

File No SAPLC/76

28 November 2007

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

**FULL PUBLIC REPORT**

**Polymer in Unidic V-3219**

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 Water Resources has screened this assessment report. The data supporting this assessment will be subject to audit by NICNAS.

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:

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 .....	3
5. INTRODUCTION AND USE INFORMATION .....	4
6. HUMAN HEALTH IMPLICATIONS .....	4
6.1. Exposure Assessment .....	5
6.2. Toxicological Hazard Characterisation .....	5
6.3. Human Health Risk Assessment .....	5
7. ENVIRONMENTAL IMPLICATIONS .....	5
7.1. Exposure Assessment .....	5
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 .....	6
9.1. Material Safety Data Sheet .....	6
10. RECOMMENDATIONS .....	6
11. REGULATORY OBLIGATIONS .....	7

**FULL PUBLIC REPORT****Polymer in Unidic V-3219****1. APPLICANT AND NOTIFICATION DETAILS**

## APPLICANT

DIC Australia Pty. Ltd. (ABN 12 000 079 550)  
323 Chisholm Rd  
AUBURN NSW 2144

## 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 and Structural Formulae, Molecular Weight, Polymer Constituents, Residual Monomers/Impurities, Use Details, Details of Import Volume.

## PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)

None

## NOTIFICATION IN OTHER COUNTRIES

Unknown

**2. IDENTITY OF CHEMICAL**

## MARKETING NAME(S)

Polymer in Unidic V-3219

## MOLECULAR WEIGHT (MW)

Number Average Molecular Weight (NAMW) >1000

The notified polymer contains only low concern functional groups.

**3. PLC CRITERIA JUSTIFICATION**

<i>Criterion</i>	<i>Criterion met</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**

<b>Appearance at 20°C and 101.3 kPa</b>	Clear, colourless to amber liquid (notified polymer).
<b>Melting Point/Glass Transition Temp</b>	Not applicable. The notified polymer is not isolated from the ink solution in which it is imported.
<b>Density</b>	1000 to 1200 kg/m <sup>3</sup> at 25°C (notified polymer)
<b>Water Solubility</b>	Expected to be low due to predominance of hydrophobic groups.
<b>Reactivity</b>	The notified polymer is not expected to be reactive under normal conditions of use and handling. While the notified polymer contains hydrolysable functionality, this is not expected to occur in the environmental pH range of 4-9.
<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>	3-10	3-10	3-10	3-10	3-10

### USE AND MODE OF INTRODUCTION AND DISPOSAL

#### Mode of Introduction

The notified polymer will not be manufactured in Australia. It will be imported by sea as a component (15-20% (w/w)) of a range of UV curable printing inks. The finished printing inks will be imported in 10 litre plastic pails. Upon arrival at ports in Sydney and/or Melbourne the inks containing the notified polymer will be transported by road to the notifier's warehouse where they will be stored under cover until such time that they are transported to up to five companies throughout Australia. The notified polymer will not be manufactured in Australia. It will be imported by sea as a component (15-20% (w/w)) of a range of UV curable printing inks. The finished printing inks will be imported in 10 litre plastic pails. Upon arrival at ports in Sydney and/or Melbourne the inks containing the notified polymer will be transported by road to the notifier's warehouse where they will be stored under cover until such time that they are transported to up to five companies throughout Australia.

#### Reformulation/manufacture processes

No reformulation of the imported printing inks will take place in Australia.

#### Use

The notified polymer is a component of a range of UV curable printing inks. The printing inks will be used to print a range of cardboard food containers.

## 6. HUMAN HEALTH IMPLICATIONS

## **6.1. Exposure Assessment**

### **OCCUPATIONAL EXPOSURE**

Transport and warehousing workers may come into dermal and ocular contact with the notified polymer through accidental leaks and spillages from ink containers.

During use, printing workers will manually transfer inks to ducts on the printing unit. Potential exposure will mainly be via dermal or ocular contact. However, exposure will be minimised by workers wearing impermeable gloves, eye protection and coveralls. Additionally, local exhaust ventilation adjacent to the printing unit will minimise exposure via inhalation.

Following printing, the printed article is exposed to UV light that causes the printing ink to fully cross-link. The notified polymer will become part of the polymer matrix. Hence, the notified polymer is no longer available for exposure.

### **PUBLIC EXPOSURE**

Neither the notified polymer, nor inks containing it, will be sold to the public. The public will come into contact with cured inks containing the notified polymer. However, after application and once cured, the notified polymer becomes part of the inert polymer matrix and is hence unavailable for exposure.

## **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.

## **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 to the public. The public will come into contact with cured inks containing the notified polymer. However, once the polymer becomes part of the inert polymer matrix it will not be bioavailable. Risk to the public is considered low, based on low hazard and very low exposure.

# **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.

It is estimated that up to 1% of the notified polymer will remain in ink residues in “empty” ink containers. Up to a further 5% will be lost during printing unit cleaning and contained in cleaning rags. In both cases, the ink residue will cross-link to form an inert polymer matrix. It is expected that both the empty ink containers and cleaning residues will be disposed of to licensed waste landfill sites.

The remainder of the notified polymer will be contained on printed articles that will be disposed of by either recycling, incineration or to licensed waste landfill sites.

During recycling processes, waste paper is repulped using a variety of alkaline, dispersing and wetting agents, water emulsifiable organic solvents and bleaches. These agents enhance fibre separation, toner detachment from the fibres, pulp brightness and the whiteness of paper. These aqueous wastes are expected to go to sewer. Very little of the notified polymer is expected to partition to the supernatant water which is released to the sewer. Sludge generated during the washing process is dried and incinerated or sent to landfill for disposal.

**ENVIRONMENTAL FATE**

During application and disposal of waste, the notified polymer will become part of the ink polymer matrix. 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 ink polymer in landfill will associate with organic phases of soil and sediments, and slowly degrade to simple carbon compounds. During incineration, the polymer will be destroyed, releasing water and oxides of carbon.

**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 application and end use of the notified polymer. It is envisaged up to 6% waste would be generated from the application and disposal processes. These wastes would be cured and solidified before being collected by licensed waste contractors and be disposed of to landfill. Waste generated from end users will be either recycled or disposed of in approved landfills as inert solid waste. In landfill, the solid wastes will not be mobile and will degrade slowly by biotic and abiotic processes 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 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.

**Disposal**

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

#### Emergency procedures

- Spills/release of the imported product containing the notified polymer not be allowed into drains or waterways. Spills should be handled by absorbing with sand or other inert absorbent material and put into suitable container for disposal.

## 11. REGULATORY OBLIGATIONS

This risk assessment is based on the information available at the time of notification. The Director may call for the reassessment of the chemical 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 chemical, have post-assessment regulatory obligations to notify NICNAS when any of these circumstances change. These obligations apply even when the notified chemical 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 chemical has changed from a component of a UV curable printing ink used to print cardboard or plastic food containers or is likely to change significantly;
  - the amount of chemical being introduced has increased from 10 tonnes per annum, or is likely to increase, significantly;
  - if the chemical 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.