

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

### POLYMER OF LOW CONCERN PUBLIC REPORT

#### **Linseed oil, polymer with maleic anhydride and pentaerythritol**

This Assessment has been compiled in accordance with the provisions of the *Industrial Chemicals (Notification and Assessment) Act 1989* (Cwlth) (the Act) and Regulations. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) is administered by the Australian Government Department of Health and Ageing, 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 Sustainability, Environment, Water, Population and Communities.

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**

March 2013

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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/1126	Woolworths Limited	Linseed oil, polymer with maleic anhydride and pentaerythritol	No	≤ 20 tonnes per annum	Component of furniture stains

## 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 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 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 to landfill.

### **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 furniture stains 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 MSDS of the notified polymer and products containing the notified polymer were provided by the applicant. The accuracy of the information on the MSDS remains the responsibility of the applicant.

### **ASSESSMENT DETAILS**

#### **1. APPLICANT AND NOTIFICATION DETAILS**

##### **Applicants**

Woolworths limited (ABN: 88 000 014 675)  
3 City View Road  
PENNANT HILLS NSW 2120

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

Data items and details claimed exempt from publication: other names, molecular and structural formulae, molecular weight, reactive functional groups polymer constituents, residual monomers/impurities, use details, and import volume.

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

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

Minwax wood finish (contains notified polymer at  $\leq 15\%$  concentration)

##### **Chemical Name**

Linseed oil, polymer with maleic anhydride and pentaerythritol

##### **CAS Number**

67922-98-9

##### **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	Amber liquid
Melting Point/Glass Transition Temp	-2 °C
Boiling point	> 149 °C
Density	954 kg/m <sup>3</sup> at 25 °C
Water Solubility	Not determined. Expected to be low based on its predominantly hydrophobic structure and high molecular weight.
Dissociation Constant	Not determined. The notified polymer contains functionalities which are expected to be ionised under environmental conditions. However, significant ionisation of the functional groups is not expected due to the limited water solubility of the notified polymer.
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	1-20	1-20	1-20	1-20	1-20

#### Use

The notified polymer will not be manufactured or reformulated in Australia. The notified polymer will be introduced as a component of finished furniture stains at up to 15% concentration. The notified polymer acts as the binder for the stain. The furniture stains will primarily be used by retail consumers, although some end use by contractors is possible. Application to furniture of staining products containing the notified polymer will be by brush or cloth.

### 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. Polymers without significant ionisation are of low concern to the aquatic environment.

The notified polymer will be imported into Australia as a component of finished furniture stains. No release of the notified polymer to the environment is expected from manufacturing and reformulation processes as these activities will not occur locally. Stain will be applied to substrates by brush or cloth. The major release of the notified polymer during application processes may come from the cleaning of application equipment (brushes) and removal of unpenetrated stain from surfaces of the substrate to which it is applied. Cloths or rags used for the cleaning of unpenetrated stain are expected to be disposed of to landfill. For a worst case scenario, it is assumed that 10% of the notified polymer (5% from cleaning of the brushes and 5% from the cleaning of unpenetrated stain) may be released to sewers from the do-it-yourself (DIY) use over 365 days, resulting in 5.48 kg notified polymer being released to sewer daily. Assuming none of the notified polymer will be removed via absorption to sludge in the sewage treatment plants (STPs), the resultant predicted environmental concentration (PEC) in sewage effluent on a nationwide basis is estimated as 1.21 µg/L in rivers [ $\text{PEC}_{\text{river}} = 5.48 \text{ kg notified polymer/day} \div (200 \text{ L water/person/day} \times 22.613 \text{ million people}) \times 1 \text{ (dilution factor)}$ ]. The PEC is well below the EC50 for algae of the most toxic polymers ( $\text{EC}_{50} > 1 \text{ mg/L}$ ). Residues in empty containers, spills and solvent used for cleanup are expected to be collected with inert absorbent material and be disposed according to local waste regulations.

The majority of imported notified polymer is anticipated to be disposed of to landfill along with the articles to which it is applied. Notified polymer will be immobilised within a polymeric film on coated articles and is not expected to be bioavailable nor mobile in this form. Notified polymer that reaches STPs is expected to predominantly sorb to sludge and sediment based on its high molecular weight and limited water solubility. The sludge is expected to be disposed of to landfill or applied to agricultural soils. The notified polymer is not expected to be readily biodegradable, but bioaccumulation is unlikely due to its high molecular weight. In landfill and soil, the notified polymer is expected to eventually degrade by abiotic and biotic processes into water and oxides of carbon. Therefore, the notified polymer is not considered to pose an unreasonable risk to the environment based on its assessed use pattern.