File No PLC/878

October 2009

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in Aquaflow NLS200

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.

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
Aquaflow NLS200 (containing < 30% 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:	White solid
Melting Point/Glass Transition Temp	60-70°C
Density	1,040 kg/m^3 at 20°C
Water Solubility	0.15-2.0 g/L. Test report not provided. Stated as completely miscible with water in MSDS, however, the viscous gel formed prevents any

	further polymer from dissolving. A high water solubility is expected from the predominantly hydrophilic structure.
Particle Size	The notified polymer will only be introduced in an aqueous dispersion.
Reactivity	Stable under normal conditions of use
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	< 20	< 20	< 20	< 20	< 20

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 < 30% in the product Aquaflow NLS200. It will be reformulated into surface coatings at a maximum concentration of < 1% and applied to building substrates using spray, brush or roller 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 to the notified polymer in the imported product at concentrations of < 30% may occur at the reformulation site during transfer from import containers to reaction vessels, sampling for quality control, packaging and cleaning and maintenance. However, these processes are expected to take place in closed, automated systems with limited potential for exposure. Workers handling the notified polymer are also expected to wear appropriate personal protective equipment (PPE) such as safety glasses, gloves and protective clothes to further minimise exposure.

Professional tradesmen may encounter dermal, ocular and inhalation exposure to surface coating products containing the notified polymer at < 1% during application by spray, brush and roller. However, it is expected that some PPE (which may include face masks for use during spraying) may be used to minimise exposure.

After application and once dried, the coating containing the notified polymer is cured into an inert matrix and the notified polymer is hence unavailable to exposure.

Overall, the occupational health and safety risk presented by the notified polymer is not considered to be unacceptable based on its low concentration in finished products and assumed low hazard.

Public Health Risk Assessment
Do-it-yourself (DIY) users may also encounter dermal, ocular and inhalation exposure during application of surface coatings containing the notified polymer at < 1%. Some users may wear PPE such as overalls, face masks, gloves, boots and safety glasses acting to lower exposure.

After application and once dried, the coating containing the notified polymer is cured into an inert matrix and the notified polymer is hence unavailable to exposure.

The risk is not considered to be unacceptable given the assumed low hazard of the notified polymer and its low concentration in the 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 majority of the notified polymer will end up in landfill, either sharing the fate of building substrates or disposal of releases resulting from reformulation and painting applications.

The notified polymer is not considered to be readily biodegradable, neither is it considered to be accumulative to aquatic organisms based on its high NAMW of > 1000. Leaching from soil is not expected to be significant considering the high molecular weight of the notified polymer and also the fact that the majority of the polymer will be incorporated into inert paint during painting application. In landfill, the notified polymer will most likely undergo slow biotic or abiotic degradation processes, forming water and oxides of carbon.

The notified polymer is not considered to pose an unacceptable risk to the environment based on the above proposed use pattern.

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 considered 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;

(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.