

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

POLYMER OF LOW CONCERN PUBLIC REPORT

PU-77

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.

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:

Street Address: Level 7, 260 Elizabeth Street, SURRY HILLS NSW 2010, AUSTRALIA.
Postal Address: GPO Box 58, SYDNEY NSW 2001, AUSTRALIA.
TEL: + 61 2 8577 8800
FAX: + 61 2 8577 8888
Website: www.nicnas.gov.au

**Director
NICNAS**

November 2015

Table of Contents

| | |
|---|---|
| SUMMARY | 2 |
| CONCLUSIONS AND REGULATORY OBLIGATIONS..... | 2 |
| ASSESSMENT DETAILS..... | 4 |
| 1. APPLICANT AND NOTIFICATION DETAILS..... | 4 |
| 2. IDENTITY OF POLYMER | 4 |
| 3. PLC CRITERIA JUSTIFICATION | 4 |
| 4. PHYSICAL AND CHEMICAL PROPERTIES..... | 4 |
| 5. INTRODUCTION AND USE INFORMATION | 4 |
| 6. HUMAN HEALTH RISK ASSESSMENT..... | 5 |
| 7. ENVIRONMENTAL RISK ASSESSMENT | 5 |

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/1306 | HP PPS Australia Pty Ltd | PU-77 | No | ≤ 3 tonnes per annum | Component of inks |

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.

- 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, 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

HP PPS Australia Pty Ltd (ABN: 16 603 480 628)
353 Burwood Highway
FOREST HILLS VIC 3131

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)

PU-77

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 | 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 | Colourless liquid |
| Melting Point/Glass Transition Temp | Not determined (imported in liquid formulations) |
| Density | Not determined |
| Water Solubility | Not determined. Not expected to be soluble based on molecular weight and chemical structure |
| Dissociation Constant | pKa = 4.4 (based on the monomer). Not expected to be ionised based on low expected water solubility |
| 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 | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 |

Use

The notified polymer will not be manufactured or reformulated in Australia. It will be imported as a component of printing inks at $\leq 3\%$ concentration in sealed inkjet printer cartridges of 30-775 mL capacity that will be supplied to commercial and retail customers.

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 generally of low toxicity to fish and daphnia, however they 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, which does not apply to the notified polymer. The toxicity to algae is likely to be further reduced due to the presence of calcium ions in environmental waters, which will bind to the functional groups.

The notified polymer will be imported into Australia as a component of printing inks in sealed cartridges, which will be distributed to commercial facilities for printing onto paper substrates. Spills or accidental leaks of the product containing the notified polymer are expected to be collected with absorbents and disposed of to landfill in accordance with local government regulations. It is assumed that 50% of the printed paper will end up in landfill, and the remainder will undergo paper recycling processes. During recycling processes, waste paper is repulped using a variety of chemical agents which, amongst other things, enhance detachment of inks from the fibres. Very little of the notified polymer is expected to partition to the supernatant water, due to its high molecular weight and low expected solubility in water. Based on its high molecular weight and low water solubility, the notified polymer is not expected to cross biological membranes, and is therefore unlikely to bioaccumulate.

All wastes, including container residues, accidental spill waste, and sludge waste from paper recycling, are expected to be disposed of to landfill or by incineration. Based on its high molecular weight and chemical structure, the notified polymer is not expected to be readily biodegradable. In landfill, the notified polymer is expected to eventually degrade by biotic and abiotic processes to form water and oxides of carbon and nitrogen.

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