

File No PLC/420

9 December 2003

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

**FULL PUBLIC REPORT**

**11201212 VBC (Plast) Varnish 802282**

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  
National Occupational Health and Safety Commission  
25 Constitution Avenue  
CANBERRA ACT 2600  
AUSTRALIA

To arrange an appointment contact the Librarian on TEL + 61 2 6279 1161 or + 61 2 6279 1163.

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  
Chemicals Notification and Assessment**

## TABLE OF CONTENTS

FULL PUBLIC REPORT.....	3
1. APPLICANT AND NOTIFICATION DETAILS .....	3
2. IDENTITY OF CHEMICAL .....	3
4. INTRODUCTION AND USE INFORMATION.....	4
5. PROCESS AND RELEASE INFORMATION .....	4
5.1. Operation Description.....	4
Manufacture of Varnish.....	4
Ink formulation .....	4
6. EXPOSURE INFORMATION .....	4
6.1. Summary of Environmental Exposure.....	4
6.2. Summary of Occupational Exposure .....	5
6.3. Summary of Public Exposure .....	5
7. PHYSICAL AND CHEMICAL PROPERTIES .....	5
8. HUMAN HEALTH IMPLICATIONS.....	5
8.1. Toxicology.....	5
8.2. Human Health Hazard Assessment.....	5
9. ENVIRONMENTAL HAZARDS .....	5
9.1. Ecotoxicology.....	5
10. RISK ASSESSMENT .....	6
10.1. Environment .....	6
10.2. Occupational health and safety .....	6
10.3. Public health .....	6
11. CONCLUSIONS – ASSESSMENT LEVEL OF CONCERN FOR THE ENVIRONMENT AND HUMANS.....	6
11.2. Environmental risk assessment.....	6
11.3. Human health risk assessment .....	6
11.3.1. Occupational health and safety .....	6
11.3.2. Public health.....	6
12. MATERIAL SAFETY DATA SHEET .....	7
12.1. Material Safety Data Sheet .....	7
13. RECOMMENDATIONS .....	7
13.1. Secondary notification.....	8

# FULL PUBLIC REPORT

## 11201212 VBC (Plast) Varnish 802282

### 1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)  
SICPA Australia Pty Ltd (ABN: 86 007 114 338)  
3 Millers Road  
BROOKLYN VIC 3025

NOTIFICATION CATEGORY  
Synthetic Polymer of Low Concern

EXEMPT INFORMATION (SECTION 75 OF THE ACT)  
Data items and details claimed exempt from publication:  
Chemical Name  
Other Name  
CAS Number  
Molecular Formula  
Structural Formula  
Number Average Molecular Weight  
Weight Average Molecular Weight  
Weight Percentage of polymer species with MW<1000 and MW<500  
Charge Density  
Polymer Constituents  
Residual Monomer and Impurities  
Reactive Functional Groups- Include FGEW  
Manufacture or Import Volume  
Site of Manufacture or Reformulation

VARIATION OF DATA REQUIREMENTS (SECTION 24 OF THE ACT)  
Variation to the schedule of data requirements is claimed as follows:  
Melting Point  
Density

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)  
None

NOTIFICATION IN OTHER COUNTRIES  
None

### 2. IDENTITY OF CHEMICAL

MARKETING NAME(S)  
11201212 VBC (Plast) Varnish 802282

PLC CRITERIA JUSTIFICATION

<i>Criterion</i>	<i>Criterion met (yes/no/not applicable)</i>
Meets Molecular Weight Requirements	Yes
Meets Functional Group Equivalent Weight (FGEW) Requirements	Yes
Low Charge Density	Yes
Approved Elements Only	Yes
No Substantial Degradability	Yes

Water Absorbing	Yes
Low Concentrations of Residual Monomers	Yes
Hazard Substance or Dangerous Good	Yes

The notified polymer meets the PLC criteria.

#### 4. INTRODUCTION AND USE INFORMATION

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

Year	1	2	3	4	5
Tonnes	<300	<300	<300	<300	<300

##### USE

The notified polymer will be imported as a component of a varnish. The varnish will be used to manufacture of oil-based inks used for the decoration of packaging (generally paper substrate) labelling and literature. This will include non-contact indirect food packaging applications.

#### 5. PROCESS AND RELEASE INFORMATION

##### 5.1. Operation Description

###### Manufacture of Varnish

The components are added to a 10 tonne kettle under nitrogen, mixed at high speed and heated. Liquid components are added to the kettle to quench the temperature. Samples are taken and QC testing undertaken. The varnish is adjusted to specification as required. The final varnish containing the notified polymer will be pumped into drums or bulk road tankers. The estimated maximum concentration of the notified polymer in the finished varnish will be 90%.

###### Ink formulation

The varnish containing the notified polymer will be transferred from bulk storage, by pump or from the 200 L drums and raised by mechanical drum lifter, into mixing vessels. The varnish is blended at high speed with pigments and additives. Blending occurs under local vapour extraction. The resultant blend is pumped to and then ground by "shot mill"/three roll mill. It is then pump filtered and quality controlled. The resultant coloured ink dispersions are packaged into 200 L drums and 20 L pails for use by the notifier. The ink dispersions are vacuum packed in 1 and 2.5 kg tins for sale to industrial customers. Tinning of the ink can be semi manual or mechanical, depending on the volume and use of the product. The estimated maximum concentration of the notified polymer in the finished ink will be 25%.

