

File No PLC/886

December 2009

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

**FULL PUBLIC REPORT**

**Neji-16 in Epson Ink**

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****Neji-16 in Epson Ink****1. APPLICANT AND NOTIFICATION DETAILS**

## APPLICANT(S)

Epson Australia Pty Ltd (ABN 91 002 625 783)  
3 Talavera Road  
North Ryde NSW 2113

## 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, Import Volume, Details of Use

## 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

USA

**2. IDENTITY OF CHEMICAL**

## MARKETING NAME(S)

Neji-16

## 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  
N/A  
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: Lemon yellow / brown clear viscous liquid  
Melting Point/Glass Transition Temp 0°C

Density	1040 kg/m <sup>3</sup> (temperature not specified)
Water Solubility	Not determined. The notified polymer is expected to be insoluble in water based on the arrangement of hydrophobic monomers in the polymer.
Reactivity	Stable under normal environmental conditions. Hydrolysis is not expected to occur in the environmental pH range of 4-9 despite the presence of potentially hydrolysable functionalities in the notified polymer.
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	<1	<1	<1	<1	<1

#### Mode of Introduction and Disposal

The notified polymer is a component of printer ink at <3%. The ink will be imported in sealed cartridges, which will be used for printing of paper.

#### Use

Ingredient of printer ink, for use by workers and the public.

## 6. HUMAN HEALTH IMPLICATIONS

### Hazard Characterisation

No toxicological data were submitted. The notified polymer meets the PLC criteria and would therefore be considered to be of low hazard. However it has structural similarities to a chemical which is classified as a hazardous substance for reproductive effects. As the notified polymer contains a moderate proportion of species with molecular weight <1000, the possibility of adverse effects cannot be ruled out if high human exposure occurred.

### Occupational Health and Safety Risk Assessment

Dermal and inhalation exposure to the notified polymer may occur when replacing spent ink cartridges. However, the concentration of the notified polymer in the ink is low (<3%), and the design of the cartridges is such that exposure to the notified polymer should be low. Once the ink dries, the chemical would be trapped in the printed paper, and therefore dermal exposure to the notified chemical from contact with the dried ink is not expected.

Although the possibility cannot be ruled out that the notified polymer may have adverse health effects, the OHS risk presented by the notified polymer is not expected to be unacceptable, based on the low exposure to workers during the intended use.

### Public Health Risk Assessment

The scenarios by which the public may be exposed to the notified chemical would involve home use of printers, and are similar to those for office workers. However, it is expected that the public will be using the printer less often than workers and public exposure would therefore be lower. Once the ink dries, the chemical would be trapped in the printed paper, and therefore dermal exposure to the notified chemical from contact with the dried ink is not expected.

Although the possibility cannot be ruled out that the notified polymer may have adverse health effects, the risk to public health presented by the notified polymer is expected not to be unacceptable due to the low potential for exposure of consumers during use of home printers.

## 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 will be imported into Australia as an ingredient of an ink in sealed cartridges, which will be distributed to customers for direct use. Most of the notified polymer will be sent to landfill as a result of disposal of used paper or sludge waste from paper recycling. In landfill, the notified polymer will be slowly degraded, eventually forming water and oxides of carbon. The notified polymer is unlikely to reach aquatic ecosystems and would not be bioavailable to or bioaccumulate in aquatic organisms.

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

## 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

- 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 *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 of 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 ingredient of printer ink imported in sealed cartridges 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;
  - the method of manufacture of the notified polymer in Australia has changed, or is likely to change, in a way that may result in an increased risk of an adverse effect of the notified polymer on occupational health and safety, public health, or the environment;
  - 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 product containing 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.