File No PLC/867

September 2009

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

# FULL PUBLIC REPORT

## Polymer in Macrynal VSM 6299w/42WA

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)
Cytec Australia Holdings Pty Limited (ABN 45 081 148 629)
Suite 1, Level 1, 21 Solent Circuit
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, Molecular Formula, Structural Formula, CAS Number, Molecular Weight, Polymer Constituents, Details of use.

VARIATION OF DATA REQUIREMENTS (SECTION 24 OF THE ACT)
No variation to the schedule of data requirements is claimed.

NOTIFICATION IN OTHER COUNTRIES
None

### 2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
Macrynal VSM 6299w/42WA (containing the notified polymer at < 45%)

MOLECULAR WEIGHT (MW)
Number Average Molecular Weight (Mn) >1000 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 |

### 4. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance at 20°C and 101.3 kPa: | Transparent to milky white liquid* |
| Boiling Point | ~100°C * |
| Density | 1064kg/$m^3$ at 20°C* |
| Water Solubility | < 0.05 g/L at 20°C. Peak transmission of visible light (620 nm) occurred at this concentration. |

| | |
|---|---|
| Dissociation Constant | pKa = 4.86 (based on propanoic acid) |
| Reactivity | Stable under normal environmental conditions |
| Degradation Products | None under normal conditions of use |

*For the product Macrynal VSM 6299w/42WA which contains the notified polymer at < 45%.

## 5. INTRODUCTION AND USE INFORMATION

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

| *Year* | *1* | *2* | *3* | *4* | *5* |
|---|---|---|---|---|---|
| Tonnes | < 50 | 50-100 | 50-100 | 50-100 | 50-100 |

**Use**
The notified polymer will be used as a component in 2-pack coating products for automotive refinish, wood and concrete sealer applications. The applied coatings will contain up to 16% notified polymer.

**Mode of Introduction and Disposal**
The notified polymer will be imported in an aqueous dispersion at < 45% in 200 kg steel drums. It will be transported by road from the wharf to the notifier's warehouse for storage or to customers for reformulation. The notified polymer will be reformulated into finished 2-pack coating products (at up to 32% notified polymer) packaged in 4 L or 20 L steel containers for industrial use.

## 6. HUMAN HEALTH IMPLICATIONS

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

**Occupational Health and Safety Risk Assessment**
***Reformulation***
Dermal and ocular exposure to the notified polymer (< 45%) may occur during weighing out prior to reformulation, product testing and cleaning of process equipment. However, exposure is expected to be limited by the use of personal protective equipment (PPE), including a full face respirator, overalls, gloves and protective footwear.

***Spray painting***
Spray painters may come into contact with the notified polymer (< 32%) through dermal, inhalation and ocular routes. Exposure is expected to be limited as spray painting is expected to be applied in a ventilated spray booth by workers using PPE.

***Concrete and wood applications***
Workers manually spraying coating products containing the notified polymer (< 32%) may encounter inhalation, dermal and ocular exposure. However, exposure is expected to be minimised by the use of PPE, including a full face respirator, overalls, gloves and protective footwear.

After application and once dried, the coating 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 application processes, the risk to workers is considered to be low due to its assumed low hazard and the anticipated use of PPE.

**Public Health Risk Assessment**
The notified polymer will not be available to the public. Members of the public may make dermal contact with products containing the notified polymer. However, the risk to public health is anticipated to be negligible because the notified polymer is assumed to be of low hazard, and bound within an inert matrix.

## 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 may be released in small amounts (< 3%) during formulation as spills, container residues and waste material. These releases will be collected for disposal to landfill or by thermal decomposition, with waste material reduced to an insoluble polymeric mass before landfill disposal. Similarly, small amounts (< 2%) will be released as container residues and equipment washings during use, for disposal to landfill. The main release (up to 50% as overspray during use) will mainly entail landfill disposal, after interception by spray booth scrubbers, with minor amounts discharged to sewer and subsequently adsorbed to sludge at the sewage treatment plant. Discarded articles containing the notified polymer within the cured paint film will be disposed of to landfill, or recycled for metals reclamation which will entail thermal decomposition of the paint. In landfill, the notified polymer is expected to degrade slowly *in situ*. Therefore, the notified polymer is not expected to pose a risk to the environment when it is used as proposed.

## 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.

- Spray application should be carried out in accordance with the Safe Work Australia *National Guidance Material for Spray Painting* [NOHSC (1999)].

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 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 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.