Intermediate quantities (up to 50 kg) are manufactured by manual decanting, mechanical mixing and manual tinning.

Smaller volumes (up to 5 kg) will be manually mixed and tinned at the manufacture site, state service centres, and customer sites.

At customer sites workers are exposed to the notified polymer at 25% in the finished ink. The finished inks will be used in blended proportions of up to 40%. The final quantities are adjusted against the printing press running performance and loaded onto the printing press, via scoop, pump or cartridge. Some blending of colours may occur at the sites.

#### 6. EXPOSURE INFORMATION

##### 6.1. Summary of Environmental Exposure

Environmental release during importation, storage and transportation is unlikely. Spillage during a transport accident is the most likely reason for environmental release.

The ink formulation process may result in spillage during blending or decanting. These are expected to be minor. Spills should be absorbed with non-combustible absorbents such as sand, earth, vermiculate or similar and will be collected and disposed of by an approved contractor.

The notifier estimates, during use, that residues of the product in containers and on equipment would be approximately 4 % of the total volume, this represents up to 12 tonnes per annum of the notified polymer at market maturity.

Waste notified polymer generated will be disposed of via an authorised carrier approved by the Environmental Protection Agency, and is generally likely to be sent to landfill. It is expected that the empty 200 L drums will be sent to a drum reconditioner or recycler.

Customers are encouraged to use bulk packaging to reduce waste and minimise costs. At the end of its useful life packaging is expected to be sent to landfill, with some recycling

## **6.2. Summary of Occupational Exposure**

Dermal and ocular exposure can occur during certain formulation processes. However, exposure to significant amounts of the notified polymer is limited because of the engineering controls and personal protective equipment worn by workers.

## **6.3. Summary of Public Exposure**

The notified polymer will not be available to the public. Members of the public may come into contact with finished printed products containing the notified polymer.

## **7. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance at 20°C and 101.3 kPa</b>	The polymer will be amber colour dissolved in mineral oil and vegetable oil.
<b>Melting Point/Glass Transition Temp</b>	<b>Degradation temperature:</b> onset point 385°C peak top 456°C.
<b>Density</b>	Not determined
<b>Water Solubility</b>	Not determined
<b>Reactivity</b>	The varnish has hydrophobic properties and is not expected to readily mix with water.
<b>Degradation Products</b>	Stable under normal environmental conditions. On incineration, carbon oxides and water will be produced.

## **8. HUMAN HEALTH IMPLICATIONS**

### **8.1. Toxicology**

No toxicological data were submitted.

### **8.2. Human Health Hazard Assessment**

The notified polymer meets the PLC criteria and can therefore be considered to be of low hazard.

## **9. ENVIRONMENTAL HAZARDS**

### **9.1. Ecotoxicology**

No ecotoxicological data were submitted.

## **10. RISK ASSESSMENT**

### **10.1. Environment**

#### **Exposure**

The majority of the notified polymer will be disposed of to landfill, which is unlikely to present a hazard to the environment, as the product containing the polymer is not soluble in water and thus will not be mobile in either terrestrial or aquatic environments.

Empty drums will be recycled or reconditioned.

In landfill it is expected to associate with soil slowly degrading through abiotic and biotic processes. Due to its high MW the polymer is not expected to bioaccumulate.

Due to large introduction volumes, disposal quantities represents a very high volume (up to 12 tonnes per annum). However this is expected to occur in a dispersed manner, thereby minimising the hazard associated with this disposal.

The main aquatic hazard would occur in the event of accidental spillage. However, the polymer is expected to sink to sediments and remain immobile pending collection and disposal to landfill, due to the expected low solubility of the substance. The MSDS contains adequate directions for dealing with such spills. Accidental spills will be absorbed with non-combustible absorbents such as sand, earth, vermiculate or similar and disposed of by an approved contractor. Should a spill occur it is imperative that all efforts are directed at avoiding the spill entering the waterway.

### **10.2. Occupational health and safety**

The OHS risk presented by the notified polymer is expected to be low. The notified polymer may be present in formulations containing hazardous ingredients. If these formulations 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.

### **10.3. Public health**

The notified polymer 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 bound within a matrix and unlikely to be bioavailable.

## **11. CONCLUSIONS – ASSESSMENT LEVEL OF CONCERN FOR THE ENVIRONMENT AND HUMANS**

### **11.2. Environmental risk assessment**

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

### **11.3. Human health risk assessment**

#### **11.3.1. Occupational health and safety**

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

#### **11.3.2. Public health**

There is Low Concern to public health when used as described in the notification.

## 12. MATERIAL SAFETY DATA SHEET

### 12.1. Material Safety Data Sheet

The notifier has provided MSDS 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

- 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

- The following control measures should be implemented to minimise environmental exposure during (manufacture, formulation, use) of the notified polymer:
  - Do not pour residues down the drain. Empty import/product containers should be recycled/reconditioned. Disposal of empty varnish containers via domestic recycling programs may differ between local authorities. Check with your local council first

#### Disposal

- The notified polymer should be disposed of by landfill.

#### Emergency procedures

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

### **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.

No additional secondary notification conditions are stipulated.