

File No PLC/833

April 2009

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

**FULL PUBLIC REPORT**

**Apec (HIP-55)**

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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**FULL PUBLIC REPORT****Apec (HIP-55)****1. APPLICANT AND NOTIFICATION DETAILS**

## APPLICANT(S)

Bayer Australia Limited (ABN 22 000 138 714)  
875 Pacific Highway Pymble NSW 2073

## 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 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

EU (1989)

**2. IDENTITY OF CHEMICAL**

## MARKETING NAME(S)

Apec (HIP-55)

## MOLECULAR WEIGHT (MW)

Number Average Molecular Weight (Mn) > 10,000 Da

## REACTIVE FUNCTIONAL GROUPS

The notified polymer contains only low concern functional groups.

**3. PLC CRITERIA JUSTIFICATION***Criterion*

Molecular Weight Requirements  
Functional Group Equivalent Weight (FGEW) Requirements  
Low Charge Density  
Approved Elements Only  
Stable Under Normal Conditions of Use  
Not Water Absorbing  
Not a Hazard Substance or Dangerous Good

*Criterion met*

Yes  
Yes  
Yes  
Yes  
Yes  
Yes  
Yes

The notified polymer meets the PLC criteria.

#### 4. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa:	Colourless clear 3 mm pellet
Glass Transition Temp	150-238°C
Density	1120-1200 kg/m <sup>3</sup> at 20°C
Water Solubility	< 1 g/L at 25°C (Suspended sample in water was shaken for 24 hours, filtered, dried and measured for weight variation. The Dissolved Total Organic Carbon was measured on its filtrate.)
Dissociation Constant	The parent phenolic groups have pKa between 9.59 and 11.30.
Particle Size	3 mm pellet
Reactivity	Stable under normal environmental conditions
Degradation Products	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>
Tonnes	30-100	30-100	30-100	30-100	30-100

##### Use

Thermoplastic moulding of high compression parts for general machinery and automobiles.

##### Mode of Introduction and Disposal

The notified polymer will be introduced in the form of clear colourless 3 mm pellets, packaged in 25 kg poly bags, and 500 kg and 1,000 kg Octabins with a waterproof liner, depending on each specific customer's equipment and specifications. It will be imported by sea through the ports of Melbourne and Sydney.

#### 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 exposure may potentially occur during certain processes involving the notified polymer. However, exposure to significant amounts of the notified polymer is limited due to the largely automated processes, and the engineering controls and personal protective equipment likely to be used during such operations. In addition, the notified polymer is not expected to be bioavailable from the imported pellets and finished articles and thus exposure is unlikely.

Inhalation exposure to the notified polymer is unlikely to occur, given the relatively large size of the imported pellets and the fact that dust is not expected to be generated. Residual monomers may be released during the high-temperature moulding process, however, this process is undertaken under local exhaust ventilation, that will minimise exposure.

Overall, the OHS risk presented by the notified polymer is expected to be low, based on the low exposure to workers and the low intrinsic hazard of the polymer.

##### Public Health Risk Assessment

Members of the public may make dermal contact with a range of articles containing the notified polymer. However, exposure is expected to be low because the notified polymer should be bound within a matrix and is unlikely to be bioavailable. Therefore, the risk to public health will be low, given the low exposure and 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 is expected to neither become dispersed in the environment when it is used as proposed, nor cross biological membranes, because of its low water solubility and high molecular weight, and bound within the polymer matrix. Therefore, it will not pose a risk to the environment when it is used as proposed. The release of the notified polymer to the environment during the extrusion of the pellets and manufacture of the injection and extrusion moulded articles occurs principally from the disposal of the waste collected as residues in the imported bags/containers, accidental spills and production wastage. The waste is disposed to landfill (~3%). The notified polymer is not expected to be released into the aquatic compartment. The majority of the notified polymer, after its useful lifespan, will have the same fate as the articles that it's incorporated in. Therefore the majority will be disposed to landfill and some will be thermally decomposed during metal recycling. The notified polymer would be immobile in landfill and is expected to slowly degrade via biotic and abiotic processes.

## 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

- Specific engineering controls, work practices or 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 *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 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 thermoplastic moulding of high compression parts for general machinery and automobiles, 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 notified polymer provided by the notifier was reviewed by NICNAS. The accuracy of the information on the MSDS remains the responsibility of the applicant.