

File No PLC/570

June 2005

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

**FULL PUBLIC REPORT**

**Component B in YT Powder**

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**Director  
NICNAS**

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**FULL PUBLIC REPORT****Component B in YT Powder****1. APPLICANT AND NOTIFICATION DETAILS**

## APPLICANT(S)

Toyota Tsusho (Australasia) Pty. Ltd., ABN: 24 056 847 315  
 231-233 Boundary Road,  
 Laverton North, VIC. 3026

## 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
- Molecular Formula
- Structural Formula
- CAS Number
- Polymer Constituents
- Use Details
- Import Volume
- Molecular weight

## PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)

None

## NOTIFICATION IN OTHER COUNTRIES

The polymer has been subject of a PMN in the USA.

The polymer was notified in Canada (Schedule VI) during 2003

**2. IDENTITY OF CHEMICAL**

## MARKETING NAME(S)

Component B in YT Powder

## MOLECULAR WEIGHT (MW)

Number Average Molecular Weight (Mn) >1000

**3. COMPOSITION**

## PLC CRITERIA JUSTIFICATION

Functional Group	Category	Equivalent Weight (FGEW)
None	Moderate/High Concern	Not Applicable

<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. INTRODUCTION AND USE INFORMATION

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

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>	2-5	2-5	2-5	2-5	2-5

USE

The notified polymer is a component of a moulding resin that will be used in the manufacture of interior automotive parts.

#### 5. PROCESS AND RELEASE INFORMATION

##### 5.1. Operation Description

The notified polymer will not be manufactured in Australia. It will be imported as a component of a moulding resin used to manufacture interior automotive parts. The moulding resin will be imported by sea in 150 kg fibre board drums. The drums will be transported by road from the wharf to the notifiers warehouse at Laverton Victoria where it will be stored until such time as it is ordered by the moulding company.

At the moulding company, no reformulation of the notified polymer will take place. The moulding resin will be transferred from the fibre drums to a hopper prior to being used in the moulding process. The transfer process will involve lifting the fibre drums via a forklift to a mezzanine platform adjacent to the top of the hopper. The drums will then be manually poured into the top of the hopper. During the moulding process, the moulding resin is transferred from the hopper by gravity feed to a preheated mould. The mould is then closed and allowed to cool. After cooling, the automotive part is manually removed from the mould, trimmed and stored until such time as it is shipped to the automotive manufacturer where it will be used in the vehicle assembly line.

#### 6. EXPOSURE INFORMATION

##### 6.1. Summary of Occupational Exposure

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

During the moulding process, workers will manually transfer the polymer to the hopper. Workers will wear dust respirators, eye protection and coveralls. Local exhaust ventilation is also installed adjacent to the hopper filling area and the moulding equipment. Exposure from the notified polymer to these workers can occur by either dermal, ocular or inhalation 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 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 to exposure.

## 6.2. Summary of Public Exposure

The notified polymer will not be sold directly to the public. However, the notified polymer will be a component of interior automotive 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 automotive components.

## 6.3. Summary of Environmental Exposure

### 6.3.1. Environmental Release

Release to the environment during shipping, transport and warehousing will only occur through accidental spills or leaks of the fibre drums. 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 0.1% will remain as residue in fibre drums. A further 2% waste will be generated from trimming of automotive components. All waste and "empty" drums 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 interior automotive 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.

### 6.3.2. Environmental Fate

The notified polymer that will go to landfill as waste or as a component of automotive parts will be immobile in the soil due to its low water solubility and because it is bound within the polymer matrix of the automotive components. It is expected that the notified polymer will slowly degrade by biotic and abiotic processes to form oxides of carbon and nitrogen. The polymer that is recycled with automobile bodies will decompose in furnaces to form oxides of carbon and nitrogen.

