

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

**POLYMER OF LOW CONCERN PUBLIC REPORT**

**Polymer in 2915307**

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 (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, has screened this assessment report. The data supporting this assessment will be subject to audit by NICNAS.

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**

December 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
SAPLC/180	Akzo Nobel Pty Ltd	Polymer in 2915307	No	≤ 600 tonnes per annum	Component of internal coatings for food / beverage cans

**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 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 internal coatings for food or beverage cans, 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 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 and import volume.

#### **2. IDENTITY OF POLYMER**

##### **Marketing Name(s)**

2915307 (containing 19-21% of notified polymer)

##### **Molecular Weight**

Number Average Molecular Weight (Mn) is > 1,000 Da

#### **3. PLC CRITERIA JUSTIFICATION**

##### *Criterion*

Molecular Weight Requirements

##### *Criterion met*

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 milky white non-viscous liquid (product)
Melting Point/Glass Transition Temp	Not determined. The neat polymer is never isolated
Density	1020 kg/m <sup>3</sup> at 25°C (for product 2915307).
Water Solubility	Not determined. The notified polymer is expected to be dispersible in water
Dissociation Constant	Not determined. The notified polymer is a salt and is expected to be ionised under environmental conditions (pH 4-9)
Particle Size	Not applicable.
Reactivity	Stable under normal environmental conditions.
Degradation Products	None under normal conditions of use.

**Comments:** The notified polymer is never isolated but is dispersed in water with some organic solvents.

#### 5. INTRODUCTION AND USE INFORMATION

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

Year	1	2	3	4	5
Tonnes	500-600	500-600	500-600	500-600	500-600

##### Use

The notified polymer will be used as a component of thermosetting coatings for the internal surfaces of metal food/beverage containers. The final product containing the notified polymer (~19% w/w) will not be manufactured nor reformulated in Australia and will not be available to the general public. The final product will be shipped in intermediate bulk containers (IBCs or pallet tanks) and bulk plastic bladders (flexitanks) and is to be distributed by road from the port of entry to can-coating facilities.

#### 6. HUMAN HEALTH RISK ASSESSMENT

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

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 involved in the distribution and can-coating process.

While the final product will not be made available to the public, exposure to the notified polymer may occur through exposure to the finished and dried coating in foodstuff cans. However, once the final product is applied and cured, the notified polymer will be contained in an inert matrix, and hence will not be bioavailable for exposure.

The notified polymer is a major component of various coating formulations that are in contact with food or beverages. Australian and New Zealand end users recognize US FDA regulations with regard to food contact compliance. The polymer itself is comprised only of materials listed in the US FDA regulations in 21 CFR Sec 175.300, which provides a positive list of substances permitted for use in

resinous and polymeric coatings in contact with foods. When the finished product 2915307 (containing the notified polymer) is applied and cured as recommended, the resulting film meets the global migration requirements specified in FDA 21 CFR Sec 175.300. That is, the extent of migration of components from the film into the food or beverage is within the specified limits.

Based on the assumed low hazard and low exposure the risk to the public from exposure to the notified polymer is not considered unreasonable.

## **7. ENVIRONMENTAL RISK ASSESSMENT**

### **7.1. Exposure Assessment**

#### **ENVIRONMENTAL RELEASE**

The notified polymer will not be manufactured or reformulated in Australia. The amount of notified polymer released directly to the aquatic environment is not expected to be significant during transport, storage and application. Accidental spills are expected to be contained by bunding or collected onto an absorbent material for disposal to landfill.

During use, the amount of notified polymer (in the coating) lost directly to the environment is not expected to be significant. The product containing the notified polymer will be applied to the substrate by automated spray guns. Accidental spills are expected to be cleaned up with absorbent material and disposed of to landfill. The equipment cleaning and maintenance is expected to result in approximately 100 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. The residues in importation containers are estimated to be 1500 kg of notified polymer per annum. Flexitanks containing residues will be disposed to landfill. IBC's will be recycled and the residues are expected to be disposed of to landfill. Overspray collection (via vacuum exhaust) at users' plants will yield approximately 1800 kg of notified polymer per annum. This will be disposed of to landfill.

#### **ENVIRONMENTAL FATE**

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 land fill 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.

### **7.2. Environmental Hazard Characterisation**

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.

### **7.3. Environmental Risk Assessment**

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