

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

**POLYMER OF LOW CONCERN PUBLIC REPORT**

**P338**

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

This 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:

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**Director  
NICNAS**

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## SUMMARY

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

ASSESSMENT REFERENCE	APPLICANT(S)	CHEMICAL OR TRADE NAME	HAZARDOUS SUBSTANCE	INTRODUCTION VOLUME	USE
PLC/1321	Kyocera Document Solutions Australia Pty Ltd	P-338	No	≤ 1 tonnes per annum	Additive in printer toner

## 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 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 of 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.

### **Disposal**

- Where reuse or recycling are not appropriate, dispose of the notified polymer in an environmentally sound manner in accordance with relevant Commonwealth, state, territory and local government legislation.

### **Emergency Procedures**

- 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 an additive in printer toner, 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 the notified polymer and products containing the notified polymer were 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

Kyocera Document Solutions Australia Pty Ltd (ABN: 77 003 852 444)  
Level 3  
6-10 Talavera Road  
NORTH RYDE NSW 2113

#### Exempt Information (Section 75 of the Act)

Data items and details claimed exempt from publication: chemical name, CAS number, molecular and structural formulae, molecular weight, polymer constituents, residual monomers/impurities and import volume.

### 2. IDENTITY OF POLYMER

#### Marketing Name(s)

P-338

#### Molecular Weight

Number Average Molecular Weight (Mn) is > 1,000 Da.

### 3. PLC CRITERIA JUSTIFICATION

<i>Criterion</i>	<i>Criterion met</i>
Molecular Weight Requirements	Yes
Functional Group Equivalent Weight (FGEW) Requirements	Not applicable
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	Polymer decomposes prior to melting
Density	1,000 – 1,200 kg/m <sup>3</sup> at 25 °C
Water Solubility	4.6 mg/L
Dissociation Constant	The notified polymer does not contain any functional groups that are expected to dissociate in water.
Particle Size	Introduced as a fine powder
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	< 1	< 1	< 1	< 1	< 1

**Use**

The notified polymer will be used as a component of toner (at a concentration of < 5%) for use in commercial printers. The toner (containing the notified polymer) will be imported in sealed cartridges. No manufacture, reformulation or repackaging will occur in Australia. Used cartridges may be recycled.

**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.

Although not considered in this risk assessment, NICNAS notes that the notified polymer contains residual monomers that are classified as hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), as adopted for industrial chemicals in Australia. These are not present in the notified polymer as introduced above the cut off concentrations for classification.

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. Polymers without significant ionic functionality are generally of low concern to the environment.

The notified polymer will be imported as a component of printer toner in ready-to-use cartridges. The cartridges are designed to prevent release of contents during transport, installation and removal. Accidental spills are expected to be contained and disposed of to landfill.

The toner will be used on printing articles and the notified polymer, bound within the dried toner matrix, will share the fate of the article. It is anticipated that approximately half of these articles will be disposed of to landfill and the remainder will be recycled at the end of their useful lifetime. During the recycling process, waste paper will be repulped using a variety of alkaline dispersing and wetting agents, water emulsifiable organic solvents and bleaches. Aqueous wastes containing these agents are expected to be sent to sewage treatment plants (STPs) for processing. Under a worst case scenario it will be assumed that 50% of the notified polymer will be washed into sewers. Assuming 0% of the notified polymer will be removed *via* absorption to sludge in the STP, the resultant predicted environmental concentration (PEC) in sewage effluent on a nationwide basis is estimated as 0.43 µg/L [ $\text{PEC}_{\text{river}} = 1.92 \text{ kg notified polymer/day} \div (150 \text{ L/person/day} \times 22.613 \text{ million people}) \times 1 \text{ (dilution factor)}$ ]. The PEC is below the EC50 for algae of the most toxic polymers ( $\text{EC}_{50} > 1 \text{ mg/L}$ ). In sewage treatment plants, most of the notified polymer is expected to partition to sludge and sediments as it has high molecular weight.

Due to its high molecular weight, the notified polymer is not expected to readily cross biological membranes and, therefore, bioaccumulation is not expected.

The proportion of the notified polymer that is adsorbed to STP sludge will be disposed of to landfill or may be used for soil remediation, where it is expected to slowly degrade to form water and oxides of carbon.

Therefore, based on its assumed low hazard, the notified polymer is not considered to pose an unreasonable risk to the environment.