

File No SAPLC/60

October 2006

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

**FULL PUBLIC REPORT**

**Polymer in EXL-2602**

This Self Assessment has been compiled by the applicant and adopted by NICNAS 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), administered by the Department of Health and Ageing and the Department of the Environment and Heritage has screened this assessment report. The data supporting this assessment will be subject to audit by NICNAS.

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**Director  
NICNAS**

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<b>Polymer in EXL-2602</b>
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**1. APPLICANT AND NOTIFICATION DETAILS****APPLICANT(S)**

Rohm and Haas Australia Pty. Ltd. (ABN 29 004 513 188)  
4<sup>th</sup> Floor, 969 Burke Road, Camberwell, VIC. 3124

**NOTIFICATION CATEGORY**

Self Assessment: Polymer of Low Concern

**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, Residual Monomers/Impurities, Details of Import Volume, Details of use.

**PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)**

None

**NOTIFICATION IN OTHER COUNTRIES**

None known

**2. IDENTITY OF CHEMICAL****MARKETING NAME(S)**

Polymer in EXL-2602

**MOLECULAR WEIGHT (MW)**

Number Average Molecular Weight (Mn) > 1000

**REACTIVE FUNCTIONAL GROUPS**

The notified polymer contains only low concern functional groups.

**3. PLC CRITERIA JUSTIFICATION**

<i>Criterion</i>	<i>Criterion met (yes/no/not applicable)</i>
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**

The notified polymer is a component of a granulated plastic moulding resin.

**Melting Point/Glass Transition Temp**

Not applicable. The notified polymer is not isolated from the plastic moulding resin.

**Density**

1,100 kg/m<sup>3</sup> at 25°C (EXL-2602)

<b>Water Solubility</b>	Expected to be low due to the lack hydrophilic groups.
<b>Particle Size</b>	The notified polymer is a component of a granulated plastic moulding resin.
<b>Reactivity</b>	Stable under normal environmental conditions, but may hydrolyse under extreme pH conditions.
<b>Degradation Products</b>	None under normal conditions of use

## 5. INTRODUCTION AND USE INFORMATION

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

<i>Year</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<i>Tonnes</i>	1-10	1-10	1-10	1-10	1-10

### USE AND MODE OF INTRODUCTION AND DISPOSAL

#### Mode of Introduction

The notified polymer will not be manufactured in Australia. It will be imported as a 5-10% w/w component of a granulated plastic injection moulding resin. The moulding resin will be imported by sea in 25 Kg paper bags.

Upon arrival at ports in Sydney and/or Melbourne the notified polymer will be transported by road to the notifier's warehouse where it will be stored under cover until such time that it is transported to the injection moulder(s) site for conversion to plastic articles. Currently no customers in Australia have been identified for the imported moulding resin.

#### Reformulation/manufacture processes

The notified polymer will neither be manufactured nor reformulated in Australia.

#### Use

The notified polymer will not be manufactured in Australia. It will be imported as a component of a plastic moulding resin. The moulding resin will be used in injection moulding equipment to mainly produce Original Equipment Manufacturers (OEM) automotive and electronic equipment components.

## HUMAN HEALTH IMPLICATIONS

### 6.1. Exposure Assessment

#### OCCUPATIONAL EXPOSURE

At the injection moulding company, no reformulation of the notified polymer will take place. The moulding resin will be transferred manually from the paper bags to a hopper adjacent to an injection moulder prior to being used in the moulding process. During the moulding process, the moulding resin is transferred from the hopper by gravity feed or auger feed to the injection moulding equipment where it is moulded into an article. After cooling, the article is removed from the mould, trimmed and stored until such time as it is shipped to the automotive or electronic equipment manufacturer where it will be used on an assembly line.

Transport and warehousing workers may come into dermal and ocular contact with the notified polymer through accidental leaks and spillages of the bags.

During the moulding process, workers will manually transfer the polymer to the hopper. Workers will wear dust respirators, eye protection, cotton gloves and coveralls. Local exhaust ventilation is also installed adjacent to the hopper and the moulding equipment. Exposure from the notified polymer to these workers can occur by either inhalation, dermal or ocular routes, however significant exposure will be limited due to the workplace practices, engineering controls and personal protective equipment used.

