File No PLC/954

November 2010

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in Additol VXW 6360

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 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

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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
Cytec Australia Holdings Pty Ltd (ABN: 45 081 148 629)
Suite 1, Level 1 Norwest Quay, 21 Solent Circuit, Norwest Business Park
Baulkham Hills NSW 2153

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 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)
Additol VXW 6360 (containing < 40% 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	White liquid (Additol VXW 6360)
Melting Point/Glass Transition Temp	60-100°C (Additol VXW 6360)
Density	1050 kg/m^3 at 20°C (Additol VXW 6360)
Water Solubility	0.5 g/L at 20°C, indicating the polymer is moderately soluble in water. The data was determined via measurement of the transmission of visible light for a series of dilutions of the original water-borne emulsion product. The highest concentration that reached about 100% transmission of visible light at 620 nm wavelength was determined to be the solubility according to the test report.
Dissociation Constant	Not determined. There is no dissociable functionality in the notified polymer.
Particle Size (average)	Approximately 141 nm (polymer colloids in water)
Reactivity	Stable under normal environmental conditions. Hydrolysis of the notified polymer is expected to be slow in the environmental pH range despite the presence of hydrolysable functional groups in the polymer.
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	< 10	< 25	< 25	< 25

Use
Additol VXW 6360 containing < 40% notified polymer is a water dilutable urethane modified polyether additive and will be used as a thickener in the formulation of industrial coatings (< 2%). The coatings will be applied to concrete in both flooring and maintenance applications by brush or spray.

Mode of Introduction and Disposal
The notified polymer will be imported as a component of Additol VXW 6360 at < 40%.

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 potentially occur during certain processes involving the notified polymer. Exposure to significant amounts of the notified polymer would be limited by safe handling of coatings and personal protective equipment such as safety glasses, gloves and protective clothing. Inhalation exposure during spray application may occur unless respiratory protection is worn.

After application and once dried, the paint containing the notified polymer is in a cured form and the polymer is hence unavailable for exposure.

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

Public Health Risk Assessment
The notified polymer is intended only for use in industry and as such, public exposure to the notified polymer is not expected. Following application, the notified polymer will be in a cured form and will not be bioavailable. Therefore, based on the assumed low hazard and negligible exposure to the notified polymer, the risk to public from exposure to the notified polymer is not considered unacceptable.

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 imported into Australia as a component of an emulsion product. Further blending of the product with other ingredients is expected to form end use industrial coatings containing < 2% of the notified polymer. Blending equipment and empty import drums will be cleaned by solvent or water and the residues will be collected and disposed of to landfill. Any solvent generated from equipment cleaning is expected to be sent to a solvent collector for treatment according to State/Territory legislation.

Up to 57% of the notified polymer (including 2% residues in import drums, up to 50% from overspray and 5% waste resulting from mixing and spraying equipment cleaning) is expected to be released during the formulation and application of water-borne coatings, which will be either recycled or disposed of to landfill. The polymer that is applied via coating to concrete surfaces will be cross-linked and bound within an inert matrix and will be sent to landfill with the flooring at the end of its useful life. The notified polymer is not expected to bioaccumulate due to its high molecular weight. No significant release of the notified polymer to the water system is expected.

In landfill, the polymer contained in waste or on the coated surfaces is expected to be immobile due to its hydrophobic structural characteristics, being bound in an inert matrix in the coated articles. It is expected to eventually degrade via abiotic or biotic processes into water and oxides of carbon and nitrogen. The notified polymer is not expected to pose an unacceptable risk to the aquatic environment based on the reported use pattern and its characteristics as a PLC.

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.

- Spray application should be carried out in accordance with the National Guidance Material for Spray Painting.

- 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.
- The notified polymer is introduced in a powder form.

or

(2) Under Section 64(2) of the Act; if
- the function or use of the notified polymer has changed from component of industrial 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.