

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

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in Andecal 08

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**

November 2015

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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/1309	Tenaru Timber & Finishes Pty Ltd	Polymer in Andecal 08	No	< 50 tonnes per annum	Component of 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 (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* (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 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)SDSs of products containing the notified polymer were provided by the applicant. The accuracy of the information on the (M)SDSs remains the responsibility of the applicant.

ASSESSMENT DETAILS

1. APPLICANT AND NOTIFICATION DETAILS

Applicants

Tenaru Timber & Finishes Pty Ltd (ABN: 25 000 588 358)
184-186 Campbell Street
Darlinghurst NSW 2010

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

2. IDENTITY OF POLYMER

Marketing Name(s)

Cetol HLSE (product containing the notified polymer, imported into Australia)
Andecal 08 (product containing the notified polymer, not imported into Australia)
Andecal 08 HD-80 (product containing the notified polymer, not imported into Australia)

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	Liquid*
Melting Point/Glass Transition Temp	Not determined
Density	961 kg/m ³ *
Water Solubility	Not determined. Expected to be low based on the high molecular weight and predominantly hydrophobic structure.
Dissociation Constant	Not determined. The notified polymer is expected to be ionised in the environment due to the presence of ionic moieties.
Reactivity	Stable under normal environmental conditions
Degradation Products	None under normal conditions of use
* Property of a product containing the notified polymer	

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	< 50	< 50	< 50	< 50	< 50

Use

The notified polymer will not be manufactured or reformulated in Australia. The notified polymer will be imported as a component of finished coatings at < 10% concentration. Coatings containing the notified polymer will be used in commercial and do-it-yourself (DIY) applications. The coating products will be applied onto wood substrates by brush, roller or spray applicator.

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. This is likely to apply to the notified polymer. However, the toxicity to algae is likely to be reduced due to the presence of calcium ions in the aquatic compartment which will bind to the acid functional groups.

The notified polymer will not be manufactured or reformulated in Australia; therefore there will be no release of the notified polymer to the environment from these activities. Environmental release during importation, transport and distribution may occur as a result of accidental spills. In the event of a spill, the notified chemical is expected to be contained and collected with an inert absorbent material and disposed of in accordance with local regulations.

The notified polymer will be used as a solvent borne coating for interior and exterior wood substrates by professional painters and in DIY applications. During application of the coating, release to the environment may occur from residues in empty containers (< 5%), spills (< 1%) and from cleaning of equipment (< 1%). The majority of the release will be in the form of polymer adsorbed onto wood. Brushes, spray equipment and rollers will be cleaned by wiping them on newspaper followed by rinsing in water. The used newspaper and any drop sheets, cleaning cloths or rags will be disposed of to landfill. Residues in empty containers and spills (collected using inert material) are expected to be disposed of to landfill. As a worst case scenario it is assumed that 5% of the notified polymer from cleaning of equipment will be released to sewers. Assuming 0% of the notified polymer will be removed via absorption to sludge in the sewage treatment plant, the resultant predicted environmental concentration (PEC) in sewage effluent on a nationwide basis is estimated as 1.51 µg/L [$PEC_{river} = 6.85 \text{ kg notified polymer/day} \div (200 \text{ L/person/day} \times 22.613 \text{ million people}) \times 1 \text{ (dilution factor)}$]. Although the notified polymer has a fragment with acid on alternating carbons, the PEC is well below the EC50 for algae of the most toxic anionic polymers ($EC50 > 1 \text{ mg/L}$). The notified polymer is not expected to reach ecotoxicologically significant concentrations.

Once cured, the coatings containing the notified polymer will form an inert polymer matrix, and the incorporated notified polymer will not be bioavailable. Discarded end use articles containing the notified polymer are expected to be disposed of to landfill, recycled, or subjected to combustion which will entail thermal decomposition of the coating to form water vapour and oxides of carbon. In landfill,

the notified polymer is not expected to be mobile or bioavailable and will eventually degrade by abiotic and biotic processes to water, methane and oxides of carbon. The notified polymer is not expected to be readily biodegradable, but bioaccumulation is not likely based on its high molecular weight. Therefore, the notified polymer is not considered to pose an unreasonable risk to the aquatic environment based on its assessed use pattern.