

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

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in RP4837

This Self Assessment has been compiled by the applicant and adopted by NICNAS in accordance with the provisions of the Industrial Chemicals (Notification and Assessment) Act 1989 (Cwlth) (the Act) and Regulations. This legislation is an Act of the Commonwealth of Australia. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS), administered by the Department of Health and the Department of the Environment have screened this assessment report. The data supporting this assessment will be subject to audit by NICNAS.

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 Full 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 inquiries please contact the NICNAS Administration Coordinator at:

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Director
NICNAS

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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
SAPLC/157	Akzo Nobel Pty Ltd	Polymer in RP4837	No	≤ 300 tonnes per annum	Component of external container 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.
- 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.

Disposal

- The notified polymer should be disposed of to landfill.

Storage

- The following precautions should be taken by workers regarding storage of the notified polymer:
 - Store in a segregated and approved area.

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 external container coatings, or is likely to change significantly;
 - the amount of notified polymer being introduced has increased, or is likely to increase, significantly;
 - the method of manufacture of the notified polymer in Australia has changed, or is likely to change, in a way that may result in an increased risk of an adverse effect of the notified polymer on occupational health and safety, public health, or the environment;
 - 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

Akzo Nobel Pty Limited (ABN 59 000 119 424)
51 McIntyre Road
SUNSHINE NORTH, VIC 3020

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 manufacture volume.

2. IDENTITY OF POLYMER

Marketing Name(s)

RP4837 (containing 50-55% of notified polymer)

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	A clear amber viscous liquid
Melting Point/Glass Transition Temp	The neat polymer is not isolated.
Density	1080 kg/m ³ at 25 °C (For product RP4837)
Water Solubility	Not determined. The notified polymer is expected to be soluble in water due to its predominately hydrophilic structure.
Dissociation Constant	Not determined. The notified polymer is a salt and 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

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	200-300	200-300	200-300	200-300	200-300

Use

The notified polymer will be manufactured in Australia at 50-55% concentration in solvent solution and reformulated for end-use as coating for the external surface of metal food containers.

The notified polymer will be used as a paint vehicle for an industrial application and will not be available to the general public. The thermosetting paint containing the polymer at typically 25% will be applied by rollercoat to metal cans which will be used in the foodstuff industry.

6. HUMAN HEALTH RISK ASSESSMENT

No toxicological data were submitted. The notified polymer meets the PLC criteria and can therefore be considered to be of low hazard.

Although not considered in this risk assessment, NICNAS notes that the notified polymer contains residual monomers that are classified as hazardous according to the Globally Harmonised System for the Classification and Labelling of Chemicals (GHS), as adopted for industrial chemicals in Australia. These are not present in the notified polymer as introduced above the cut off concentrations for classification.

Workers may come into contact with the notified polymer through accidental leaks and spillages during transport, manufacture, reformulation/mixing and application. Potential routes of exposure are

ocular and dermal. Engineering controls such as automated filtering and filling processes, as well as the use of personal protective equipment (PPE), are expected to limit exposure.

Occupational Health and Safety Risk Assessment

The OHS risk presented by the notified polymer is expected to be low, based on the assumed low hazard of the notified polymer as well as the engineering controls and personal protective equipment used by workers.

Public Health and Safety Risk Assessment

The notified polymer will not be sold to the public. The public will come into contact with the finished and dried product on coated foodstuff cans. However, after the polymer is applied and cured it will be contained in an inert matrix, and hence will not be bioavailable for exposure. The risk to the public from exposure to the notified polymer is not considered unreasonable.

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 is not applicable to the notified polymer. Therefore, the notified polymer is not considered to be an over-chelation hazard to algae. The notified polymer is expected to present a low hazard to aquatic organisms.

The notified polymer will be manufactured and reformulated at the same site in Australia. The amount of notified polymer released directly to the aquatic environment is not expected to be significant during manufacture, reformulation and application.

Accidental spills (including during transport and storage) are expected to be contained or collected by bunding, and onto an absorbent material for disposal to landfill. Manufacturing and reformulation equipment residues are expected to be collected and disposed of to landfill. Quality control residues (estimated to be 50 kg notified polymer per annum) are expected to be combined with other waste sludge, where the residual notified polymer may be either collected for disposal to landfill or thermally decomposed.

During use, the amount of notified polymer (in the paint) lost directly to the environment is not expected to be significant. Accidental spills are expected to be cleaned up with absorbent material. The absorbed polymer is expected to be disposed of to landfill. The notifier estimates that equipment cleaning and maintenance may result in approximately 50 kg per annum of notified polymer being disposed of, most likely to landfill by licensed waste handlers. Rejected cans are likely to be treated through metal recycling processes where the fully cross-linked polymer will be thermally decomposed during metal recovery.

It is estimated that approximately 300 kg per annum of notified polymer will be generated as waste from the above manufacturing, reformulation and coating activities.

Most of the notified polymer will be used for metal can coating where it will be cured and thermally decomposed when any coated cans are subject to metal recovery, forming water and oxides of carbon and nitrogen. The wastes of spilled notified polymer produced during coating are expected to be disposed of to landfill. In landfill, the notified polymer has the potential to bind to soil based on its potential to sorb to inorganic matter. The notified polymer in landfill is expected to eventually degrade into water and oxides of carbon and nitrogen. The notified polymer is not expected to be significantly released to the aquatic environment. Therefore, it is not expected to be significantly bioavailable. The notified polymer is not expected to be readily biodegradable. However, it is not expected to bioaccumulate due to its high molecular weight.

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.