

File No PLC/636

25 July 2006

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

**FULL PUBLIC REPORT**

**Sovermol 1007**

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 and Heritage.

For the purposes of subsection 78(1) of the Act, this Full Public Report may be inspected at:

Library  
Australian Safety and Compensation Council  
25 Constitution Avenue  
CANBERRA ACT 2600  
AUSTRALIA

To arrange an appointment contact the Librarian on TEL + 61 2 6279 1162 or email [ascc.library@dewr.gov.au](mailto:ascc.library@dewr.gov.au)

This Full Public Report is 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:

Street Address:	334 - 336 Illawarra Road MARRICKVILLE NSW 2204, AUSTRALIA.
Postal Address:	GPO Box 58, SYDNEY NSW 2001, AUSTRALIA.
TEL:	+ 61 2 8577 8800
FAX	+ 61 2 8577 8888.
Website:	<a href="http://www.nicnas.gov.au">www.nicnas.gov.au</a>

**Director  
NICNAS**

## TABLE OF CONTENTS

FULL PUBLIC REPORT.....	3
1. APPLICANT AND NOTIFICATION DETAILS .....	3
2. IDENTITY OF CHEMICAL .....	3
3. PLC CRITERIA JUSTIFICATION .....	3
4. PHYSICAL AND CHEMICAL PROPERTIES .....	4
5. INTRODUCTION AND USE INFORMATION.....	4
6. HUMAN HEALTH IMPLICATIONS.....	5
6.1. Exposure Assessment .....	5
6.2. Toxicological Hazard Characterisation .....	5
6.3. Human Health Risk Assessment.....	5
7. ENVIRONMENTAL IMPLICATIONS .....	6
7.1. Exposure Assessment .....	6
7.2. Environmental Hazard Characterisation .....	6
7.3. Environmental Risk Assessment .....	6
8. CONCLUSIONS.....	6
8.1. Level of Concern for Occupational Health and Safety .....	6
8.2. Level of Concern for Public Health.....	6
8.3. Level of Concern for the Environment.....	6
9. MATERIAL SAFETY DATA SHEET.....	7
9.1 Material Safety Data Sheet.....	7
10. RECOMMENDATIONS .....	7
10.1. Secondary Notification .....	7

**FULL PUBLIC REPORT****Sovermol 1007****1. APPLICANT AND NOTIFICATION DETAILS**

## APPLICANT(S)

Cognis Australia Pty Ltd (ABN: 87 006 374 456)  
4 Saligna Drive  
Tullamarine VIC 3043

## AND

Keppel Prince Engineering Pty Ltd (ABN: 62 004 727 619)  
Darts Road  
Portland VIC 3305

## 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, Use Details, Import Volume.

## VARIATION OF DATA REQUIREMENTS (SECTION 24 OF THE ACT)

Variation to the schedule of data requirements is claimed as follows:

Melting point/Glass transition temp

## PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)

Application for a Commercial Evaluation Permit – August 2005

## NOTIFICATION IN OTHER COUNTRIES

None

**2. IDENTITY OF CHEMICAL**

## MARKETING NAME(S)

Sovermol 1007 (notified polymer in Alexit-Beschichtung 498-91 at 27-32%)

## 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	No
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 does not meet the PLC criteria. However, it is accepted for assessment as a PLC on the following grounds:

- The notified polymer is a polyester manufactured from allowable reactants, and
- The notified polymer satisfies the other PLC criteria.

#### 4. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance at 20°C and 101.3 kPa</b>	Colourless to yellow slightly viscous liquid
<b>Melting Point/Glass Transition Temp</b>	The notified polymer is a liquid at ambient temperatures
<b>Density</b>	1110 kg/m <sup>3</sup> at 20°C
<b>Water Solubility</b>	0.585 g/L at 20°C (mean of three runs) In-house flask method.
<b>Viscosity</b>	This result does not agree with the chemical nature of the polymer which indicates that it will not be water soluble. The TOC analysis measures all the carbon present in the sample not just the notified polymer. The solubility result may pertain to the low molecular weight species and any contaminants present, rather than the notified polymer.
<b>Flash Point</b>	2200 – 4000 mPa s at 20°C
<b>Reactivity</b>	>230°C
<b>Degradation Products</b>	Not expected to be reactive under normal conditions. Not readily degraded. No hazardous degradation products are known.

#### 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>	3-10	3-10	3-10	3-10	3-10

##### USE AND MODE OF INTRODUCTION AND DISPOSAL

###### Mode of Introduction

The notified polymer will be imported as an ingredient of surface coatings (Alexit-Beschichtung 498-91) at a concentration of 27 - 32%. Coatings containing the notified polymer will be transported by sea in robust 200 L drums designed for international transport. The drums are expected to be part of FCL received in Melbourne and unstuffed at the warehouse of the co-notifier.

###### Reformulation/manufacture processes

The notified polymer will not be manufactured or reformulated in Australia.

