File No PLC/911

March 2010

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in Aquaflow XLS525/XLS530

This Assessment has been compiled in accordance with the provisions of the *Industrial Chemicals (Notification and Assessment) Act 1989* (Cwlth) (the Act) and Regulations. This legislation is an Act of the Commonwealth of Australia. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) is administered by the Department of Health and Ageing, and conducts the risk assessment for public health and occupational health and safety. The assessment of environmental risk is conducted by the Department of the Environment, Water, Heritage and the Arts.

For the purposes of subsection 78(1) of the Act, this Full Public Report may be inspected at our NICNAS office by appointment only at 334-336 Illawarra Road, Marrickville NSW 2204.

This Full Public Report is also available for viewing and downloading from the NICNAS website or available on request, free of charge, by contacting NICNAS. For requests and enquiries please contact the NICNAS Administration Coordinator at:

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Director
NICNAS

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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
Nuplex Industries (Aust) Pty Ltd (ABN 25 000 045 572)
49-61 Stephen Road
BOTANY NSW 2019

NOTIFICATION CATEGORY
Polymer of Low Concern

EXEMPT INFORMATION (SECTION 75 OF THE ACT)
Data items and details claimed exempt from publication:
Chemical Name, Other Names, CAS Number, Molecular and Structural Formulae, Molecular Weight, Polymer Constituents, Residual Monomers/Impurities, Use Details and Manufacture/Import Volume.

VARIATION OF DATA REQUIREMENTS (SECTION 24 OF THE ACT)
No variation to the schedule of data requirements is claimed.

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)
None

NOTIFICATION IN OTHER COUNTRIES
None

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
Polymer in Aquaflow XLS525/XLS530 (containing 15-30% of the notified polymer)

MOLECULAR WEIGHT (MW)
Number Average Molecular Weight (Mn) > 10,000 Da

REACTIVE FUNCTIONAL GROUPS
The notified polymer contains only low concern functional groups.

3. PLC CRITERIA JUSTIFICATION

Criterion	*Criterion met*
Molecular Weight Requirements	Yes
Functional Group Equivalent Weight (FGEW) Requirements	Yes
Low Charge Density	Yes
Approved Elements Only	Yes
Stable Under Normal Conditions of Use	Yes
Not Water Absorbing	Yes
Not a Hazard Substance or Dangerous Good	Yes

The notified polymer meets the PLC criteria.

4. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20 °C and 101.3 kPa:	Off-white to yellow solid.
Melting Point/Glass Transition Temp	60-70 °C.
Density	1100-1200 kg/m^3 at 20 °C.
Water Solubility	>300 g/L, as claimed by the notifier, however at higher concentrations the polymer will start to gel (report not provided). The notified polymer was manufactured in aqueous solution, contains predominantly hydrophilic functional groups, and is therefore expected to be highly water soluble.
Particle Size	The notified polymer will only be introduced in an aqueous dispersion.
Reactivity	Stable under normal conditions of use. Hydrolysis is not expected to occur in the environmental pH range 4–9.
Degradation Products	None under normal conditions of use.

5. INTRODUCTION AND USE INFORMATION

MAXIMUM INTRODUCTION VOLUME OF NOTIFIED CHEMICAL (100%) OVER NEXT 5 YEARS

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	10-30	60-100	100-150	150-300	150-300

Use
The notified polymer will be used as a component of surface coatings.

Mode of Introduction and Disposal
The notified polymer will be imported at concentrations of 15-30% in the products Aquaflow XLS525/XLS530. It will be reformulated into surface coatings (conc. <1%) and then applied, using spray, brush or roller, to a variety of exterior and interior building substrates by tradesmen and members of the public.

6. HUMAN HEALTH IMPLICATIONS

Hazard Characterisation
No toxicological data were submitted. The notified polymer meets the PLC criteria and can therefore be considered to be of low hazard.

Occupational Health and Safety Risk Assessment
Dermal and ocular exposure to the notified polymer in the imported product (<30%) may potentially occur during certain processes at the reformulation site. These processes include transfer steps, sampling for quality control, packaging, cleaning and maintenance. However, exposure to significant amounts of the notified polymer will be limited because of the automated processes, the engineering controls and the personal protective equipment worn by workers.

Professional tradesmen may encounter dermal, inhalation and ocular exposure to finished coatings containing the notified polymer (<1%) during application by spray, brush and roller. However, it is expected that some personal protective equipment (PPE) may be used to minimise exposure (such PPE could include facemasks for use during spraying). After application and once dried, the paint containing the notified polymer will be cured into an inert film and the polymer is hence unavailable to exposure.

