File No PLC/997

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN FULL PUBLIC REPORT

Polymer 218

This Assessment has been compiled in accordance with the provisions of the *Industrial Chemicals (Notification and Assessment) Act 1989* (Cwlth) (the Act) and Regulations. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) is administered by the Australian Government 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 Australian Government Department of Sustainability, Environment, Water, Population and Communities.

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 Level 7, 260 Elizabeth Street, Surry Hills NSW 2010.

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

August 2011

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1. APPLICANT AND NOTIFICATION DETAILS

Applicants
Ezi Floor Products (Vic) Pty Ltd (ABN 22 087 581 520)
Wareca, Unit 9, 1866 Princes Highway
Clayton VIC 3168

and

Bonakemi Australia Pty Ltd (ABN 35 096 221 448)
c/o Nexia Court & Co, Level 29, 264-278 George Street
Sydney NSW 2000

Exempt Information (Section 75 of the Act)
Data items and details claimed exempt from publication: chemical name, CAS number, molecular and structural formulae, molecular weight, polymer constituents and residual monomers/impurities

2. IDENTITY OF POLYMER

Marketing Name(s)
Bona Novia (product containing the notified polymer)

Other Name(s)
Polymer 218

Number Average Molecular Weight (Mn) is > 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 particle
Glass Transition Temp	< 20°C
Density	1000-1200 kg/m^3 at 20 °C
Water Solubility	Expected to be water dispersible based on the presence of polar functionality and the use pattern in a waterborne product.

Dissociation Constant	The notified polymer contains functionality that is expected to be ionised in the environment. However, this functionality is a minor component of the notified polymer.
Particle Size	80.6 nm (average) range 30-150 nm
Reactivity	Stable under normal environmental conditions
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	< 1	1.5	3	4.5	5.5

Use
The notified polymer will not be manufactured in Australia. The notified polymer will be imported into Australia at 30% concentration in a waterborne coating product.

The waterborne coating product containing the notified polymer will not be reformulated in Australia. The waterborne coating product containing the notified polymer will mainly be used as a floor finish.

6. HUMAN HEALTH RISK ASSESSMENT

No toxicological data were submitted. The notified polymer meets the PLC criteria and is therefore assumed to be of low hazard.

As the notified polymer is of high molecular weight and low water solubility, it has the potential to cause lung overloading if inhaled. However, it is imported as a component of a coating product which is applied by brush and roller, and inhalation exposure to the coating is therefore unlikely.

The imported product contains the notified polymer in dispersion with its particle size in the nanometer range. Although workers may be exposed to the nano-sized particles of the notified polymer delivery in the nanoform through biological membranes is not expected as the notified polymer will lose its nanostructure upon contact and collapse into a film.

The public will be exposed to the notified polymer only in the finished coating film, where it will not be bioavailable.

The risk of the notified polymer to occupational and public health is not considered to be unreasonable given the assumed low hazard and the assessed use pattern.

7. ENVIRONMENTAL RISK ASSESSMENT

No ecotoxicological data were submitted. Polymers without significant ionic functionality are generally of low concern to the environment.

Floor finishes containing the notified polymer will either be poured directly on floors or applied with brushes and rollers. During use, a minor amount of notified polymer is expected to be washed to sewer during the cleaning of application equipment. However, up to 50% of released notified polymer is expected to partition to sludge in sewage treatment plants. Once cured, the coatings containing the notified polymer will form an inert polymer matrix, and the incorporated notified polymer will be neither bioavailable nor mobile. In landfill, cured notified polymer contained in solid waste or on

discarded coated flooring is expected to eventually degrade via abiotic or biotic processes to form water and oxides of carbon, nitrogen and sulfur. Bioaccumulation of the notified polymer is not likely based on its high molecular weight. Therefore, the notified polymer is not expected to pose an unreasonable risk to the aquatic environment based on the assessed use pattern and its assumed low hazard.

8. RECOMMENDATIONS

Human Health Risk Assessment
Based on the assumed low hazard and the assessed use pattern, the notified polymer is not considered to pose an unreasonable risk to the health of workers and the public.

Environmental Risk Assessment
Based on the assumed low hazard and the assessed use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.

Health and Safety Recommendations

- 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 to landfill.

Emergency Procedures

- Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.
- Spills and/or accidental release of the product containing the notified polymer should be handled by physical containment, collection and subsequent safe disposal.

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 component of waterborne coating, 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 product containing the notified polymer was provided by the applicant. The accuracy of the information on the MSDS remains the responsibility of the applicant.