File No PLC/892

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NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in Macrynal SM2703/80BACX and Macrynal SM2712/75BAC

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, CAS Number, Molecular and Structural Formulae, Molecular Weight, Polymer Constituents, Residual Monomers/Impurities and Import Volume.

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
MACRYNAL SM 2703/80BACX (product containing the notified polymer)
MACRYNAL SM 2712/75BAC (product containing the 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*:	Colourless to light yellow viscous liquid
Boiling Point*	100-200°C
Density*	~1040 kg/m^3 at 20°C
Water Solubility	0.074 g/L at 20°C as determined by a simple water extraction test with gravimetric analysis of the aqueous extracts. The limited water solubility indicated by this test is consistent with the mainly hydrophobic structure of the notified polymer.
Reactivity	Stable under normal environmental conditions

Degradation Products	None under normal conditions of use. While the notified polymer contains hydrolysable functionality, hydrolysis is not expected to occur within the environmental pH range of 4-9.

Comments
*The notified polymer will not be isolated. The physical and chemical properties are for the products containing the notified polymer at approximately 80%.

5. INTRODUCTION AND USE INFORMATION

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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	< 100	< 100	< 100	< 100	< 100

Mode of Introduction and Disposal
The notified polymer will be imported in closed head 200 kg steel drums by sea and transported to the notifier's warehouse or customer's warehouses by road.

Use
The notified polymer will be used as a component of coatings for industrial and automobile applications.

The imported product containing the notified polymer (~80%) will be formulated into coating products (~60% notified polymer) and distributed to end user sites. At the site of application, the product containing the notified polymer will be combined with other ingredients (such that the notified polymer will be present at concentrations of < 30%) before being filled into spray equipment for spraying onto the vehicle or other substrate in a spray booth.

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
Workers may be exposed to the notified polymer during transfer into mixing tanks, filling of product containers, cleaning of reformulation equipment, mixing with the other components and spray application. However, appropriate engineering controls such as local exhaust ventilation during reformulation and the use of a spray booth are expected to be in place to minimise exposure. Workers are also expected to wear personal protective equipment (PPE) such as overalls, safety glasses, respirators (as required), and gloves to further lower exposure.

Overall, the OHS risk presented by the notified polymer is not considered to be unacceptable, based on the predicted low exposure to workers and its assumed low hazard.

Public Health Risk Assessment
The notified polymer is intended for industrial use and 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 will be negligible because the notified polymer is assumed to be of low hazard, will become trapped within a cured film following application and is not expected to be bioavailable. The risk to the public is not considered to be 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

Up to 2% of the notified polymer may be released during formulation as spills, container residues and waste material. These releases will be collected for disposal to landfill. A maximum of 3% will be released as container and equipment washings during use, which will be sent to a licensed hazardous waste facility for disposal in accordance with state/territory hazardous waste standards. The main release (up to 50% as overspray during use) will typically entail landfill disposal, after interception by spray booth filters. Discarded end use articles containing the notified polymer within the cured paint film will be disposed to landfill, or recycled for metals reclamation, which will entail thermal decomposition of the paint to form oxides of carbon and water vapour. In landfill, the notified polymer is expected to slowly degrade by abiotic and biotic processes. 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.

- Spray application should be carried out in accordance with the Safe Work Australia *National Guidance Material for Spray Painting* [NOHSC (1999b)] or relevant State and Territory Codes of Practice.

- 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.

or

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