File No PLC/888

November 2009

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in BYK-420

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

Akzo Nobel Pty Ltd (ABN 59 000 119 424)
8 Kellaway Place
Wetherill Park NSW 2164

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, Use Details.

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
USA (2002), Canada (2003), China (2004)

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
BYK-420 (contains < 60% notified polymer)

MOLECULAR WEIGHT (MW)
Number Average Molecular Weight (Mn) > 1,000 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:	Light yellow solid
Melting Point/Glass Transition Temp	45-48°C
Density	980 kg/m^3
Water Solubility	Expected to be very low (< 0.0001 g/L) at 20°C based on the structure and experience in use
Particle Size	Imported in a solution.
Reactivity	Stable under normal conditions of use
Degradation Products	None under normal conditions of use

5. INTRODUCTION AND USE INFORMATION

Mode of Introduction
Imported into Australia as a product containing < 60% notified polymer in solution.

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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	10-50	10-50	10-50	10-50	10-50

Use
Rheology modifier in water-borne paints, floor coatings and pigment concentrates at less than 2% concentration.

The imported solution will be reformulated with other ingredients to produce finished coatings containing < 2% notified polymer. End use will be spray, brush and roller painting by professional painters and brush or roller painting by the public (Do-It-Yourself (DIY) users).

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, ocular and inhalation exposure may occur to up to 60% notified polymer during weighing, reformulation and cleaning processes; however exposure to significant amounts of the notified polymer will be lowered due to workers wearing personal protective equipment (PPE), including overalls, gloves and safety glasses. Inhalation exposure will be reduced by the use of engineering controls (local exhaust ventilation).

Workers may come into contact with < 2% notified polymer through dermal, inhalation and ocular routes during application of coating products. The risk of exposure, however, will be minimised as workers will be wearing safety glasses, coveralls and gloves. Inhalation exposure during spray painting will be mitigated through the use of ventilated spray booths by workers wearing PPE, including face respirators. After application and once dried, the paint containing the notified polymer will be cured into an inert matrix and the polymer is hence unavailable to exposure.

Although exposure to the notified polymer could occur during reformulation and coating application, the notified polymer is not considered to pose an unacceptable risk to the health of workers due to the use of PPE, engineering controls and the assumed low hazard of the polymer.

Public Health Risk Assessment
Since the paint products containing up to 2% notified polymer will be sold to the general public, there is potential for dermal and ocular exposure by DIY users similar to professional painters. PPE may not be worn by DIY users. After application and once dried, the paint containing the notified polymer will be cured into an inert matrix and the polymer is hence unavailable to exposure.

Although the public may be exposed to the notified polymer during application of the paint, the risk to public health is not considered to be unacceptable due to the assumed 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 will be cured into an inert matrix in finished coatings and dried overspray, both of which are likely to ultimately be disposed of to landfill where they will slowly degrade *in situ*. Coated articles may also be subject to metals reclamation, which will destroy the coating. Small amounts of the notified polymer (up to 3% of the imported quantity) may be washed to sewer when manufacturing and application equipment is cleaned, and can be expected to be removed with sludge. As there is very little potential for discharge to surface waters, 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 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 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.