

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

### POLYMER OF LOW CONCERN PUBLIC REPORT

#### Polymer in SU-U1244

This Assessment has been compiled in accordance with the provisions of the *Industrial Chemicals (Notification and Assessment) Act 1989* (Cwlth) (the Act) and Regulations. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) is administered by the Australian Government 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 Australian Government Department of Sustainability, Environment, Water, Population and Communities.

For the purposes of subsection 78(1) of the Act, this Public Report may be inspected at our NICNAS office by appointment only at Level 7, 260 Elizabeth Street, Surry Hills NSW 2010.

This 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**

April 2013

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## SUMMARY

The following details will be published in the NICNAS *Chemical Gazette*:

| ASSESSMENT<br>REFERENCE | APPLICANT(S)               | CHEMICAL OR<br>TRADE NAME | HAZARDOUS<br>SUBSTANCE | INTRODUCTION<br>VOLUME    | USE                                |
|-------------------------|----------------------------|---------------------------|------------------------|---------------------------|------------------------------------|
| PLC/1122                | Ricoh Australia<br>Pty Ltd | Polymer in SU-<br>U1244   | No                     | ≤ 500 tonnes per<br>annum | Component of inkjet<br>printer ink |

## CONCLUSIONS AND REGULATORY OBLIGATIONS

### **Human Health Risk Assessment**

Based on the assumed low hazard and the assessed use pattern, the notified polymer is not considered to pose an unreasonable risk to the health of workers and the public.

### **Environmental Risk Assessment**

Based on the assumed low hazard and the assessed use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.

### **Health and Safety Recommendations**

- 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.

- Service personnel should wear disposable gloves and ensure adequate ventilation is present when removing spent printer cartridges containing the notified polymer and during routine maintenance and repairs.
- A copy of the (M)SDS should be easily accessible to employees.
- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the *Globally Harmonised System for the Classification and Labelling of Chemicals (GHS)*, as adopted for industrial chemicals in Australia, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation should be in operation.

### **Environmental Recommendations**

- No specific control measures are required to minimise release of the notified polymer to the environment.

### **Disposal**

- The notified polymer should be disposed to landfill.

### **Storage**

- The following precautions should be taken by workers regarding storage of the notified polymer:
  - Store in a segregated and approved area.

- Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (oxidising substances, strong acids, strong bases).

**Emergency Procedures**

- Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.
- Spills and/or accidental release of the notified polymer should be handled by physical containment, collection and subsequent safe disposal.

**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 a component of inkjet printer ink, 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;
  - additional information has become available to the person as to an adverse effect of the notified polymer 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 (M)SDS of a product containing the notified polymer was provided by the applicant. The accuracy of the information on the (M)SDS remains the responsibility of the applicant.

**ASSESSMENT DETAILS****1. APPLICANT AND NOTIFICATION DETAILS****Applicants**

Ricoh Australia Pty Ltd (ABN: 30 000 593 171)  
8 Rodborough Road  
Frenchs Forest NSW 2086

**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 and import volume.

## 2. IDENTITY OF POLYMER

### Marketing Name(s)

SU-U1244 (Aqueous dispersion containing the notified polymer)

### Molecular Weight

Number Average Molecular Weight (Mn) is > 10,000 Da

## 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

|                                     |  |
|-------------------------------------|--|
| Appearance at 20 °C and 101.3 kPa   | White solid  |
| Melting Point/Glass Transition Temp | Decomposes at > 200 °C   |
| Density                             | 990.2 kg/m <sup>3</sup> at 20 °C   |
| Vapour Pressure                     | 4.88 × 10 <sup>-10</sup> kPa at 25 °C  |
| Water Solubility                    | 0.005 g/L at 20 °C (OECD 105)  |
| Dissociation Constant               | Notified polymer is a salt and is expected to be ionised under environmental conditions (pH 4-9) |
| Reactivity                          | Stable under normal environmental conditions   |
| 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      | < 500    | < 500    | < 500    | < 500    | < 500    |

### Use

The notified polymer will not be manufactured in Australia. The notified polymer will be imported as a component of finished commercial inkjet printer inks at up to 5% concentration. The notified polymer will be used in commercial wide format inkjet printing systems as an overcoat product intended to increase print durability.

## 6. HUMAN HEALTH RISK ASSESSMENT

No toxicological data were submitted. The notified polymer meets the PLC criteria and is therefore assumed to be of low hazard. The risk of the notified polymer to occupational and public health is not considered to be unreasonable given the assumed low hazard and the assessed use pattern.

## 7. ENVIRONMENTAL RISK ASSESSMENT

No ecotoxicological data were submitted. Anionic polymers are known to be moderately toxic to algae. The mode of toxic action is over-chelation of nutrient elements needed by algae for growth. The highest toxicity is when the acid is on alternating carbons of the polymer backbone. However, this is unlikely to apply to the notified polymer and it is therefore not considered to be an over-chelation hazard to algae.

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 for paper printing. It is assumed that 50% of the printed paper will end up in landfill and the rest will undergo paper recycling processes. During the recycling processes, waste paper is repulped using a variety of chemical agents, which, amongst other things, enhance detachment of inks from the fibres. The notified polymer is an anionic polymer with limited solubility and may not be fully recovered by on site waste water treatment at paper recycling facilities. Small quantities of the polymer may therefore be released to surface waters as a result of the de-inking process. However, the notified polymer is not expected to be a toxic hazard to aquatic organisms and it is not expected to be released at ecotoxicologically relevant concentrations. Based on its high molecular weight, the notified polymer is not expected to cross biological membranes and is therefore not likely to bioaccumulate. Most of the notified polymer will reach 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 oxides of carbon and nitrogen, and water. Therefore, based on its assumed low hazard and assessed use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.