



Commonwealth  
of Australia

*Gazette*

No. C5, Tuesday, 7 May 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.

## CONTENTS

### NEW CHEMICALS

### SUMMARY REPORTS

1	NA/922	ANTI-TERRA 204 WS	6
2	NA/977	COMPONENT IN UVECOAT 3002	10
3	NA/984	NALCO 73199	13
4	NA/989	STRONTIUM ALUMINATE	17
5	NA/997	KC6451	21
6	NA/999	1,3-PROPANEDIAMINE, N,N''-1,2-ETHANEDIYLBIS-, REACTION PRODUCTS WITH CYCLOHEXANE AND PEROXIDIZED N-BUTYL-2,2,6,6-TETRAMETHYL-4-PIPERIDINAMINE-2,4,6-TRICHLORO-1,3,5-TRIAZINE REACTION PRODUCTS (FLAMESTAB NOR 116FF /TKA 45009)	26
7	NA/1000	POLYMER IN DISPERBYK-184	29
8	LTD/1001	SODIUM BEHENOYL LACTYLATE	33
9	STD/1003	HARDENER LO	36
10	LTD/1004	ADDUCT JW2184	40
11	LTD/1007	POLYMER IN DIST	44
12	LTD/1010	NT-21	47
13	STD/1011	GRACE PROPRIETARY ACETATE SALT	50
14	LTD/1013	H-9605	53
15	LTD/1015	NT-16	56
16	LTD/1016	NT-22	59

17	LTD/1018	Z-46	62
18	PLC/222	1,3-BENZENEDICARBOXYLIC ACID, POLYMER WITH HEXANEDIOIC ACID, 2,2' OXYBIS[ETHANOL] AND 1,2-PROPANEDIOL (PE 218)	64
19	PLC/276	LEXMARK POLYMER HB-580	67
20	EX/33	PROMIDIUM CO	70
21	ACCESS TO FULL PUBLIC REPORTS		74
<b>PERMITS ISSUED</b>			
22	COMMERCIAL EVALUATION PERMITS		75
23	LOW VOLUME CHEMICAL PERMITS		76
24	EARLY INTRODUCTION PERMITS		77
<b>AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES</b>			
25	NOTICE OF CHEMICALS ELIGIBLE FOR LISTING ON THE AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES FIVE YEARS AFTER ISSUE OF ASSESSMENT CERTIFICATE		78
26	NOTICE OF AMENDMENTS TO THE AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES		80
<b>EXISTING CHEMICALS</b>			
27	NOTICE OF PUBLICATION OF LIMONENE SUMMARY REPORT		81
28	NOTICE OF PUBLICATION OF ACRYLAMIDE SUMMARY REPORT		86
29	DRAFT SECTION 48 REPORTS FOR POLYCHLORINATED NAPHTHALENES AND CHLORINATED STYRENES		88

## **SPECIAL NOTICES**

<b>30</b>	<b>DECLARATION OF SODIUM CYANIDE AS A PRIORITY EXISTING CHEMICAL</b>	<b>89</b>
<b>31</b>	<b>FOURTEENTH OECD SIDS INITIAL ASSESSMENT MEETING (SIAM)</b>	<b>93</b>

## 1 PUBLICATION SUMMARY REPORT

---

### Anti-Terra 204 Summary Report Reference No: NA/922

---

Nuplex Industries (Aust) Pty Ltd of 49-61 Stephen Road, BOTANY NSW 2019 (ACN 000 045 572) and Degussa Coating & Colorants Pty Ltd of 30 Commercial Drive DANDENONG VIC 3175 (ABN 16 079 823 313) have submitted a standard notification statement in support of their application for an assessment certificate for Anti-Terra-204 WS. The notified polymer is intended to be used as a dispersing additive in solvent based paint systems. Up to 6 tonnes of the notified polymer will be imported per annum for the first five years.

#### **Hazard Assessment**

Anti-Terra-204 WS was of very low acute toxicity in rats. It was a slight skin and eye irritant in rabbits. The notified polymer was not mutagenic in bacterial strains tested with or without S9- mix. Based on the available data, the notified polymer cannot be classified against the NOHSC *Approved Criteria for Classifying Hazardous Substances*.

The imported polymer solution, Anti-Terra-204, containing approximately 50% notified polymer is a hazardous substance due to the concentration of petroleum solvent present. The risk phrases R38 'Irritating to skin', R45, 'May cause cancer' (if benzene content is >0.1%) and R65 'Harmful: May cause lung damage if swallowed' apply. The polymer solution is also classed as a Class 3 dangerous good. The MSDS for the polymer solution Anti-Terra-204 lists a number of potential health effects, namely nausea, vomiting, abdominal pain, headaches, dizziness, along with skin, eye, gastrointestinal and respiratory irritation. These relate to the solvents rather than the notified polymer.

#### **Occupational Health and Safety**

There is little potential for significant occupational exposure to the notified polymer in the transport and storage of the paint components containing this polymer. There will be exposure during the local formulation of the colorant dispersion, paint and paste products, and in the use and disposal of these products.

During the colorant dispersion and paint products manufacturing processes, the main exposure route for the notified polymer will be dermal. The polymer solution and the paint/paste products will be viscous, and ready formation of aerosols is not expected. The polymer is not expected to be hazardous by dermal exposure as the high molecular weight will preclude absorption through the skin. Protective measures used to prevent exposure to the hazardous solvents should provide sufficient protection against the notified polymer.

The final paint mix, including the pre-prepared paint containing the notified polymer, could contain a wide variety of additional ingredients once fully mixed. This is likely to introduce human health hazards because, apart from a range of potentially toxic solvents, there may be components containing resins with pendant isocyanate groups. The spraying procedure also produces a dense aerosol of paint particles which would 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.

For these reasons, the notified polymer must be assessed for the contribution it makes to the hazards associated with use of the spray paints. The presence of many potential and actual hazardous substances in the formulations 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, pigments and other paint resins.

The professional painters will wear overalls during roller/brush application. Due to the low hazard profile of the notified polymer and the low concentration of the notified polymer in the final painting products, the health risk for these professional painters use the paint products containing the notified polymer with roller/brush application is expected to be low.

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

The paint components 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.

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

## **Public Health**

Members of the public may be exposed to the notified polymer following transport accidents or following its contamination of the environment. However the likelihood of transport accidents involving the notified polymer or of the environmental dispersion of the notified polymer is low. DIY painters may come in contact with low concentrations of the notified polymer. However, the frequency of exposure is expected to be low. Any contact that does occur will most likely be dermal. It has a high molecular weight and thus a low capacity to penetrate biological membranes. It has a low acute toxicity and it does not irritate the skin. After the application of a coating containing the notified polymer, it is heat cured on the finished product. The notified polymer is then present in the coating as an inert and inaccessible component. It is considered that the notified polymer will not pose a significant risk to public health when used as intended

## **Environmental Effects**

The notified polymer will be combined 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 lacquer 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.

The notified polymer in waste from spills, equipment cleaning and drum recycling 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. The notified polymer in overspray will also be disposed of in landfill. The notifier indicates that incineration of waste may also occur. Approximately 3.7 tonnes of the notified polymer will be released to the environment per annum.

The notified polymer is not water soluble and therefore will not be mobile in either the terrestrial or aquatic compartments. As a consequence of its cationic nature, the notified polymer is expected to eventually associate with the soil matrix and sediments. The notified polymer is not expected to cross biological membranes due to its high molecular weight and low water solubility and is therefore not expected to bioaccumulate. Furthermore, ecotoxicity data indicates the notified polymer is not toxic to fish and does not significantly inhibit the cell multiplication of *Pseudomonas* up to the limit of its water solubility.

The notified polymer is not likely to present a hazard to the environment when it is stored, transported and used in the proposed manner

## RECOMMENDATIONS

### *Control Measures*

#### Occupational Health and Safety

- Employers should implement the following engineering controls to minimise occupational exposure to Anti-Terra 204 containing the notified polymer:
  - enclosure of mixing tanks during formulation to prevent exposure to aerosols
  - local exhaust ventilation during transfer of notified polymer from drum to mixing tank.
- Employers should implement the following safe work practices to minimise occupational exposure during handling of Anti-Terra 204 containing the notified polymer:
  - avoid splashing and generation of aerosols during transfer of Anti-Terra 204 to mixing tank
  - for use of products containing the notified polymer, minimise the use of spray during cleaning operations
  - workers using spray products containing the notified polymer be instructed in their proper handling and use, including information about the additional risks posed by spray application and heat
  - application of spray containing the notified polymer should be in accordance with the NOHSC *National Guidance Material for Spray Painting*.

- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to Anti-Terra 204 containing the notified polymer:
  - gloves
  - overalls
  - eye protection
  - respirator (during spray painting).

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

- Employers should ensure that NOHSC Exposure Standards for all of the components of the final paint mix are not exceeded in the workplace.
- 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(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

---

### Component in Uvecoat 3002 Summary Report Reference No: NA/977

---

UCB Chemicals Asia Pacific (ACN 007 415 714) of 19 Potter Street Cragieburn VIC 3064 has submitted a limited notification statement in support of their application for an assessment certificate for the polymer, Component in Uvecoat 3002. The notified polymer is intended to be used as a component of a basic resin, which will be reformulated into a powder-coating product. Approximately 1 tonne of the product containing the notified chemical will be imported on the first year, increasing to 200 tonnes in the next four years.

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

#### Hazard Assessment

No toxicity data for the notified polymer were submitted. Toxicological endpoints obtained from polymers, which are chemically related to the notified polymer were provided for the assessment of the potential health effects of the notified polymer. By analogy, the notified polymer has low acute oral toxicity ( $LD_{50}$  rat >2000 mg/kg). There was no evidence of skin and eye irritation reported in rabbits.

The notified polymer has high molecular weight, which indicates that it would be unlikely to cross biological membranes readily. Based on the limited toxicological endpoints provided, and considering the high molecular weight and low levels of residual monomers present, the notified polymer is unlikely to be a hazardous substance according to the NOHSC *Approved Criteria for Classifying Hazardous Substances*.

#### Occupational Health and Safety

##### Transport and storage

Except in the event of accident, the risk of adverse health effects during transport and storage is limited, since workers are only expected to handle sealed bags containing the notified polymer.

##### Coating formulation

Coating formulation will be carried out predominantly in closed and automated systems. Therefore, inhalation, dermal and ocular exposure to the notified polymer is limited during extrusion process, and when milling and packaging of coating powder. Similarly, intermittent exposure to dust is possible during quality testing, cleaning and maintenance of equipment. The low intrinsic hazard of the notified polymer, largely enclosed and automated operations involved, and the use of personal protective equipment would ensure low occupational risk.

##### Coating application

Applicators will potentially be exposed to the notified polymer in the coating product when manually loading the hoppers, which automatically feed the spray gun, on disposal of empty bags and when collecting oversprayed coating. However, exhaust ventilation is used in the loading area, and oversprayed powder is collected using dust-tight vacuum cleaners. All coating application is carried in spray booths with exhaust extraction system. The use of

personal protective equipment and ventilation systems to maintain exposure levels below the relevant occupational exposure standards, are adequate to prevent the risk of adverse health effects to workers.

### **Public Health**

There are no consumer uses for the notified polymer and it is not available to the public. The spray operation ensures that the sprayed-on powder layer becomes an integral part of the coated article. After curing, the notified polymer becomes inaccessible to human contact. The likelihood of public exposure and the risk of adverse health effects are negligible.

### **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 substrates coated with the polymer are likely to be recycled (metal), incinerated, or be placed into landfill at the end of their useful life. Incineration will destroy the polymer and convert it to water vapour and oxides of carbon. In landfill, the notified polymer is expected to associate with the soil matrix and sediments.

No release of the notified polymer into the aquatic environment is expected either during formulation or application. Should the notified polymer enter the aquatic environment through accidental spills, it is not expected to cross biological membranes due to its high molecular weight and is therefore is not expected to bioaccumulate.

On the basis of 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 notified polymer when used in powder coatings:
  - Local exhaust ventilation during spraying, filling of hoppers, reclaiming powder and clean-up.
  - Enclosed and automated spray application.
  - Spray painting booths and equipment should be in accordance with Australian Standard AS3754-1990, *Safe Application of Powder Coatings by Electrostatic Spraying*.
- Employers should implement the following safe work practices to minimise occupational exposure to the notified polymer when used in powder coatings:
  - Avoid generating dusts, when opening powder coating packages, loading hoppers, reclaiming powder and cleaning equipment.
  - Precautions must be taken to avoid sources of ignition, e.g. use of earthing leads.

- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified polymer when used in powder coatings:
  - anti-static overalls
  - non-insulating gloves
  - anti-static footwear
  - dust respirators or air fed respiratory equipment

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 controlled incineration in accordance with local and national regulations.

#### Storage

- Store and handle in accordance with recommendation in the MSDS.

#### Emergency procedures

- Spills/release of the notified polymer should be contained and placed in suitable 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:

- (1) 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

---

**Nalco 73199**  
**Summary Report**  
**Reference No: NA/984**

---

Nalco Australia Pty Ltd (ACN 000 424 788) of 2 Anderson St Botany NSW 2019 has submitted a standard notification statement in support of their application for an assessment certificate for Nalco 73199. The notified chemical is intended to be used as part of the corrosion inhibitor product for cooling water systems. Up to 50 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 toxicological data for the notified chemical Nalco 73199 are not available. The toxicological data of a chemical analogue are presented and is based on a summary of peer reviewed articles. It is apparent from these sources that the analogue is harmful on ingestion (LD50 = 566-909mg/kg bw) and inhalation (LC50, 3 hr = 1.91 mg/L). It has a low dermal toxicity in rabbits. It is an eye irritant but not a skin irritant in the rabbit. There is no evidence of sensitisation in guinea pig (adjuvant test). The analogue was shown to have mutagenic potential in bacteria.

On the basis of the available data, the analogue, and by analogy the notified chemical, is determined to be hazardous according to the *NOHSC Approved Criteria for Classifying Hazardous Substances*. It is classified as Harmful (Xn) and Irritant (Xi):

- Risk phrases: R20/22 – Harmful by inhalation and if swallowed, R36 – Irritating to eyes
- Safety phrases: S25 – Avoid contact with eyes, S26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice, S39 – Wear eye/face protection.

##### **Occupational Health and Safety Assessment**

Transport and storage workers will only be exposed to the notified chemical in the event of an accident or damage to packaging. Therefore, the occupational health risk posed by the chemical to this group of workers is considered negligible.

Repackaging/reformulation workers are expected to wear overalls, chemical resistant gloves and splash goggles when handling the chemical solution (containing <50% notified chemical) and cleaning equipment. Decanting of the solution into the blending vessel or alternate containers will take place in a well-ventilated area and via an automatic pumping system. In addition, the vessel is designed so that any fumes and vapours generated will be removed through ventilation. Workers may experience dermal exposure through drips, spills and splashes. Considering the engineering controls and personal protective equipment (PPE), direct exposure (via any routes) is unlikely. The risk of adverse health effects is determined to be low.

QC chemists may come into contact with the notified chemical through drips, spills and splashes when sampling and analysing the chemical. They will wear laboratory coats, gloves

and safety glasses. Given the training they receive, the anticipated low exposure to the notified chemical and PPE worn, the risk of adverse health effects is determined to be low.

At the user sites, sales representatives and site operators will be potentially more frequently exposed to the notified chemical than other worker categories, predominantly via the dermal route. It is recommended they wear adequate PPE including overalls, chemical resistant gloves and chemical splash goggles. Based on the expected low dermal toxicity and irritation of the chemical, the implementation of safe work practice and appropriate PPE, a significant health risk is not anticipated.

### **Public Health Assessment**

The importation, preparation and use of the notified chemical are not activities in which the public will be involved. Contact is likely to be limited to transport or industrial accidents. The most likely contact will be dermal. On the basis of the above information and the low toxicity of the notified chemical, it is considered that the notified chemical will not pose a significant risk to public health when used as proposed.

### **Environmental Assessment**

The intended use pattern of the notified chemical is expected to result in the majority of the chemical being eventually released to the environment. However, this will be in dilute manner as the notified chemical contained within the water treatment solution released from cooling towers will be at a low concentration. The company expects further dilution as well as adsorption will occur at treatment plants. Discharge from the on-site treatment sites is expected to contain the notified chemical at a concentration of <0.06 ppm. Subsequent treatment at local sewage treatment plants would further dilute and remove the notified chemical to very low concentration levels. If the notified chemical is used at other sites that do not have on-site treatment plants then environmental exposure is still expected to be low since the chemical is only expected to be used at a maximum concentration of 2 ppm.

Furthermore, the ecotoxicity data provided indicates the notified chemical is likely to be practically non-toxic to slightly toxic to fish and slightly toxic to daphnia and low toxicity to algae is likely. As a worst case, daphnia are expected to be the most sensitive species with a PNEC of 0.12 mg/L.

In a worst case based on maximum annual imports of 40 tonnes/annum, all of which is released to sewer and assuming that none is removed during sewage treatment processes, 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 38 µg/L.

