

File No PLC/865

August 2009

**NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME  
(NICNAS)**

**FULL PUBLIC REPORT**

**Polymer in Setaqua Eco 4000**

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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**FULL PUBLIC REPORT****Polymer in Setaqua Eco 4000****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, Molecular and Structural Formulae, Molecular Weight, Polymer Constituents, Residual Monomers, Use Details, Manufacture 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 Setaqua Eco 4000

## MOLECULAR WEIGHT (MW)

Number Average Molecular Weight (Mn) &gt;10,000 Da

## REACTIVE FUNCTIONAL GROUPS

The notified polymer contains only low concern functional groups.

**3. PLC CRITERIA JUSTIFICATION***Criterion*

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

*Criterion met*

Yes  
Yes  
Yes  
Yes  
Yes  
Yes  
Yes

The notified polymer meets the PLC criteria.

**4. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance at 20°C and 101.3 kPa:	Clear, colourless
Melting Point/Glass Transition Temp	28°C
Density	1150 kg/m <sup>3</sup> at 20°C
Water Solubility	The water solubility has not been measured as the notified polymer is not isolated from its aqueous dispersion. The notified polymer is fully

Dissociation Constant	miscible with water but does not dissolve. The notified polymer contains small amounts of anionic functionality expected to show typical acidity. While these functional groups are likely to be dissociated in the environmental pH range, the notified polymer will not be solubilised as it has very high molecular weight and is highly cross-linked.
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

<i>Year</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Tonnes	< 1500	< 1500	< 1500	< 1500	< 1500

#### Use

Component of water-based architectural paint at < 25%

#### Mode of Introduction

The notified polymer will be locally manufactured at Nuplex Industries in Victoria and reformulated to produce finished paint products.

## 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

The level and route of exposure are likely to be similar for workers involved in the manufacture of the polymer and reformulation. Dermal and ocular exposure may occur during reactor charging, mixing, sampling and equipment cleaning. However exposure to significant amounts of the notified polymer is expected to be limited because processes occur in closed vessels and are largely automated. Operators, QC and equipment cleaning workers are expected to wear full PPE to minimise contact with the notified polymer.

For end-users such as professional painters and tradespeople, dermal exposure to the notified polymer (up to 25%) is anticipated to be the primary route of exposure during brush, spray and roller painting. Painters and tradespeople are likely to wear overalls or similar clothing and closed shoes.

Inhalation exposure is possible during spray applications although this method is likely to be less frequent than brush and roller painting and the level of exposure is not expected to be significant. After application and once dried, the notified polymer is cured into a solid inert coating and the polymer is hence unavailable to exposure.

Although exposure could occur, the risk to workers is considered to be low due to the use of PPE and intrinsic low hazard of the notified polymer.

### Public Health Risk Assessment

Since the paint products containing up to 25% notified polymer will be sold to the general public, there is potential for dermal and inhalation exposure similar to professional painters and tradespeople.

Although the public may be exposed to the notified polymer during application of the paint, the risk to public health is considered to be low due to the predicted low hazard of the notified polymer.

## 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 notified polymer is not expected to be released during manufacture, as fugitive vapours are destroyed by thermal decomposition. Aqueous waste streams from production and packaging will be treated on-site, with flocculated waste consigned to landfill. Cured paint collected as overspray will be disposed of to landfill, where it is expected to remain immobile and slowly degrade. If paint residues are washed to sewer while cleaning equipment, the notified polymer is expected to partition to sludge during sewage treatment. These considerations, together with the low water solubility of the notified polymer, will ensure minimal aquatic exposure. Therefore, the notified polymer is not considered to pose a risk to the environment.

## **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.

- 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 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 architectural paint, or is likely to change significantly;
  - the amount of notified polymer being introduced has increased, or is likely to increase, significantly;
  - the method of manufacture of the notified polymer in Australia has changed, or is likely to change, in a way that may result in an increased risk of an adverse effect of the notified polymer on occupational health and safety, public health, or the environment;
  - 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 the 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.