File No.: PLC/1566

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in Beckosol AQ 305

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 and Energy.

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

November 2019

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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/1566	Tenaru Timber & Finishes Pty Ltd	Polymer in Beckosol AQ 305	No	≤ 3 tonnes per annum	Component of paints, coatings and concrete sealers

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 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* (Safe Work Australia, 2015) 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.

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 a component of paints, coatings and concrete sealers, 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.

Safety Data Sheet

The SDS of a product containing the notified polymer was provided by the applicant. The accuracy of the information on the SDS remains the responsibility of the applicant.

ASSESSMENT DETAILS

1. APPLICANT AND NOTIFICATION DETAILS

Applicant
Tenaru Timber & Finishes Pty Ltd (ABN: 25 000 588 835)
Unit 9 & 10
350 Edgar Street
CONDELL PARK NSW 2200

Exempt Information (Section 75 of the Act)
Data items and details exempt from publication include: chemical name, other names, CAS number, molecular and structural formulae, molecular weight, polymer constituents and residual monomers/impurities.

2. IDENTITY OF POLYMER

Marketing Name(s)
Beckosol AQ 305 (product containing the notified polymer)

Molecular Weight
Number Average Molecular Weight (Mn) is > 1,000 g/mol.

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*	Milky white liquid
Melting Point/Glass Transition Temperature	Not determined
Density*	1,054.5 kg/m^3 at 20 °C
Water Solubility	Dispersible
Dissociation Constant	Expected to dissociate in the environmental pH range of 4-9
Reactivity	Stable under normal environmental conditions
Degradation Products	None under normal conditions of use

* Refers to polymer in solution. The notified polymer is not isolated from the solvent in which it is prepared.

5. INTRODUCTION AND USE INFORMATION

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

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

Use
The notified polymer will not be manufactured in Australia. It will be imported as a component (≤ 55% concentration) for reformulation into paints, coatings and concrete sealers, or as a component of finished products. Finished products containing ≤ 55% notified polymer will be applied by professional workers and do-it-yourself (DIY) users by brush, roller or 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 for the notified polymer. 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, leading to chelation of essential nutrients. However, this does not 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 a component of formulation for reformulation into end-use paints, coatings and concrete sealers, or as a component of finished product. As estimated by the notifier, up to 1% of the import volume of the notified polymer may be lost due to washing of reformulation equipment. The washing will be collected and disposed of through an approved waste management facility. Release of the products containing the notified polymer in the event of accidental spills or leaks during reformulation, storage and transport is expected to be absorbed on suitable materials and disposed of to landfill, in accordance with local government regulations.

The finished products will be used by both professional workers and the public, and may be applied by brush, roller or spray. The main release of the notified polymer is likely from overspray during use, which will be collected and trapped onto materials such as drop sheets, coveralls and filters before disposal to landfill. The liquid waste from cleaning of professional application equipment is expected to be collected by an approved waste contractor, and disposed of safely. As a worst case scenario, it is assumed that up to 5% of the total annual import volume of the notified polymer used by do-it-yourself (DIY) users may be incorrectly disposed of to the sewer, drains, or ground from waste and washing of application equipment. Assuming the worst-case where DIY users are the vast majority of users and the releases occur nationwide over the entire year with no removal of the notified polymer during wastewater treatment, the predicted environmental concentration (PEC) is estimated to be 0.08 µg/L [5% × 3,000 kg/year ÷ 365 days/year ÷ (24.386 million persons × 200 L/person/day)]. As the notified polymer is expected to be generally of low concern to the aquatic environment, the release of the notified polymer is not expected to lead to ecotoxicologically significant concentrations in the aquatic environment.

Most of the notified polymer is expected to share the fate of the articles to which it has been applied, to either enter metal reclamation process or be disposed of to landfill at the end of their useful lives. During metal reclamation, the notified polymer will thermally decompose to form water vapour and oxides of carbon and nitrogen. As estimated by the notifier, up to 1% of the import volume of the notified polymer

may remain as residues in empty containers which will be rinsed and the rinsate will be disposed of to landfill, in accordance with local government regulations. In landfill, the notified polymer will be present as cured solids and will be neither bioavailable nor mobile. The notified polymer is not expected to bioaccumulate due to its high molecular weight. The notified polymer in landfill is expected to eventually degrade via biotic and abiotic processes to form water and oxides of carbon and nitrogen.

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

BIBLIOGRAPHY

Safe Work Australia (2015) Code of Practice: Spray Painting and Powder Coating, Safe Work Australia, https://www.safeworkaustralia.gov.au/doc/model-code-practice-spray-painting-and-powder-coating.