

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

**POLYMER OF LOW CONCERN FULL PUBLIC REPORT**

**Polymer in Alcosperse 747**

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.

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**

July 2015

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## **PUBLIC REPORT**

This assessment report is for an extension of original assessment certificate for Polymer in Alcosperse 747. Based on the submission of new information by the extension notifier, some sections of the original assessment report for Akzo Nobel Pty Limited have been modified.

## **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
EX/196 (PLC/993)	Costco Wholesale Australia Pty Ltd	Polymer in Alcosperse 747	No	≤ 50 tonnes per annum	Component of household laundry detergent

## **CONCLUSIONS AND REGULATORY OBLIGATIONS**

### **Human Health Risk Assessment**

When used in the proposed manner, 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 reported use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.

### **Risk Assessment Relating To Extension Applicant**

The use and environmental fate described in the extension application are not expected to impact the outcomes of the original human health and environmental risk assessment and recommendations.

### **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 MSDS 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 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 must 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 component of laundry detergents, 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***Original notification*

The MSDS of the notified polymer was provided by the applicant. The accuracy of the information on the MSDS remains the responsibility of the applicant.

*Extension Application*

The extension applicant has provided MSDSs of products containing the notified polymer which were reviewed by NICNAS. The accuracy of the information on the MSDS remains the responsibility of the extension applicant.

## **ASSESSMENT DETAILS**

**1. APPLICANT AND NOTIFICATION DETAILS****Holder of Original Assessment Certificate (PLC/993)**

Akzo Nobel Pty Limited (ABN: 59 000 119 424)  
8 Kellaway Place  
WETHERILL PARK, NSW 2164

**Applicant for an Extension of the Original Assessment Certificate**

Costco Wholesale Australia Pty Ltd (ABN: 57 104 012 893)

17-21 Parramatta Rd

LIDCOMBE, NSW 2141

**Exempt Information (Section 75 of the Act)**

Data items and details claimed exempt from publication: chemical name, CAS number, molecular and structural formulae, molecular weight, polymer constituents and residual monomers.

**2. IDENTITY OF POLYMER****Marketing Name(s)**Original Application

Alcosperse 747 (30-50% notified polymer in aqueous solution)

Extension Application

Kirkland Signature Liquid Laundry Detergents (products containing the notified polymer)

Alcosperse 726 (product containing the notified polymer)

**Molecular Weight**

&gt; 1,000 Da

**Reactive Functional Groups**

The notified polymer contains only low concern functional groups.

**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	Colourless to yellow liquid
Freezing point	< 4°C*
Density	~1000 kg/m <sup>3</sup> at 20°C*
Water Solubility	Estimated to be > 400 g/L based on its concentration in aqueous solution. The notified polymer is expected to be water dispersible due to the presence of polar functionality.
Dissociation Constant	Not determined. The notified polymer is a salt and is 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
* For the product Alcosperse 747 which contains 30-50% notified polymer in aqueous solution.	

## 5. INTRODUCTION AND USE INFORMATION

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

#### Original Application

Year	1	2	3	4	5
Tonnes	50-100	50-100	50-100	50-100	50-100

#### Extension Application

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

#### Use

##### Original Application

The notified polymer will not be manufactured in Australia. The notified polymer will be imported into Australia at a concentration of 30-50%, in 205 L drums or 1800 L IBCs (Intermediate Bulk Container). The notified polymer will be reformulated into detergent cleaning products and liquid laundry detergents. The finished products containing the notified polymer at a concentration up to 2% will typically be packaged in 300 mL to 2 L plastic bottles with screw caps.

##### Extension Application

The notified polymer will be imported into Australia as a component of finished liquid laundry detergent at a concentration up to 2%. The laundry detergent will be imported in 5L plastic containers with dispensing caps. No manufacture or reformulation will take place in Australia.

## 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.

## 7. ENVIRONMENTAL RISK ASSESSMENT

#### Original Application

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 unlikely to apply to the notified polymer. Furthermore, the toxicity to algae is likely to be further reduced due to the presence of calcium ions in the aquatic compartment which will bind to the acid functional groups. The majority of the notified polymer is expected to be released to sewer during use as cleaning products and, to a lesser extent, from treated aqueous waste released during formulation. Empty import and product containers containing notified polymer residue are expected to be disposed of to landfill. A predicted environmental concentration in rivers ( $PEC_{river}$ ) for a worst case scenario can be calculated on the assumptions that 100% of the total annual import volume is released to sewer nationwide, and that none of the notified polymer is removed by sewage treatment plant (STP) processes. The  $PEC_{river}$  is 64.7 µg/L if the daily chemical release ( $100,000 \text{ kg}/365 = 274 \text{ kg}$ ) is diluted by the daily effluent production ( $200 \text{ L/person/day} \times 21.16 \text{ million people} = 4,232 \text{ ML}$ ).

The maximum concentration of the notified polymer in rivers following discharge of treated effluent is below the EC50 for algae of the most toxic anionic polymers ( $EC50 \sim 8 \text{ mg/L}$ ). The notified polymer will not bioaccumulate due to its high molecular weight ( $NAMW > 1000$ ) and it is not expected to occur in surface waters at ecotoxicologically significant concentrations. Over time it is expected to disperse and degrade in the environment, ultimately forming water and oxides of carbon. The notified

polymer is therefore not likely to pose an unreasonable risk to the aquatic environment when used and disposed according to the typical use pattern for detergents.

Extension Application

The notified polymer will be imported as a component of finished liquid laundry detergent, and will not be reformulated in Australia. The use scenario is covered under the original notification (PLC/993). The extension application is for an additional 5 tonnes/year which is a relatively small incremental increase in the import volume. Therefore, the nature and extent to the environmental release is not expected to significantly alter the risk assessment.