Amount of entering sewer annually	40000 kg
Population of Australia	19 million
Amount of water used per person per day	150 L
Number of days in a year	365
Estimated PEC	38 µg/L (38 ppb)

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 3.8 µg/L. If the notified chemical were to be used in one major capital city, such as Sydney (pop. 3500000), the PEC in the receiving waters would be 20.8 µg/L.

The PEC/PNEC ratio for the aquatic environment, assuming nationwide use, is 0.03 and use in one major capital city, is 0.17. These values are significantly less than 1, indicating no immediate concern to the aquatic compartment.

No ecotoxicological data was provided for terrestrial organisms.

Wastes containing the notified chemical including residues from imported drums, from formulation and sludge will be disposed of in landfill and are expected to be immobile. Even though the notified chemical is soluble in water, it will be slowly adsorbed to soil and sediment.

Therefore, the environmental exposure and overall environmental hazard from the notified chemical is expected to be low.

## RECOMMENDATIONS

### Regulatory controls

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

The notified chemical is determined to be hazardous and classified as Harmful (Xn) and Irritant (Xi) with the labelling details as follows:

- Risk phrases: R20/22 – Harmful by inhalation and if swallowed,  
R36 – Irritating to eyes
- Safety phrases: S25 – Avoid contact with eyes, S26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice, S39 – Wear eye/face protection.

### Control Measures

#### Occupational Health and Safety

- Employers should implement the following engineering controls to minimise occupational exposure to the notified chemical:
  - Automatic pumping equipment
  - Well ventilated areas for product packaging/reformulation
- Employers should implement the following safe work practices to minimise occupational exposure to the notified chemical:
  - Adequate induction and training programs for workers handling the notified chemical
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified chemical:
  - Overalls/laboratory coats,
  - Chemical splash goggles; and

- Chemical resistant gloves (where appropriate).

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 to landfill.

#### Emergency procedures

- Spills/release of the notified chemical should be contained as described in the MSDS (ie soak up with absorbent material and transfer to a sealable, properly labelled waste container) and the resulting waste is 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:

- (1) 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

---

### Strontium Aluminate Summary Report Reference No: NA/989

---

SLE (Australia) Pty Ltd (ABN 43 076 351 310) of 32 Shearson Crescent Mentone VIC 3194 has submitted a standard notification statement in support of their application for an assessment certificate for strontium aluminate (lanthanide doped). The notified chemical is intended to be used as a luminescent pigment in terrazzo pavers and fabric dyes, after encapsulation in microspheres of an inert matrix. Approximately 200 tonnes of the notified chemical will be imported or locally manufactured per annum for each of the first five years, with approximately 90 % of the finished pigment being exported.

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

#### Hazard Assessment

Toxicological data were submitted for the product, Luxalum GID 300, which contains a high proportion (potentially > 60 % w/w) notified chemical, in a form in which it is encapsulated in an inert matrix and has a low bioavailability. The toxicity for the notified chemical itself may be higher than indicated by the toxicity results for the product. The notified chemical is likely to be sparingly soluble, and act as a source of strontium, aluminium and lanthanide ions in biological systems. The toxicity of the notified chemical may be estimated from the known toxicity of these elements.

The product used in the toxicity testing contains the notified chemical in an inert matrix, and the results of the tests reflect this. The product has low acute oral and dermal toxicity to rats, and is not irritating to rabbit skin or sensitising to guinea pig skin. It is a slight irritant to rabbit eyes, with iris and conjunctival effects which cleared by 72 hours. These effects are likely to be due to mechanical irritation from insoluble particulate matter. In a 28 day repeat dose oral toxicity study, no treatment related adverse effects were seen at the only tested dose of 1000 mg/kg bw/day. It was found to not be genotoxic in an in vitro and an in vivo test. No report on the inhalation toxicity of the notified chemical was provided by the notifier.

The constituent ions of the notified chemical (strontium, aluminium and deliberately added impurities) are all of low acute oral toxicity, and are not likely to produce irritant effects unless in reactive forms. Soluble aluminium salts have a NOHSC exposure standard of 2 mg/m<sup>3</sup>. The notifier stated that no adverse effects have been seen in workers handling the notified chemical.

Based on the information provided by the notifier, the notified chemical is not classified as a hazardous substance in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substance*.

## Occupational Health and Safety

When the notified chemical is ground to a fine powder (6 - 70 micron diameter), there is possible inhalation exposure, and also ocular exposure to particulate matter. The inhalation of airborne dusts will be reduced to a great extent by the high specific gravity of the notified chemical, the small proportion in the respirable size range, and the use of local exhaust ventilation. Based on the toxicity of the constituent ions of the notified chemical, minimal health risks are expected if precautions are taken to maintain the airborne dust levels at below the NOHSC exposure standard for soluble aluminium compounds of  $2 \text{ mg/m}^3$ .

After incorporation of the notified chemical into the product Luxalum GID 300, exposure by inhalation and ocular dust contact become more probable, due to the low specific gravity of the product. The toxicity is however reduced by encapsulation, and the exposure standard for general dust of  $10 \text{ mg/m}^3$  should be applied for the product. The notifier stated that the blender, grinder, reactor, screening and drum filling areas are under local exhaust ventilation, and that workers will wear industrial clothing, chemical goggles or face shields, gloves and a particulate respirator.

No data were provided for workers handling the product in production of dyes or glowstones. For these workers, there will be potential inhalation and ocular exposure during weighing and addition of the product to the mixing vessels where the end use products are produced. Similar precautions to those described above for workers handling Luxalum GID 300 during manufacture should be used, and the exposure standard for general dusts observed. Following incorporation into the products, the likelihood of production of airborne dusts is very low, and as the notified chemical is encapsulated, little occupational risk is likely.

## Public Health

The notified chemical will be encased in microspheres to make Luxalum GID 300 which are further mixed with polyester resin chips at 5% Luxalum GID 300 for incorporation into terrazzo pavement, or further mixed with an aqueous acrylic emulsion at 60% Luxalum GID 300 for incorporation into a dyestuff for application to safety vests. These applications render the notified chemical inaccessible to human contact. It is only in the early stages of its life cycle before it is encased, that the notified chemical may be accessible to human contact following a transport accident. The low likelihood of contact with the notified chemical, the low toxicity of the notified chemical and of Luxalum GID 300 suggest that it will not pose a significant hazard to public health when used in the proposed manner.

## Environmental Effects

It is estimated that a maximum of 2.5 tonnes per annum of the notified chemical could be released during its manufacture, subsequent formulation into Luxalum G.I.D. 300 microspheres, and the down stream use of this product in the production of terrazzo pavers and in dyeing of fabric. The majority of the released material will be disposed of into landfill, although a small amount (estimated as 100 kg per annum) may be released into the sewer during production of pigment formulations for dyeing. Although the released chemical will very likely slowly dissolve to liberate strontium and lanthanide ions, a worst case scenario indicates that the Predicted Environmental Concentrations of  $\text{Sr}^{2+}$  and the lanthanide ions together would be 3.6 milligrams per litre and 8 micrograms per litre respectively.

At the end of their useful lives the terrazzo pavers and fabrics containing the notified chemical would be placed into landfill, and in this situation the notified chemical will be slowly released as the pavers and fabric are broken down.

Overall most of the notified chemical will eventually be disposed of into landfill, and the component metals will be slowly liberated as the crystal structure of the strontium aluminate breaks down. However, the release of these elements will be diffuse and at relatively low levels. The lanthanide elements would associate as hydroxides with soils and sediments.

When incorporated into microspheres in Luxalum G.I.D. 300, the notified chemical has been shown to be non toxic to Australian bass (a saltwater species), with a LOEL of 1 g/L. However, it is uncertain whether the observed effects were physical in origin (eg. microspheres entering the gills) or due to chemical toxicity from dissolved strontium or lanthanide metals. However, the chemical is unlikely to enter water courses at concentrations as high as 1 g/L, so no adverse environmental effects on fish are anticipated from usage of the material as described in the notification.

On the basis of the expected low environmental exposure and relatively high LOEC for the Australian bass fish (the one species for which ecotoxicity data was provided), use of the new chemical as indicated in the notification is expected to have a low environmental hazard. The chemical is not considered to pose a risk to the environment based on its reported use pattern.

## RECOMMENDATIONS

### *Control Measures*

#### Occupational Health and Safety

- Employers should implement the following engineering controls to minimise occupational exposure to the notified chemical in pure particulate form or in the product Luxalum GID 300:
  - Local exhaust ventilation should be used at all points where grinding or handling of dry powder occur.
- Employers should implement the following safe work practices to minimise occupational exposure during handling of the notified chemical in pure particulate form:
  - The NOHSC exposure standard of 2 mg/m<sup>3</sup> for soluble aluminium compounds should be observed.
- Employers should implement the following safe work practices to minimise occupational exposure during handling of the product Luxalum GID 300:
  - The NOHSC exposure standard of 10 mg/m<sup>3</sup> for dusts in general should be observed.
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified chemical in pure particulate form or in the product Luxalum GID 300:
  - Safety goggles or face shield, industrial clothing, gloves;

- If engineering controls do not reduce dust levels to below the appropriate exposure standards, particulate respirators should be used.

