File No PLC/1297

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in NEOPAC PU 480

This Assessment has been compiled in accordance with the provisions of the *Industrial Chemicals (Notification and Assessment) Act 1989* (the Act) and Regulations. This notification has been carried out under the signed cooperative arrangement with Canada. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) is administered by the Department of Health. In conjunction with the Department of the Environment, NICNAS conducts the risk assessment for environmental, public health and occupational health and safety.

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

May 2016

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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/1297	Reschem Technologies Pty Ltd	Polymer in NEOPAC PU 480	No	≤ 500 tonnes per annum	Component of paints and coatings

CONCLUSIONS AND REGULATORY OBLIGATIONS

Human Health Risk Assessment
Provided that the recommended controls are being adhered to, in order to reduce worker exposure to triethylamine that is released during drying of the paint films, the notified polymer is not considered to pose an unreasonable risk to the health of workers.

When used in the proposed manner, with labelling of paints regarding ventilation during use and drying, the notified polymer is not considered to pose an unreasonable risk to public health.

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.

Occupational Health and Safety

- A person conducting a business or undertaking at a workplace should implement the following engineering controls to minimise occupational exposure to triethylamine, released from the paint during drying:
  - Mechanical ventilation where possible.

- A person conducting a business or undertaking at a workplace should implement the following safe work practices to minimise occupational exposure to triethylamine, released from the paint during drying:
  - Use in well ventilated areas
  - Avoid contact with skin and eyes
  - Avoid inhalation of vapours during drying of paint

- A person conducting a business or undertaking at a workplace should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to triethylamine, released from the paint during drying:
  - Gloves, coveralls and eye protection
  - Respiratory protection if ventilation is not adequate to reduce inhalation exposure

  Guidance in selection of personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

- Atmospheric monitoring should be conducted to measure workplace concentrations of Ethanamine, *N*,*N*-diethyl- (triethylamine) during use of products containing the notified polymer. Employers should ensure that the exposure standard for Ethanamine, *N*,*N*-diethyl- (HSIS) is not exceeded for all areas where the notified polymer will be handled.

- A copy of the (M)SDS should be easily accessible to employees.

- Spray applications should be carried out in accordance with the Safe Work Australia Code of Practice for *Spray Painting and Powder Coating* or relevant State or Territory Code of Practice.

- 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.

Public Health

- To protect public health, the hazards of triethylamine as released in vapour form from the drying of paint containing the notified polymer, and the consequential potential risk to the public, should be considered. Therefore the following measures should be taken by marketers of paints and coatings intended for DIY use, to minimise public exposure to triethylamine:
  - Labelling of paints, recommending that they be used only in well ventilated areas
  - Labelling of paints, recommending avoidance of breathing the vapours during drying.

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 component of paints and 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 (M)SDS of 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
Reschem Technologies Pty Ltd (ABN: 90 315 656 219)
Suite 1103/4 Daydream Street
WARRIEWOOD NSW 2102

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, use details and import volume.

Previous Notification in Australia by Applicant(s)
None

Notification in Other Countries
The notified polymer was assessed under the Schedule 9 RRR criteria in Canada (2009)

2. IDENTITY OF POLYMER

Marketing Name(s)
Neopac PU 480 (product containing the notified polymer)

Molecular Weight
Number Average Molecular Weight (Mn) is > 1,000 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	White liquid
Glass Transition Temp	Not determined; the polymer is liquid at ambient temperature
Density	1-1.1 kg/m^3 at 23 °C
Water Solubility	Not determined. Based on its high molecular weight and predominantly hydrophobic structure, the notified polymer is expected to have low water solubility.
Dissociation Constant	Not determined. The notified polymer contains ionisable functionalities which are expected to be ionised in the environmental pH range (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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	< 500	< 500	< 500	< 500	< 500

Use
The notified polymer will not be manufactured in Australia. It will be imported into Australia in formulation at ≤ 50% concentration in containers ranging in sizes from 205 L to 1,000 L. The notified polymer will be reformulated into paints at <45% concentration and will be distributed to retail outlets for use by professional painters and general public.

6. HAZARDASSESSMENT

The notified polymer meets the PLC criteria and is therefore assumed to be of low hazard. However the notified polymer contains Ethanamine, *N*,*N*-diethyl- (CAS No. 121-44-8) as counter ion, which is stated to be released into the atmosphere during drying of the fresh paint. This chemical is also known as triethylamine or TEA.

Triethylamine is listed on the Safework Australia Hazardous Substances Information System (HSIS) with the following risk phrases:

R11: Highly flammable;
R35: Causes severe burns;
R20/21/22: Harmful by inhalation / harmful in contact with skin / harmful if swallowed ;

and is classified for irritation effects down to 1% concentration. Triethylamine has an Australian exposure standard for the workplace of 8 mg/m^3 (2 ppm) time weighted average (TWA) and 17 mg/m^3 (4 ppm) short-term exposure limit (STEL).

Based on the proposed maximum use concentration of the notified polymer in paints, in a worst case scenario the maximum amount of triethylamine liberated during drying would be 1.1 g/m^2 of painted surface. The concentration of the released chemical in air would vary depending on the volume, air flow and rate of emission from the paint film, however it is expected to exceed the Australian exposure standard in many use scenarios, especially when painting is indoors. Use of engineering controls, safe work practices and personal protective equipment (PPE) would mitigate the exposure and risk to workers. In particular the paint application process should be carried out in well ventilated spaces, and mechanical ventilation used if possible. Dermal and ocular exposure would be reduced by PPE such as gloves, coveralls and eye protection. Where ventilation is not adequate to reduce inhalation exposure, respiratory protection should be used.

Exposure of DIY paint applicators is expected to be similar to that of workers, but less frequent. Warnings on the paint labels regarding use of good ventilation and avoidance of inhalation of paint fumes would reduce the exposure and risk to the public.