###### End-use

The paint containing the notified polymer is homogenised either in the drum using an agitator introduced through the large bung hole, or pumped from the drums via a closed system to a sealed homogenisation vessel. The coating is pumped from either the import drum or the vessel to the spray system. The coating passes through a proportioning blender to be blended with the hardener and then

sprayed onto a surface in a spray booth. The polyurethane paint cures on the surface of the object without the application of heat.

#### Use

The notified polymer will be used as an ingredient in surface coatings.

## 6. HUMAN HEALTH IMPLICATIONS

### 6.1. Exposure Assessment

#### OCCUPATIONAL EXPOSURE

Exposure of workers to the notified polymer may occur through dermal, inhalation or ocular routes during homogenisation and blending of the paint. Specifically this may occur when opening drums of product containing the notified polymer and when inserting and removing the drum agitator mixer and transfer pump. Exposure will be minimised by the use of personal protective equipment, including disposable overalls, safety eye goggles or face mask, nitrile gloves, safety boots and fresh air breathing apparatus.

Spray painters may come into contact with the notified polymer through dermal, inhalation and ocular routes. The likelihood of exposure should be minimal as the spray paint is applied in a ventilated spray booth by workers wearing personal protective equipment. After application and once dried, the paint containing the notified polymer is cured into an inert matrix and the polymer is hence unavailable for exposure.

#### PUBLIC EXPOSURE

The public will not be exposed to the notified polymer, except in the unlikely event of a spillage during transport. After application and once dried, the paint containing the notified polymer is cured into an inert matrix and the polymer is hence unavailable for exposure.

### 6.2. Toxicological Hazard Characterisation

The notified polymer is assessed as a PLC and can therefore be considered to be of low hazard. This is supported by toxicological endpoints observed in testing conducted on analogue polyesters made from similar reactants in similar ratios.

<i>Endpoint</i>	<i>Result</i>	<i>Classified?</i>	<i>Effects Observed?</i>
1. Rat, acute oral	LD50 >2000 mg/kg bw by analogy	no	no
4. Rabbit, skin irritation	non-irritating by analogy	no	no
5. Rabbit, eye irritation	non-irritating by analogy	no	no

All results were indicative of low hazard.

### 6.3. Human Health Risk Assessment

#### OCCUPATIONAL HEALTH AND SAFETY

The OHS risk presented by the notified polymer is expected to be low for end users, based on the local controls and the likely low hazard of the polymer.

#### PUBLIC HEALTH

The notified polymer is intended for use by professional spray painters only, and will not be sold to the public. Following application, the notified polymer will become trapped within a film and will not be bioavailable. Therefore, the risk to public from exposure to the notified polymer is considered low.

## 7. ENVIRONMENTAL IMPLICATIONS

### 7.1. Exposure Assessment

#### ENVIRONMENTAL RELEASE

The notified polymer will not be manufactured in Australia. Local operations will include transport and storage, transfer of coating to application equipment and spray application.

Release of the notified polymer to the environment as a result of the use of the coating is expected to be minimal, unless an accidental spillage occurs, and include:

- Container residue and equipment cleaning - less than 2%, less than 200 kg annually
- Overspray - up to 30%, up to 3000 kg annually

All spills will be contained, collected with inert absorbent material (eg diatomaceous earth) and placed in a sealable container ready for disposal to landfill. Modern spray guns have a 70% spray efficiency, thus the overspray will be approximately 30%. As the coating will be applied within a specialised spray booth, all overspray will be contained within filters which will be disposed of to landfill. The application equipment and empty containers will generally be cleaned with thinners. This effluent will be collected and reused if possible otherwise it will be disposed of off-site to a licensed solvent recovery contractor with any generated solids going to landfill. The rinsed empty coating containers will be disposed of via licensed waste contractors.

#### ENVIRONMENTAL FATE

There will be no release to sewer.

Disposal of the notified polymer to landfill is unlikely to present a hazard to the environment. It is expected that while it is moderately water soluble the notified polymer will adsorb to soil or sediments and not be mobile. The notified polymer is likely to slowly degrade via abiotic and biotic means to water and carbon elements.

Due to its high molecular weight the polymer is not expected to bioaccumulate (Connell 1990).

### 7.2. Environmental Hazard Characterisation

No ecotoxicological data were submitted. No aquatic exposure is expected, except through accidental spills. It is expected if any of the notified polymer did enter the aquatic compartment it would adsorb onto particles of sediment and sludge, and would therefore not remain in the water compartment nor be available for assimilation by aquatic organisms.

PLCs without significant ionic functionality are of low concern to the aquatic environment.

### 7.3. Environmental Risk Assessment

The environmental risk presented by the notified polymer is expected to be low based on limited likely exposure 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 a 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

- 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 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

- There are no specific controls on the notified polymer itself to prevent environmental exposure. However, any spills during coating formulation and application must be contained within bunding, and entry into the waterways should be avoided.

#### Disposal

- The notified polymer resulting from overspray during coating application should be disposed of by landfill or be incinerated, if possible;
- Any cleaning effluent should be disposed of via a licensed liquid waste contractor.

#### Emergency procedures

- Spills or accidental release of the notified polymer should be handled by collecting spillage with non-combustible absorbent materials and placing in a suitable container for disposal according to Local, State and Federal Government waste regulations.

### 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.