File No PLC/1091

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

**POLYMER OF LOW CONCERN PUBLIC REPORT**

**Polymer in NeoPac E-122**

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**


November 2012

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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/1091 | ResChem Technologies Pty Ltd | Polymer in NeoPac E-122 | No | ≤ 50 tonnes per annum | A component of floor and industrial coatings |

# 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 MSDS should be easily accessible to employees.

- Spray application should be carried out in accordance with the Safe Work Australia *National Guidance Material for Spray Painting* [NOHSC (1999)].

- 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.

**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 a component of floor and industrial coatings, 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 MSDS of a product containing the notified polymer was provided by the applicant. The accuracy of the information on the MSDS remains the responsibility of the applicant.

## ASSESSMENT DETAILS

### 1. APPLICANT AND NOTIFICATION DETAILS

**Applicants**
ResChem Technologies Pty Ltd (ABN 90 315 656 219)
1103/4 Daydream Street
WARRIEWOOD NSW 2102

**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, reactive functional groups polymer constituents, residual monomers/impurities and use details.

### 2. IDENTITY OF POLYMER

**Marketing Name(s)**
NeoPac E-122 (contains up to 20% notified polymer)

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

## 3. PLC CRITERIA JUSTIFICATION

| *Criterion* | *Criterion met* |
|---|---|
| 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 | Blue/yellow slightly opaque liquid* |
| Melting Point/Glass Transition Temp | Imported in an aqueous dispersion |
| Density | 1,050 kg/m$^3$ at 20°C* |
| Water Solubility | Not determined. Expected to be water dispersible based on the presence of hydrophilic functionality and its use in aqueous products. |
| Dissociation Constant | Not determined. The notified polymer is a salt that 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 |

*For the product NeoPac E-122 containing up to 20% notified polymer.

## 5. INTRODUCTION AND USE INFORMATION

**Maximum Introduction Volume of Notified Chemical (100%) Over Next 5 Years**

| *Year* | *1* | *2* | *3* | *4* | *5* |
|---|---|---|---|---|---|
| Tonnes | 50 | 50 | 50 | 50 | 50 |

**Use**
The notified polymer will be imported into Australia in 120 kg drums or 1,050 kg containers by sea to Melbourne, Sydney, Brisbane or Perth at a concentration of up to 20%.

Products containing the notified polymer will be reformulated in Australia. The reformulation processes will be predominantly automated and closed, with the finished products containing up to 15% notified polymer and packaged in 1 to 20 L containers.

The notified polymer will be used in floor and industrial coatings at a concentration of up to 15%. Floor coatings will be applied by brush or roller. Industrial coatings will also be applied by spray.

## 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. 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 also contains potentially cationic functionality, however the cationic charge density is low and the notified polymer is therefore not expected to be of concern to the aquatic environment.

The imported formulation containing the notified polymer will be reformulated into coating products and applied to concrete and parquet floors, in addition to use as industrial wood lacquers. The notified polymer may be released to the environment during reformulation as spills or leaks. These releases are expected to be collected with inert material and disposed of to landfill. Small amounts of the notified polymer may be released to sewer from the cleaning of reformulation and application equipment. However, due to its high molecular weight the notified polymer is not expected to cross biological membrane and is therefore unlikely to bioaccumulate. The main release during industrial application is from overspray, which will typically entail landfill disposal after interception by spray booth filters. Notified polymer residues in empty containers and on discarded applicators are anticipated to be handed as solid waste and be disposed of to landfill. Discarded coated articles containing the notified polymer are expected to be eventually disposed of to landfill. In landfill, the notified polymer incorporated into an inert matrix of cured coating is not expected to be mobile or bioavailable. It will eventually degrade by abiotic and biotic processes to form water and oxides of carbon and nitrogen. 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.