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:

- (1) Under Section 64(1) of the Act; if
  - further data or evidence relating to adverse effects on aquatic life forms becomes available.

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.

## 5 PUBLICATION SUMMARY REPORT

---

### KC6451 Summary Report Reference No: NA/997

---

Akzo Nobel Pty Limited and BASF Akzo Nobel Automotive OEM Coatings Pty Ltd both of 51 McIntyre Road, Sunshine, VIC 3020 have submitted a joint limited notification statement in support of their application for an assessment certificate for KC6451.

The notified chemical will not be manufactured in Australia. It will be imported as KC6451 in 20 kg plastic pails and transported to the notifier's reformulation site where it is reformulated into an aqueous emulsion. The intermediate emulsion is blended with other ingredients to form a finished emulsion, which is transported to car manufacturing facilities and applied to car bodies as a dipping primer in an automated paint application process.

The import volume is less than one tonne per year for the first 5 years.

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

#### Hazard Assessment

No toxicological data have been provided for the notified chemical. A published summary on the acute toxicity reported an oral LD<sub>50</sub> of >5000 mg/kg in rats. The notified chemical was not a skin irritant, but was severely to moderately irritating to eyes, indicating that it is a hazardous substance in accordance with the National Occupational Health and Safety Commission's (NOHSC) *Approved Criteria for Classifying Hazardous Substances*, with the risk phrase R36 assigned. The mean particle size is 76 µm and the lower 10<sup>th</sup> percentile is 16.5 µm, indicating that particles are in the inspirable range with probably few in the respirable range (<10%).

The Material Safety Data Sheet (MSDS) for the notified chemical stated that it is a severe eye irritant. Skin contact may cause mild skin irritation and inhalation of high concentrations may cause irritation to the nose, throat and respiratory tract.

The coating solution containing KC6451 is not classified as a Dangerous Good. It contains 2-butoxyethanol and nitric acid at below the lowest concentration cut-off level. The notifier classified the finished emulsion as not hazardous in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*. The MSDS for the emulsion states that it is not expected to be acutely toxic by ingestion, splashes to the eye may cause mild irritation and inhalation of solvent vapour may cause nose and throat irritation. The MSDS did not have information on long term effects.

NOHSC has allocated exposure standards for the following chemicals contained in the finished emulsion:

Methyl isobutyl ketone:	50 ppm TWA <sup>1</sup>
2-Butoxyethanol <sup>φ</sup>	25 ppm TWA sk <sup>2</sup>
Nitric acid:	2 ppm TWA and 4 ppm STEL <sup>3</sup>

## Occupational Health and Safety

KC6451 is imported for formulation into automotive primer. The intermediate and final aqueous emulsions are formulated in closed vessels: the intermediate chemical 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 car manufacturing facilities. Incidental exposure to the notified chemical may occur during transport of KC6451 to storage tanks or mixing vessels.

Exposure to the chemical during processing and maintenance and exposure to laboratory workers may occur from contact with the fine white crystals of the notified chemical and the diluted chemical emulsion or final paint additive containing <1% notified chemical. A risk of eye irritation exists during handling of the notified chemical, weighing and addition to mixer. Given the engineering controls, personal protective equipment (PPE) worn by workers (ie. chemical resistant gloves, coveralls, and goggles, and if required cartridge respirators when handling the notified chemical), and the low concentration of the notified chemical in the emulsions, the overall health risk for workers involved in chemical emulsion formulation is assessed as low.

The notified chemical 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 chemical 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 is assessed as low.

The paint additive containing the notified chemical will be mixed in a tank, which will be used to coat automotive bodies by dipping. At this point, exposure to diluted notified chemical (<1%) 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 low concentration of notified chemical in the paint, the health risk to workers involved in end use would be assessed as low.

Following curing of the paint, the chemical will be cross linked with other paint components to form a high molecular weight stable film. In this form, the chemical is essentially

---

<sup>1</sup> TWA: Time weighted average concentration of a substance over an eight-hour working day for a five day working week.

<sup>φ</sup> ACGIH revised the exposure standard for 2-butoxy ethanol to 20 ppm (TWA)

<sup>2</sup> Skin notation

<sup>3</sup> STEL: Short term exposure limit.

unavailable for absorption and thus the health risk to workers from the notified chemical after paint curing would not be significant.

### **Public Health**

Public exposure to the notified chemical will most likely be limited to exposure occurring following transport accidents or to contact with it as an environmental contaminant. Such accidents are not likely and the closely regulated nature of waste disposal from assembly plants will mean that environmental contact is also not very likely. The notified chemical is not volatile. Any exposure that does occur by these means is likely to be dermal and of an infrequent and transient nature. In its application, the notified chemical is a bound component of the primary coating of vehicle bodywork and is not accessible to human contact. The primary coating is ultimately covered by several other coats of paint and contact with the notified polymer is further prevented. The low likelihood of exposure to the notified chemical suggests that the notified chemical will not pose a significant hazard to public health when used as proposed.

### **Environmental Effects**

The majority of the notified chemical will become a minor component of an emulsion to be used as an automotive primer. When the primer is cured onto the car bodies, the notified chemical will present no hazard to the environment because it will become encapsulated into a hard durable coating and be immobilised. At the end of their useful lives car bodies coated with the primer will be disposed of to landfill or recycled for steel reclamation. During recycling of the car bodies the notified chemical would be converted to the insoluble tetravalent ion and oxides of carbon.

A small amount of notified polymer contained in waste produced by spills and equipment cleaning during coating formulation and application would be disposed of to landfill. Any notified chemical released to waste water would adsorb to solids and be removed by flocculation at the onsite treatment plant. The flocculated solids would be disposed of to landfill.

Despite being readily water-soluble, the notified chemical is expected to complex with organic matter and carbonate or be converted to its insoluble ion in the environment

## **RECOMMENDATIONS**

### *Regulatory Controls*

#### Hazard classification and labelling

- Use the following risk and safety phrases for the notified chemical:
  - risk phrase: R36- Irritating to eyes
  - safety phrases: S24/25- Avoid contact with skin and eyes  
S22- Do not breathe dust

The risk phrase R36 should be used for products/mixtures containing  $\geq 20\%$  of notified chemical.

- The MSDS for the notified chemical should state that it is classified as a hazardous substance based on the *NOHSC Approved Criteria for Classifying Hazardous Substances*.

### *Control Measures*

#### Occupational Health and Safety

- Employers should implement the following engineering controls to minimise occupational exposure to the notified chemical:
  - Enclosed fixed transfer lines for transfer operations;
  - Enclosed mixing vessels;
  - Exhaust ventilation during weighing, re-formulation, quality control analysis, storage and paint application;
- Employers should implement the following safe work practices to minimise occupational exposure during handling of the notified chemical, aqueous emulsions and final paint:
  - Avoid generation of dust (notified chemical);
  - NOHSC exposure standards for all of the components of the final paint mix should not be exceeded in the workplace;
  - Prevent splashes and spills.
- Employers should ensure that the following PPE is used by workers to minimise occupational exposure to the notified chemical:
  - Safety glasses or goggles, chemical resistant industrial clothing and footwear, and, impermeable gloves (PVC or rubber). Where engineering controls and work practices do not reduce particulate exposure to safe levels, eg when weighing and adding chemical to mixers, a cartridge respirator should also be used;
  - 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:

- (1) Under sub-section 64(1) of the Act:  
Full toxicological package if volume introduced per year exceeds one tonne;

- (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

---

### 1,3-Propanediamine, N,N"-1,2-ethanediylbis-, reaction products with cyclohexane and peroxidized N-butyl-2,2,6,6-tetramethyl-4-piperidinamine-2,4,6-trichloro-1,3,5-triazine reaction products (Flamestab NOR 116FF/TKA 45009)

#### Summary Report Reference No: NA/999

---

Ciba Specialty Chemicals Ltd of 235 Settlement Road Thomastown VIC 3074 has submitted a standard notification statement in support of their application for an assessment certificate for 1,3-Propanediamine, N,N"-1,2-ethanediylbis-, reaction products with cyclohexane and peroxidized N-butyl-2,2,6,6-tetramethyl-4-piperidinamine-2,4,6-trichloro-1,3,5-triazine reaction products (Flamestab NOR 116FF/TKA 45009). The notified chemical is intended to be used as a flame retarder and light stabiliser in plastic products. Up to 10 tonnes of the notified chemical will be imported per annum for the first five years.