Overall, the OHS risk presented by the notified polymer is not considered to be unacceptable, based on the minimal exposure to workers and the assumed low hazard of the polymer.

Public Health Risk Assessment
Do-it-yourself (DIY) users may also encounter dermal, inhalation and ocular exposure during application of the finished coatings containing the notified polymer (<1%). However, the potential for exposure may be minimised through the use of PPE such as overalls, face masks, gloves, boots and safety glasses. After application and once dried, the paint containing the notified polymer will be cured into an inert film and hence the polymer will be unavailable to exposure.

The risk to public health is not considered to be unacceptable given the predicted low hazard of the notified polymer and its low concentration in finished products.

7. ENVIRONMENTAL IMPLICATIONS

Hazard Characterisation
No ecotoxicological data were submitted. PLCs without significant ionic functionality are of low concern to the aquatic environment.

Environmental Risk Assessment
The imported notified polymer will be reformulated in Australia. During reformulation, it is expected that <2% of the annual import volume of the notified polymer will be lost to spills and the cleaning of reformulation equipment. Any spills are likely to be contained by bunding, and notified polymer collected in aqueous waste is expected to be flocculated and disposed of to landfill. Empty import containers, and paint cans containing notified polymer residue will be consigned to landfill or recycled. During paint application, overspray (20–60% of the annual import volume) is expected to be captured and disposed of to landfill, as are painted articles at the end of their useful life. In landfill, the notified polymer is expected to be trapped in the solid inert film of the paint and is not likely to be bioavailable. Slow degradation of the notified polymer in landfill, or thermal decomposition during metal reclamation, will form water and oxides of carbon. Up to 5% of the notified polymer is expected to be disposed of to the sewer during the cleaning of application equipment, especially from the washing of the brushes or rollers by do-it-yourself home painters. The notified polymer is water soluble, expected to be hydrolytically stable and is not likely to be readily biodegradable. Due to the notified polymer's relatively high molecular weight and high water solubility, it is not likely to bioaccumulate.

8. CONCLUSIONS AND RECOMMENDATIONS

Human health risk assessment
Under the conditions of the occupational settings described, the notified polymer is not considered to pose an unacceptable risk to the health of workers.

When used in the proposed manner, the notified polymer is not considered to pose an unacceptable risk to public health.

Environmental risk assessment
Based on the reported use pattern, the notified polymer is not expected to pose a risk to the environment.

Recommendations

CONTROL MEASURES
Occupational Health and Safety

- No specific engineering controls, work practices or personal protective equipment are required for the safe use of the notified polymer itself, however, these should be selected on the basis of all ingredients in the formulation.

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

- Use of spray paints containing the notified chemical should be carried out in accordance with the Safe Work Australia *National Guidance Material for Spray Painting* [NOHSC(1999b)] or relevant State and Territory Codes of Practice.

- 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 *Approved Criteria for Classifying Hazardous Substances* [NOHSC:1008(2004)], 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 to landfill.

Emergency procedures

- Spills and/or accidental release of the notified polymer should be handled by physical containment, collection and subsequent safe disposal.

Regulatory Obligations

Secondary Notification
This risk assessment is based on the information available at the time of notification. The Director may call for the reassessment of the polymer under secondary notification provisions based on changes in certain circumstances. Under Section 64 of the *Industrial Chemicals (Notification and Assessment) Act (1989)* the notifier, as well as any other importer or manufacturer of the notified polymer, have post-assessment regulatory obligations to notify NICNAS when any of these circumstances change. These obligations apply even when the notified polymer is listed on the Australian Inventory of Chemical Substances (AICS).

Therefore, the Director of NICNAS must be notified in writing within 28 days by the notifier, other importer or manufacturer:

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

or

(2) Under Section 64(2) of the Act; if
  - the function or use of the notified polymer has changed from a component of surface coatings or is likely to change significantly;
  - the amount of notified polymer being introduced has increased, or is likely to increase, significantly;
  - the notified polymer has begun to be manufactured in Australia;
  - additional information has become available to the person as to an adverse effect of the chemical on occupational health and safety, public health, or the environment.

The Director will then decide whether a reassessment (i.e. a secondary notification and assessment) is required.

Material Safety Data Sheet
The MSDS of a product containing the notified polymer provided by the notifier was reviewed by NICNAS. The accuracy of the information on the MSDS remains the responsibility of the applicant.