper. Based on the information provided and the intended use, the notified chemical does not appear to pose a significant risk to public health. The occupational health risk to waterside, warehouse and transport workers is negligible.

The vast majority of chemical will be fused with the toner to paper during the copying process. Waste paper disposal is effected through incineration, recycling or deposition to landfill. In all three cases the chemical should be destroyed either through vigorous chemical reaction, or through (albeit slow) biological or abiotic processes. Leaching of any uncured chemical powder in landfill, either from accidental spillage or residues in empty toner cartridges, is not of significant environmental concern due to the expected low volume and diffuse nature of disposal. The chemical's relatively high water solubility and low octanol/water partition coefficient should prevent bioaccumulation. Overall, the environmental hazard due to the use of the notified chemical should be low.

## RECOMMENDATIONS

To minimise occupational exposure to LR-147, the following guidelines and precautions should be observed:

- Work areas around photocopiers, facsimile machines and laser printers should be well ventilated. Workers using the product should implement good work practices to avoid spills and the generation of dusts;
- Good personal hygiene should be practised to minimise the potential for ingestion;
- A copy of the Material Safety Data Sheet (MSDS) for LR-147 and/or information about the toners containing LR-147 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*, then workplace practices and control procedures consistent with State and Territory hazardous substances regulations must be in operation.

### Secondary Notification

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

## 11. 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](http://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.



## 12 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
507	Ashland Pacific Pty Ltd	2162	Polymer in Pliogrip 7400 and 7652	ND	2000 kg	Adhesive	1 year
508	Australian Cypress Oil Pty Ltd	2471	Australian Blue Cypress Oil	Yes	1000 kg	Odorent in cosmetic and toiletry products	2 years

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

### 13 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
419	Givaudan Pty Ltd	2128	Anapear	No	Ingredient of fragrance compounds	20.02.2002
421	Bronson and Jacobs Pty Ltd	2140	Butene, homopolymer hydrogenated	Yes	Skin conditioning agent	21.02.2002
422	Givaudan Pty Ltd	2128	3,7,11-trimethyl-6,10-dodecadienal	No	Fragrance ingredient	21.02.2002
423	Givaudan Pty Ltd	2128	6,7-Epoxy-1,2,3,4,5,6,7,8-octahydro-1,1,2,4,4,7-hexamethylnaphthalene	No	Fragrance ingredient	21.02.2002

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

## 14 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

<b>PERMIT NUMBER</b>	<b>COMPANY NAME</b>	<b>CHEMICAL OR TRADE NAME</b>	<b>USE</b>
199	Rohm and Haas Australia Pty Ltd	Polymer in EXP-3668	Surface coating component
200	The Valspar (Australia) Corporation Pty Ltd	Polymer in 99R606	Blending into other resins
201	BASF Australia Ltd	Pronal 753S	A super plasticiser for concrete and mortar

**15 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**

CHEMICAL NAME	CAS NUMBER	MOLECULAR FORMULA
Fatty acids, C18-unsatd., trimers, reaction products with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8 heptadecafluoro-N-(2-hydroxyethyl)-N-methyl-1-octanesulfonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N-(2-hydroxyethyl)-N-methyl-1-butanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-N-(2-hydroxyethyl)-N-methyl-1-heptanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-N-(2-hydroxyethyl)-N-methyl-1-hexanesulfonamide and 1,1,2,2,3,3,4,4,5,5,5-undecafluoro-N-(2-hydroxyethyl)-N-methyl-1-pentanesulfonamide	161074-58-4	Unspecified
Butanamide, N-(2,3-dihydro-2-oxo-1H-benzimidazol-5-yl)-2-[(2-methoxyphenyl)azo]-3-oxo-	82199-12-0	C <sub>18</sub> H <sub>17</sub> N <sub>5</sub> O <sub>4</sub>
Phosphorothioic triamide, butyl-	94317-64-3	C <sub>4</sub> H <sub>14</sub> N <sub>3</sub> PS
Hexanedioic acid, polymer with 1,4-butanediamine	50327-77-0	(C <sub>6</sub> H <sub>10</sub> O <sub>4</sub> .C <sub>4</sub> H <sub>12</sub> N <sub>2</sub> ) <sub>x</sub>
Benzo[1,2-b:4,5-b']difuran-2,6-dione, 3-phenyl-7-[4-[(tetrahydro-2-furanyl)methoxy]phenyl]-	134724-55-3	C <sub>27</sub> H <sub>20</sub> O <sub>6</sub>
Siloxanes and Silicones, cetyl Me, di-Me, Me hydrogen, reaction products with polyethylene glycol monoallyl ether	144243-53-8	Unspecified
Siloxanes and Silicones, di-Me, C24-54-alkyl group terminated	170831-38-6	Unspecified

## 16 REQUEST TO VARY ACRYLAMIDE PEC REPORT

In accordance with section 60E(6) of the *Industrial Chemicals (Notification and Assessment) Act 1989*, as amended, notice is hereby given by the Director that a decision has been made on each request to vary the draft Priority Existing Chemical (PEC) report on acrylamide.

A copy of the decision can be obtained from:

NICNAS  
334-336 Illawarra Rd.  
Marrickville  
NSW 2204

GPO Box 58  
Sydney NSW 2001

Or from Stephen Zaluzny on telephone (02) 8577 8883 or email  
[stephen.zaluzny@nicnas.gov.au](mailto:stephen.zaluzny@nicnas.gov.au)

## 17 REQUEST TO VARY LIMONENE PEC REPORT

In accordance with section 60E(6) of the *Industrial Chemicals (Notification and Assessment) Act 1989*, as amended, notice is hereby given by the Director that a decision has been made on each request to vary the draft Priority Existing Chemical (PEC) report on limonene.

A copy of the decision can be obtained from:

NICNAS  
334-336 Illawarra Rd.  
Marrickville  
NSW 2204

GPO Box 58  
Sydney NSW 2001

Or from Ms Jun Zhang on telephone (02) 8577 8882 or email [jun.zhang@nicnas.gov.au](mailto:jun.zhang@nicnas.gov.au).