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

#### Hazard Assessment

The notifier provided a number of toxicological studies in support of this application. The notified chemical exhibited low acute oral and dermal toxicity in rat. It was not irritating to the skin of rabbits, nor did it sensitise the skin of guinea pigs in a maximisation test. However, it was a slight eye irritant in rabbits. The NOAEL for the notified chemical was determined to be >1 000 mg/kg/day (highest dose) in a repeat dose study in rat. The notified chemical was negative in bacterial mutagenicity assays with *Salmonella typhimurium* and *Escherichia coli*. In another *in vitro* genotoxicity test, it was not clastogenic in Chinese hamster ovary cells. The high molecular weight of the chemical will minimise absorption across biological membranes.

Based on the data provided, the notified chemical is not classified to be a hazardous substance under the NOHSC *Approved Criteria for Classifying Hazardous Substances* and will not require labelling with specific risk phrases.

#### Occupational Health and Safety

The notified chemical will be imported as a commercial free-flowing powder. It will be mixed and extruded with other ingredients to give a masterbatch suitable for use in plastic manufacture. During further processing into finished articles and films, the notified chemical is bound within a polymer (plastic) matrix.

There is potential for dermal exposure when handling the notified chemical with eye contamination also possible. The potential for inhalation exposure is low because little of the powder is in the respirable range as the particles tend to be aggregated.

During masterbatch production, operators opening the bags, weighing and adding the notified chemical to containers in preparation for mixing and extrusion may experience dermal exposure to the notified chemical. Workers involved in the processes such as extrusion and bagging of plastic pellets would have low exposure since after compounding in the extruder, the notified chemical is encapsulated in the masterbatch pellets. The masterbatch formulation,

which contains up to 15% notified chemical, is formulated as pellets, which should minimise worker exposure to chemical dust and therefore the risk of eye irritation. Local exhaust ventilation is fitted at the weighing, dispensing, blending and packing areas. Workers involved in the production of the masterbatch pellets will wear gloves, safety glasses and overalls. Respiratory protection is available when the local exhaust ventilation is inadequate. Considering the low toxicity of the notified chemical, low concentrations in the masterbatch together with these industrial controls and personal protective equipment, the occupational health risk to workers is low.

At the customer sites, the masterbatch pellets will be mixed with other ingredients and processed to form plastic articles and films. Since the notified chemical is encapsulated within the polymer matrix in masterbatch, occupational exposure to the notified chemical cannot occur before or after the articles are made. Thus, the health risk to operators of injection moulding or film-making machines arising from exposure to the notified chemical is very low. Similarly, the health risk to end users is low.

Under normal working conditions, storage and transport workers will be handling sealed packages of products containing the notified chemical. There are negligible occupational health risks for these workers.

### **Environmental Effects**

It is not expected that the notified chemical will constitute a hazard to the environment when used as a light stabiliser/flame retardant additive in polymer products in the manner indicated by the notifier.

A maximum of 500 kg of the chemical may be placed into landfill each year with waste resulting from formulation and manufacture of polymer masterbatches as well as from end use injection moulding of polymer into final products such as plastic pipe and other articles. At the end of their useful lives, old pipe and other articles containing the chemical would most likely be placed into landfill although some may be recycled for recovery of the polymers.

After incorporation into polymer articles, the notified chemical is bound into the polymer matrix with little potential for release during the service life of finished articles, and consequently little release of the chemical to the environment is expected during the service life of polyethylene pipes and other articles.

However, once placed into landfill it is expected that the polymer matrix would slowly degrade and broken down through the slow abiotic and biological processes operative in these situations, and this may lead to release of the chemical. It is probable that the liberated chemical would become associated with the soil, and here it would slowly degrade through biological and abiotic processes. The notified chemical will be mineralised to water and oxides of carbon and nitrogen.

Very little of the notified chemical is expected to be released to the water compartment, but the available ecotoxicity information indicates that it is not toxic to aquatic species in any trophic level up to the limit of its water solubility. The chemical is not expected to bioaccumulate, and no hazard to the aquatic compartment is likely when it is used as a light stabiliser/flame retardant in polymer products as indicated.

## RECOMMENDATIONS

### *Control Measures*

#### Occupational Health and Safety

- Employers should implement the following engineering controls to minimise occupational exposure to the notified chemical:
  - Local exhaust ventilation at the formulation sites.
- Employers should implement the following safe work practices to minimise occupational exposure during handling of the notified chemical:
  - Spillage of the notified chemical should be avoided. Spillages should be cleaned up promptly then be put into containers for disposal;
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified chemical:
  - Gloves
  - Safety glasses
  - Overalls
  - Respirator (when ventilation is inadequate).

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 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.

## 7 PUBLICATION SUMMARY REPORT

---

### Polymer in Disperbyk-184 Summary Report Reference No: NA/1000

---

Clariant (Australia) Pty Ltd, 675 Warrigal Rd Chadstone VIC 3148 and Nuplex Industries (Aust) Pty Ltd, 49 – 61 Stephen Rd Botany NSW 2019 have submitted a limited notification statement in support of their application for an assessment certificate for Polymer in Disperbyk-184. The notified polymer is intended to be used as a stabiliser for pigments for automotive paints and a component of a pigment dispersion for use in leather dyeing. Less than 20 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 was found to be of low acute oral toxicity in rats and was a slight skin and eye irritant in rabbits. It would not be classified as a hazardous substance according to the NOHSC *Approved Criteria for Classifying Hazardous Substances*. The notified polymer's high molecular weight and low levels of residual monomers, low molecular weight species and hazardous impurities are unlikely to render it a hazardous substance according to the NOHSC criteria.

#### Occupational Health and Safety

##### Transport and Storage

There is little potential for significant occupational exposure to the notified polymer in the transport and storage of the polymer solution, paint components or leather treatment solution containing this polymer unless the packaging is breached. The risk of adverse effects in these workers is minimal.

##### Paint Formulation and Application

During the reformulation of paints, the main exposure route for the notified polymer will be dermal. The polymer is not expected to be hazardous by dermal exposure as the high molecular weight will preclude absorption through the skin. Protective measures used to prevent exposure to the solvents should provide sufficient protection against the notified polymer. The imported polymer solution contains dipropylene glycol monomethyl ether which has a NOHSC exposure standard of 100 ppm TWA and 150 ppm STEL with a skin notation. This exposure standard is set to prevent objectionable irritation and to provide a safety factor for central nervous system impairment. The imported solution also contains 1,2-propanediol which is stated to be a moderate skin irritant in humans.

The final paint mix containing < 3% notified polymer could contain a variety of additional ingredients, including solvents that may introduce additional human health hazards. However, the manufacturer's technical data sheet comparing various "Disperbyk" pigment dispersing additives suggests that Disperbyk 184 is intended primarily for aqueous systems. The spraying procedure produces a dense aerosol of paint particles which could adversely affect human health. The presence of many potential and actual hazardous substances in paint

formulations 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*. Employers will need to adhere to any relevant exposure standards. 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, pigments and other paint resins. If conducted at an OEM site, spraying largely would be done robotically but if at a car repairers mainly would be done manually.

Other methods of coating such as roller or dipping methods normally would be conducted in specially designed containment and worker exposure would be minimised.

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

The paints containing the notified polymer can contain flammable solvents. Precautions are commonly taken to avoid sources of ignition, e.g. use of earthing leads. Operators typically wear antistatic overalls and footwear.

Similar considerations apply in the disposal of the polymer. The wastes containing the notified polymer may be hazardous substances on the basis of the solvent and other resin content, and the precautions taken on the basis of these additional materials should be adequate for protection from the notified polymer. In addition, much of the polymer will be cross-linked, hardened and immobilised by the time of disposal.

#### Leather Treatment

As noted in the section on paint reformulation (see above), mixing and milling of the pigment dispersion products for use in tanneries should result in mainly dermal exposure to workers with the main hazard being the dipropylene glycol monomethyl ether content of Disperbyk 184. The notified polymer is contained in the pigment dispersion products at less than 10%.

At the tanneries, pigment dispersion product is reformulated into a leather treatment solution with the notified polymer present at less than 1%. This solution is applied to hides by spray or roller in specialised equipment and the hides are manually transferred to a drying oven. Exposure to the various solutions is possible from drips and spills during pumping and QC and from manual operations. PPE is used to protect against exposure to the various components of the solutions and this should preclude exposure to the notified polymer and there is negligible risk of adverse health effects from these operations. Once the polymer is dried onto the leather it is not bioavailable.