Workers will also handle moulded automotive and electronic components containing the notified polymer. After notified polymer is contained in the moulded component it is contained in an inert

polymer matrix and the notified polymer is hence unavailable for exposure.

#### PUBLIC EXPOSURE

The notified polymer will not be sold directly to the public. However, the notified polymer will be a component of automotive and electronic components that the public will come into contact with. Exposure will be negligible due to its low concentration, low water and oil solubility, low volatility and because it will be bound within the polymer matrix of the components.

### 6.2. Toxicological Hazard Characterisation

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

The notified polymer is, however, a high molecular weight, insoluble polymer and the inhalation of respirable particles of this class of polymer has been linked with lung overloading.

### 6.3. Human Health Risk Assessment

#### OCCUPATIONAL HEALTH AND SAFETY

The OHS risk presented by the notified polymer is expected to be low, based on low hazard and low exposure as well as the engineering controls and personal protective equipment used by workers.

#### PUBLIC HEALTH

The notified polymer will not be sold directly to the public. However, the notified polymer will be a component of automotive and electronic components that the public will come into contact with. The notified polymer is considered to present a low human health hazard and exposure to it will be negligible. Therefore the risk to public health is considered negligible.

## 7. ENVIRONMENTAL IMPLICATIONS

### 7.1. Exposure Assessment

#### ENVIRONMENTAL RELEASE

Release to the environment during shipping, transport and warehousing will only occur through accidental spills or leaks from bags. Spills will be taken up mechanically and re-used where possible. Other waste will be sent to a licensed waste landfill site.

It is expected that 0.1% of the notified polymer will be lost to spills and a further 0.2% will remain as residue in paper bags. A further 2% waste will be generated from trimming of components. Total waste is expected to be less than 250 Kg per annum. All waste and "empty" bags will be disposed of as inert solid waste to a licensed waste landfill site. The vast majority of the notified polymer (>95%) will be bound within the polymer matrix of the moulded components and will share the fate of these components. Some will go to landfill but it is expected that the majority will be destroyed in furnaces when automobile bodies are recycled.

#### ENVIRONMENTAL FATE

The notified polymer is expected to be hydrolytically stable and to not be readily biodegradable. Due to its hydrophobic nature, it is expected that the notified polymer in landfill will associate with sediments and organic phases of soil and sediments, and slowly degrade to simple carbon compounds and water vapour. The polymer that is recycled with automobile bodies will decompose in furnaces to form oxides of carbon and water vapour.

### 7.2. Environmental Hazard Characterisation

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

### 7.3. Environmental Risk Assessment

No aquatic exposure is anticipated during manufacture of automotive components and end use of the notified polymer. It is envisaged that <3% waste would be generated from the moulding process. These wastes would be collected by licensed waste contractors and be disposed of in approved

landfills as inert solid waste. In landfill, the solid wastes will not be mobile and will degrade slowly and not pose a significant risk to the environment.

## 8. CONCLUSIONS

### 8.1. Level of Concern for Occupational Health and Safety

There is Low Concern to occupational health and safety under the conditions of the occupational settings described.

### 8.2. Level of Concern for Public Health

There is Negligible Concern to public health when used in the proposed manner.

### 8.3. Level of Concern for the Environment

The polymer is not considered to pose a risk to the environment based on its reported use pattern.

## 9. MATERIAL SAFETY DATA SHEET

### 9.1. Material Safety Data Sheet

The notifier has provided MSDS as part of the notification statement. The accuracy of the information on the MSDS remains the responsibility of the applicant.

## 10. RECOMMENDATIONS

### CONTROL MEASURES

#### Occupational Health and Safety

- During the moulding process where dust may be generated, it is recommended that local exhaust ventilation, dust respirators and safety glasses are used to minimise exposure to the notified polymer dust, however, these and other engineering controls and personal protective equipment 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 NOHSC *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

#### Disposal

- The notified polymer waste should be disposed of to landfill or incinerated.  
Empty containers should be sent to local recycling or waste disposal facilities

#### Emergency procedures

- Spills/release of the notified polymer should be collected and placed in suitable containers for disposal.

### 10.1. Secondary Notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

- (1) Under subsection 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 subsection 64(2) of the Act:  
- if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.