## 7. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance at 20°C and 101.3 kPa</b>	The notified polymer is a powder that is a component of a powdered moulding resin.
<b>Melting Point/Glass Transition Temp</b>	260 °C
<b>Density</b>	330 kg/m <sup>3</sup> @ 20°C (bulk density)
<b>Water Solubility</b>	0.0034 g/L @25°C
<b>Dissociation Constant</b>	There are no dissociable groups.
<b>Particle Size</b>	1.6 microns approximately. The notified polymer adheres to the larger moulding resin particles (~160 microns) through Van Der Waal forces and thus has reduced potential for dust formation.
<b>Reactivity</b>	Not reactive under normal conditions of use
<b>Degradation Products</b>	None under normal conditions of use.

## 8. HUMAN HEALTH IMPLICATIONS

### 8.1. Toxicology

The following toxicological end-points were submitted:

<i>Endpoint</i>	<i>Result</i>	<i>Classified?</i>	<i>Effects Observed?</i>
1. Rabbit, skin irritation	non-irritating	no	no
2. Genotoxicity - bacterial reverse mutation (Ames)	non-mutagenic	no	no

All results were indicative of low hazard.

**8.2. Human Health Hazard Assessment**

The notified polymer meets the PLC criteria and can therefore be considered to be of low hazard. Limited toxicological studies listed above support this assertion.

**9. ENVIRONMENTAL HAZARDS****9.1. Ecotoxicology**

The following toxicological studies were submitted:

<i>Endpoint</i>	<i>Result and Conclusion</i>
Fish Toxicity ( <i>Oryzias latipes</i> ) The test concentration of 0.60 mg/L was the highest attainable test concentration due to the limited solubility of the test material in water and auxiliary solvent.	96hr LC50 >0.6mg/L NOEC >0.6mg/L

Results are indicative of low hazard because the NOEC is greater than the limit of water solubility of the polymer.

**9.2. Environmental Hazard Assessment**

The notified polymer has a NAMW of greater than 1000 and is not expected to cross biological membranes. It does not contain any medium or high concern reactive functional groups. Ecotoxicological studies indicate that the NOEC is greater than the limit of water solubility of the polymer. Nonionic polymers which have a MW > 1000 are generally of low concern.

**10. RISK ASSESSMENT****10.1. Environment**

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.

**10.2. 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.

**10.3. Public Health**

The notified polymer will not be sold directly to the public and will not be isolated during its use cycle. However, the notified polymer will be a component of interior automotive components that the public will come into contact with.

Exposure will be negligible due to its low concentration (1% w/w), low water and oil solubility, low volatility and because it will be bound within the polymer matrix of the automotive components. Hence it will not be bioavailable.

The notified polymer is therefore expected to pose little or no risk to public health.

**11. CONCLUSIONS – ASSESSMENT LEVEL OF CONCERN FOR THE ENVIRONMENT AND HUMANS****11.1. Environmental Risk Assessment**

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

## 11.2. Human Health Risk Assessment

### 11.2.1. Occupational health and safety

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

### 11.2.2. Public health

There is Negligible Concern to public health when used as a component of automotive parts.

## 12. MATERIAL SAFETY DATA SHEET

### 12.1. Material Safety Data Sheet

The notifier has provided MSDS for the notified polymer and the imported resin in accordance with the schedule item B 12 of the *ICNA Act*. The accuracy of the information on the MSDS remains the responsibility of the applicant.

## 13. 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 (capable of filtering out particles of less than 1.6 microns) and safety glasses be used to minimise exposure to the notified polymer dust, however, these should be selected on the basis of all ingredients in the formulation.
- In the interest of occupational health and safety, the following guidelines and precautions should be observed for use of the notified polymer as introduced in YT powder
  - The level of atmospheric nuisance dust should be maintained as low as possible. The NOHSC exposure standard for atmospheric dust is 10 mg/m<sup>3</sup>.

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.

#### Environment

#### 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.
- The notified polymer should not be allowed to enter drains or waterways.



**13.1. 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.