#### Public Health

Products containing the notified polymer are not available for sale to the public. Members of the public may make dermal contact with car paints or leather containing the notified polymer. However, the risk to public health from contact with the notified polymer will be low because it is used at low concentrations and is bound within the paint matrix on the leather surface.

## Environmental Effects

The majority of the notified polymer will be combined with other paint components to form a very high molecular weight and stable paint film. As the coating degrades over time, any fragments, chips and flakes of the lacquer 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.

The notified polymer used in the pigment dispersion for use on leather would also react with the other treatment components and the leather itself to form an inert matrix, thus posing like risk. The notified polymer will ultimately be disposed of with the leather article at the end of its useful life. It is likely that the article will be disposed of to landfill.

While the notified polymer is moderately toxic to fish and algae, it is unlikely to be released to the aquatic environment. If for some reason, eg accident, it is released into the environment, it will ultimately degrade. It will pose little risk to the environment.

## RECOMMENDATIONS

### *Regulatory Controls*

#### *Control Measures*

#### Occupational Health and Safety

- 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.
- If paints containing the notified polymer contain flammable solvents work practices should be employed to minimise the likelihood of ignition, eg use of earthing leads and the wearing of antistatic overalls and footwear.

#### Environment

#### Disposal

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

#### Emergency procedures

- Spills/release of the notified polymer should be handled by containment and absorption by an inert material (eg vermiculite or sand).

## **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(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

---

### Sodium Behenoyl Lactylate Summary Report Reference No: LTD/1001

---

Johnson and Johnson Pacific of Level 3, 1 Bay Street, Broadway NSW 2007 (ABN 73001121446) has submitted a limited notification statement in support of their application for an assessment certificate for Sodium Behenoyl Lactylate. The notified chemical is intended to be used as a component of moisturising creams. Approximately 112-170 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

No results on the acute toxicity of the notified chemical were provided by the notifier. A close analogue of the notified chemical has been extensively tested in repeat dose feeding studies in dogs and rats. The results with regards to effects on growth or relative liver weight were inconsistent and variable. The no-effect level was established at the 2% level (1000 mg/kg bw). The acceptable daily intake for man was established at a maximum of 20 mg/kg bw. The acute oral LD<sub>50</sub> for the notified chemical is expected to be greater than 25000 mg/kg in rats, based on the results for an analogue.

Human patch testing using products containing the notified chemical showed at most slight skin irritation. Eye irritation testing was not carried out. Human patch testing of products containing the notified chemical did not provide evidence of skin sensitising properties.

The Material Safety Data Sheet (MSDS) for the Eye Cream and the Face Cream stated that the products are not classified as hazardous according to NOHSC *Approved Criteria for Classifying Hazardous Substances*. The MSDS stated that the products may be discomforting to the gastrointestinal tract if swallowed in large quantities. The liquid may produce eye discomfort and excessive use or prolonged use may lead to defatting, drying and irritation of sensitive skin.

Based on the available data, the notified chemical is not classified as hazardous under the NOHSC *Approved Criteria for Classifying Hazardous Substances*.

##### Occupational Health and Safety

The notifier indicated that 4 warehouse workers and retail workers (estimated number not provided) will handle the products containing the notified chemical. The work will involve handling of the products in their retail packaging only, and in the case of workers apart from retail workers, in outer cartons as well. Retail workers will unpack cartons and handle individual containers. Even in the case of an accident, little exposure is expected due to the small package sizes.

The notified chemical is not expected to pose a significant risk to occupational health and safety due to the low occupational exposure and also to the low toxicity of the notified chemical.

## 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. Although members of the public will make frequent dermal contact and occasional accidental ocular contact with products containing the notified chemical, the risk to public health is considered to be minimal since the notified chemical is expected to be of low toxicological hazard and is present in cosmetic products at low concentrations.

## Environmental Effects

The notified chemical will not be produced in Australia and the imported finished products will not be reformulated or repackaged. The facial creams will be available from retail outlets for personal use. A small amount of cream will be applied around the eyes, or all over the face and neck, depending on the product. Ultimately, the cream will be washed off during bathing or showering, thus entering the sewer with the empty container being disposed of in the general household rubbish.

The behaviour of the notified chemical in the sewer is not known. However, it is likely that it will sorb to sludge or be degraded by abiotic and biotic processes in the treatment plant and in natural waters. Under the worst case scenario where 100% of the notified chemical is released to sewer and there is no removal or breakdown the Predicted Environmental Concentration in the receiving water would be 0.0163 µg/L (= 16.3 ng/L). This value is likely to be well below any aquatic toxicity levels for the notified chemical.

Due to its water solubility, the notified chemical is not likely to bioaccumulate.

Risk to the environment from proposed usage levels is likely to be low.

## RECOMMENDATIONS

### Control Measures

### Occupational Health and Safety

- 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.

### Emergency procedures

- Spills/release of the notified chemical should be handled by containment and wiping or absorbing with sand.

**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.

## 9 PUBLICATION SUMMARY REPORT

---

### Hardener LO Summary Report Reference No: STD/1003

---

Vantico Pty Ltd of 235 Settlement Road, Thomastown, Victoria 3074 has submitted a standard notification statement in support of their application for an assessment certificate for Hardener LO. The notified chemical is intended to be used as a component of an adhesive. Approximately 1-10 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

Toxicology studies on the acute systemic toxicity, and, skin and eye irritation potential of Hardener LO were not provided. However, based on the acute toxicity of analogue chemicals, it can be concluded that the notified chemical is harmful by the oral route and inhalation, slightly irritating to skin, and irritating to the eye. Acute dermal toxicity is expected to be low.

The skin sensitisation test conducted using Hardener LO showed that it is not a skin sensitiser. However, the applicant indicated that prolonged exposure to imported products containing Hardener LO can cause allergic reactions and sensitisation.

A close analogue of the notified chemical was tested in a repeat dose feeding study in rats at a very low dose. No significant indications of toxicity were found. The no observed effect level was established at 0.7 mg/kg bw/day (dose used in the diet). An *in vivo* genotoxicity study (mouse micronucleus test) showed no indications of genotoxic effects of the notified chemical. Toxicity information on analogue chemicals reported that N-Butyl mercaptan, tert-butyl mercaptan and 1-dodecylmercaptan were negative in the Ames test. N-Butyl mercaptan and tert-butyl mercaptan were not mutagenic in the mouse lymphoma forward mutation assay, while 1-dodecyl mercaptan was not mutagenic in this assay.

Based on the available data the notified chemical is classified as hazardous under the National Occupational Health and Safety Commission's (NOHSC) *Approved Criteria for Classifying Hazardous Substances*. The classification and labelling details are:

R20/R22: Harmful by inhalation and if swallowed

R36/38: Irritating to eyes and skin

##### Occupational Health and Safety

Dermal and ocular exposure can occur during certain formulation processes. However, given that exposure to significant amounts is limited because of the engineering controls and personal protective equipment worn by workers, the risk of adverse effects is low.

During end-use, hand/ocular contamination with the adhesive may occur (up to 12% notified chemical), particularly, when the adhesive product is mixed and applied by hand. Therefore,

there is some risk of eye irritation, and perhaps slight skin irritation arising from contact with the notified chemical during this process. Inhalation exposure to the notified chemical is not expected as it is not volatile. In order to minimise the risk of adverse health effects, workers using the hardener products containing the notified chemical should wear personal protective equipment including overalls, gloves and face shield/goggles. Organic vapour respirators should be worn if the area is poorly ventilated.

After application and once dried, the adhesive containing the notified chemical is cured into an inert matrix of the epoxy resin and is hence unavailable to exposure. Therefore, the risk of adverse health effects to cured material is minimal.

During transport and storage, the health risk to workers is not considered significant given the physical form of the product and the packaging.

### **Public Health**

Indirect exposure of the public to the notified chemical during transport or through environmental release is assessed as low. There is potential for public exposure to the notified chemical in Do-It-Yourself hardener products since the hardeners containing the notified chemical will be used in adhesives systems designed for use on wood, ceramic and glass surfaces. The public will only come into contact with the hardeners containing up to approximately 12% free hardener LO. Since the working concentration is low, the public exposure to the notified chemical by inhalation is minimal. The notified chemical has low dermal toxicity. Therefore, provided the public follows the recommended directions for use of the hardeners, the risk to public health will not be significant. As the residual hardener LO very quickly reacts with the epoxy resin (5-10 min) when mixed with the resin and then chemically binds into the cured polymer matrix, the potential for public exposure thereafter is negligible. On this basis, it is expected that the risk of the notified chemical to public health will be low.

### **Environmental Effects**

The reported use pattern of the notified chemical is likely to result in low environmental exposure. The notified chemical will initially be imported in ready-to-use hardeners, mostly intended for the retail market. The majority of the chemical will be chemically bound into the cured polymeric matrix of the adhesives in which it is used once the hardeners and resins have been mixed and applied. At the end of their useful lives articles adhered with the adhesive systems would be disposed of to landfill. A small proportion of unused chemical may also be disposed of to landfill.

A small amount of the chemical may be released should the notifier find that sales of the adhesive system justify local manufacture of the hardeners. A proportion of this waste may be disposed by landfill where the chemical may leach into the water compartment. The chemical is moderately toxic to daphnids and highly toxic to algae. While its toxicity to fish is unclear, there will be little if any release to water when imported in small adhesive containers. The chemical is not likely to bioaccumulate given its moderate water solubility and predicted low log Pow. The remainder of the waste may be incinerated, destroying the notified chemical. Overall the environmental hazard posed by the use of the notified chemical is expected to be low.

## RECOMMENDATIONS

### *Regulatory Controls*

- Use the following risk and safety phrases for the notified chemical:
  - R20/R22: Harmful by inhalation and if swallowed
  - R36/38: Irritating to eyes and skin
  - S36 Wear suitable protective clothing
  - S37 wear suitable gloves
  - S39 wear eye/face protection
  - S24 Avoid contact with skin
  - S25 Avoid contact with eyes

The risk phrases R20/22 and R36/38 should be used for products/mixtures containing  $\geq 25$  and  $\geq 20\%$ , respectively.

### *Control Measures*

#### **Occupational Health and Safety**

- Employers should implement the following engineering controls to minimise occupational exposure to the notified chemical during manufacture of the Adduct JW2184 and formulation of the hardener products:
  - Exhaust ventilation during formulation operations.
- Employers should implement the following safe work practices to minimise occupational exposure during handling of the notified chemical and hardeners:
  - Prevent splashes and spills
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified chemical:
  - Chemical resistant gloves, protective overalls, and goggles/faceshield. Organic vapour respirator if ventilation is not adequate.

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.
- 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.

#### **Environment**

##### Disposal

- The notified chemical should be disposed of by landfill or incinerated according to local regulations.

#### Emergency procedures

- Spills/release of the notified chemical should be handled by absorbing with inert material and collection into a sealed container 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.

## 10 PUBLICATION SUMMARY REPORT

---

### Adduct JW2184 Summary Report Reference No: LTD/1004

---

Vantico Pty Ltd of 235 Settlement Road, Thomastown, Victoria 3074 has submitted a limited notification statement in support of their application for an assessment certificate for Adduct JW 2184. The notified polymer is intended to be used as a component of an adhesive. Approximately 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

No toxicological data were available on the notified polymer. It has a NAMW greater than 1000 and there is a significant amount of residual monomer (12% Hardener LO). As the polymer has similar reactive functional groups to the monomers, the toxicity profile of the notified polymer is taken to be similar to Hardener LO.

The Material Safety Data Sheet (MSDS) for Adduct JW 2184 specified the risk phrase R36/38: irritating to eyes and skin. No information was provided on the chronic health effects. The oral rat LD50 was reported to be 3000 mg/kg.

Considering that the adduct itself is never isolated and contains Hardener LO as a residual monomer and based on the available data, the notified polymer (adduct) is classified as hazardous under the National Occupational Health and Safety Commission's (NOHSC) *Approved Criteria for Classifying Hazardous Substances*, with the risk phrase R36/38: irritating to eyes and skin.

The products Hardener HW 2934 and Hardener XD 4417 are classified as hazardous according to NOHSC *Approved Criteria for Classifying Hazardous Substances*. The following risk phrases were specified on the MSDS:

R36/38: Irritating to eyes and skin  
R43: May cause sensitisation by skin contact

The MSDS for the notified polymer and products reported that they are not expected to be irritating to the respiratory system. For Hardener JW2934, the oral LD50 in rats is 2300 mg/kg; for Hardener XD 4414, the oral LD50 in rats is >5000 mg/kg.

##### Occupational Health and Safety

Dermal and ocular exposure can occur during certain formulation processes. However, given that exposure to significant amounts is limited because of the engineering controls and personal protective equipment worn by workers, the risk of adverse effects is low.

During end-use, hand/ocular contamination with the adhesive may occur, particularly, when the adhesive product is mixed and applied by hand (up to 82% notified polymer in the formulated hardener product and up to 41% notified polymer in the adhesive mix). Therefore, there is some risk of eye irritation, and perhaps slight skin irritation arising from contact with the notified polymer during this process. Inhalation exposure to the notified polymer is not expected as it is not volatile. In order to minimise the risk of adverse health effects, workers using the hardener products containing the notified polymer should wear personal protective equipment including overalls, gloves and face shield/goggles.

After application and once dried, the adhesive containing the notified polymer is cured into an inert matrix of the epoxy resin and is hence unavailable to exposure. Therefore, the risk of adverse health effects to cured material is minimal.

During transport and storage, the health risk to workers is not considered significant given the physical form of the product and the packaging.

### **Public Health**

The notified polymer will be available for sale to the general public as a component of Araldite adhesive do-it-yourself (DIY) products. Although the notified polymer is expected to cause skin and eye irritation, this is not uncommon for adhesive chemicals of this type. Furthermore, the general public will only be exposed to the notified polymer through a conscious choice to use DIY Araldite adhesive products, for which it is common to prevent/minimise skin and eye contact. Many similar adhesive products are presently available for sale to the public through retail outlets. Therefore, the risk to public health from the notified polymer is likely to be low.

### **Environmental Effects**

The reported use pattern of the notified polymer is likely to result in low environmental exposure. The notified polymer will initially be imported in ready-to-use hardeners, mostly intended for the retail market. The majority of the polymer will be chemically bound into the cured polymeric matrix of the adhesives in which it is used once the hardeners and resins have been mixed and applied. At the end of their useful lives articles adhered with the adhesive systems would be disposed of to landfill.

A small amount of the polymer may be released should the notifier find that sales of the adhesive system justify local manufacture of the hardeners. A proportion of this waste may be disposed of where the polymer is likely to associate with soils and sediments. The polymer is moderately toxic to algae and highly toxic to daphnids. However, exposure to the aquatic compartment should be low and it should not bioaccumulate given its relatively high molecular weight. The remainder of the waste may be incinerated, destroying the notified polymer. Overall the environmental hazard posed by the use of the notified polymer is expected to be low.

## **RECOMMENDATIONS**

### **Regulatory Controls**

- Use the following risk and safety phrases for the notified polymer:
  - R36/38: Irritating to eyes and skin

- S36 Wear suitable protective clothing
- S37 wear suitable gloves
- S39 wear eye/face protection
- S24 Avoid contact with skin
- S25 Avoid contact with eyes

The risk phrases R36/38 should be used for products/mixtures containing  $\geq 20\%$ .

#### Control Measures

#### **Occupational Health and Safety**

- Employers should implement the following engineering controls to minimise occupational exposure to the notified polymer:
  - Exhaust ventilation during formulation of the notified polymer and hardeners
- Employers should implement the following safe work practices to minimise occupational exposure during handling of the notified polymer and hardeners:
  - Prevent splashes and spills
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified polymer:
  - Chemical resistant gloves, protective overalls, and goggles/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.
- 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.

#### **Environment**

##### Disposal

- The notified polymer should be disposed of by landfill or incinerated according to local regulations.

##### Emergency procedures

- Spills/release of the notified polymer should be handled by absorbing with inert material and collection into a sealed container 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.

## 11 PUBLICATION SUMMARY REPORT

---

### Polymer in DIST Summary Report Reference No: LTD/1007

---

Clariant Australia Pty Ltd (ACN 069 435 552) of 675-685 Warrigal Road, Chadstone VIC 3148 has submitted a limited notification statement in support of their application for an assessment certificate for Polymer in DIST. The notified polymer is intended to be used as a component of a finished dyestuff product Drimarene Blue K2RL CDG. Less than 1 tonne 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 was provided for the notified polymer. The high molecular weight and physicochemical properties of the notified polymer are likely to limit its absorption across biological membranes. Therefore, the toxicity of the polymer is anticipated to be low and it is unlikely to be a hazardous substance according to the *Approved Criteria for Classifying Hazardous Substances*.

##### Occupational Health and Safety Assessment

No manufacture of the notified polymer will take place in Australia. It will be imported as a component of the dyestuff product, Drimarene Blue K2RL CDG, in 25 kg packs. Transport workers are usually not required to handle packaging and thus are unlikely to be exposed to the notified polymer under normal circumstances. Therefore, the risk of adverse health effects is minimal.

Loading of trucks (1 hour x 4 times per year) at the Clariant plant will be carried out by two storemen wearing appropriate protective equipment (overalls/industrial clothing and gloves). Two personnel involved in weighing/repackaging of the dye product will be potentially exposed to the notified polymer mainly via skin contact and inhalation (0.5 hour x 6 times per year). The operation will take place under an exhaust hood with the workers wearing appropriate skin, eye and respiratory protection. Considering the frequency of handling, work practices, protective equipment and engineering controls, the risk to these workers is determined to be low.

At the customer dye houses, there will be a total of 12 dye house personnel potentially exposed to the product when weighing out batch quantities of the dye (0.5 hour x 12 times per year). Weighing stations are expected to be well ventilated and the personnel involved should wear appropriate protective equipment. Dye operators will be also expected to wear appropriate skin, eye and respiratory protection to minimise exposure when handling the dye batch in open vessels. The liquid dye may be manually poured via a delivery chute into the dyeing machine or poured into a holding tank for pumping into the dyeing machine. After addition of the dye to the machinery, the system is enclosed. The dye operators are involved in controlling valves to pump dyes into the machines and to remove waste water at the end of the process but have no contact with the dyes during the process.

The notified polymer is expected to be removed from the fabric during rinse phases and remain in waste liquors. Operator exposure to any residues of the notified polymer on the fabric therefore is expected to be negligible.

In summary, during handling of the dyestuff product containing the notified polymer, workers should avoid inhalation of dusts, skin and ocular exposure. Weighing and repackaging of quantities of the dye should be carried out under an exhaust ventilation. A copy of MSDS should be readily available for referencing. Also, with the application of good work practices and use of appropriate skin, eye and respiratory protection, the notified polymer is not expected to pose a significant risk to workers.

### **Public Health**

The dyestuff product containing the notified polymer will not be available for use by the general public. The public will come into contact with the residue of the notified polymer remaining in the cotton fabrics after dyeing. However, due to its low residual level and expected low toxicity, the notified polymer is unlikely to pose a significant health risk to the public.

### **Environmental Effects**

Usage patterns and physicochemical properties indicate that all of the polymer in the dyestuff products may eventually be released into the natural aquatic environment from tradewaste and sewage treatment facilities following the dyeing process.

The notified substance is highly water-soluble and is therefore not expected to adsorb onto sewage sludge or vaporise from water in the treatment facilities, but rather will remain in the water compartment. A worst case scenario predicted environmental concentration (PEC) for each point source of release into on-site industrial wastewater treatment facilities, assuming a dilution factor of 10, is <2.0 mg/L, and for the domestic sewage system, assuming a dilution factor in the sewer of 50, is <0.04 mg/L. Once released from sewage treatment facilities into natural waterways, the substance would again be diluted by an amount depending on the size of the receiving waters. Consequently, the concentration of notified chemical eventually released into the natural aquatic environment is likely to be low.

The results of the ecotoxicological tests indicate the notified substance is not toxic to fish or sewage microorganisms. The polymer's high molecular weight and physicochemical properties would preclude movement across biological membranes, and as such the polymer should not bioaccumulate. While the substance is not readily biodegradable, it is inherently biodegradable, and therefore is not expected to persist in the environment, but rather to undergo microbial and abiotic degradation.

Given these considerations, the notified polymer is not expected to pose any significant hazard to the environment. The low import volumes and the anticipated diffuse use of the product indicate that the levels of release of the chemical to the environment will be low, and significantly lower than the levels of exposure shown not to be toxic to the organisms studied.

## RECOMMENDATIONS

### *Occupational Health and Safety*

- Employers should implement the following engineering controls to minimise occupational exposure to the notified polymer present in the product Drimarene Blue K2RL CDG:
  - An exhaust hood for weighing and repackaging stations.
- Employers should implement the following safe work practices to minimise occupational exposure during handling of the notified polymer in the product Drimarene Blue K2RL CDG:
  - Adequate operation training in safe work practices for formulators and dyehouse workers
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified polymer in the product Drimarene Blue K2RL CDG:
  - Gloves,
  - Safety glasses,
  - Respiratory protection when handling granular dye stuff, and
  - Protective 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 any 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 in accordance with those measures outlined in the MSDS. It is recommended that spills 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(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.

## 12 PUBLICATION SUMMARY REPORT

---

### NT-21 Summary Report Reference No: LTD/1010

---

Canon Australia Pty. Ltd (ABN 66 005 002 951) of 1 Thomas Holt Drive, North Ryde NSW 2113 has submitted a limited notification statement in support of their application for an assessment certificate for NT-21. The notified polymer is intended to be used as a component of a toner product for use in photocopies and graphic printers. Up to 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 is of low toxicity via the oral route ( $LD_{50} > 2500$  mg/kg). It is not irritant to rabbit skin. It is slightly irritant to the rabbit eye. It is not mutagenic to bacteria in the reverse mutation bacterial assay using four strains of *S typhimurium* and one of *E coli* at concentrations of up to 10000  $\mu$ g/plate, with or without metabolic activation.

Based on the available data the notified polymer is not classified as hazardous under the NOHSC Approved Criteria for Classifying Hazardous Substances.

##### Occupational Health and Safety

The occupational health risk to transport and storage workers is considered to be negligible, as they will be only be exposed to the notified polymer in the event of an accident or damage to packaging.

Office workers are not expected to come into contact with the notified polymer under normal circumstances. Design of the toner cartridges and bottles are such that exposure to the notified polymer should be minimal. Minor dermal exposure may occur during changing of toner cartridges if a small quantity of toner is present around the printer. There may be a low level of toner dust in the immediate vicinity of printers when they are operating, although inhalation and eye exposure to the notified polymer is expected to be low. Exposure to the notified polymer is not expected to occur once the toner is bound to paper. Based on the expected low toxicity of the polymer and the expected low exposure, the health risk posed to office workers is negligible. Employers are responsible for maintaining the NOHSC exposure standard for nuisance dust of 10 mg/m<sup>3</sup> TWA.

Maintenance workers may be exposed to the toner dust repeatedly when servicing photocopies and printers. Exposure is anticipated predominantly by the dermal route, hence the wearing of cotton or disposable gloves is recommended. They are also likely to encounter inhalation exposure to dust containing approximately 10% respirable particles. It is recommended that printers/photocopiers be placed in well-ventilated areas. Given the training they receive, the low anticipated toxicity of the notified polymer and PPE worn, the risk of adverse health effects is likely to be low.

## Public Health

Public exposure to the toner powder containing the notified polymer following transport accidents, environmental contamination or the recycling of bottles and cartridges is unlikely. Public exposure to the toner powder during the replacement of spent bottles or cartridges is more likely but is not expected to be common. Contact with the notified polymer on printed paper is likely to be negligible. Exposure is most likely to be dermal but ocular or respiratory contact is also possible. Exposure is likely to be of an infrequent or transient nature. 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 notified polymer will enter environmental compartments indirectly by disposal of waste paper (for recycling, to landfill or for incineration) and by direct release from discarded printer cartridges at landfill sites. Based on the import volume, method of packaging and low concentration of the notified polymer in printer ink, release of the notified polymer to the environment is expected to be low but widespread. Waste from the recycling process includes sludge which is dried and disposed of to landfill, and very little of the notified polymer will partition to the supernatant water which is released to the sewer.

Abiotic or slow biotic processes are expected to be largely responsible for the degradation of the notified polymer as it is unlikely to be readily biodegradable. As a consequence of its low water solubility, the notified polymer is likely to be immobilised through adsorption onto soil particles and sediments.

Releases to the sewer will be low because very little of the notified polymer is expected to reach water and partition to supernatant water. Furthermore, the substance is not expected to bioaccumulate due to its high molecular weight and limited release to water.

On the basis of the available information, the polymer is not considered to pose a risk to the environment when used in the reported pattern.

## RECOMMENDATIONS

### Occupational Health and Safety

- Employers should implement the following safe work practices to minimise occupational exposure to the new toner product containing the notified polymer:
  - Adequate induction and training programs for service personnel.
- Employers should ensure that the following personal protective equipment is used by maintenance workers to minimise occupational exposure to the new toner product:
  - Wearing of cotton or disposable gloves when servicing printers or removing spent cartridges.

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

- Employers are responsible for maintaining dust levels around printers and photocopiers below the NOHSC exposure standard for nuisance dust of 10 mg/m<sup>3</sup> TWA. Printers and photocopiers should be located in well-ventilated areas.
- 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 either through recycling, landfill or incineration.

#### Emergency procedures

- Spills/release of the notified polymer should be contained as described in the MSDS (ie sweep onto paper and transfer to a sealable waste container) and the resulting waste is 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:

- (1) 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.