

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

POLYMER OF LOW CONCERN FULL PUBLIC REPORT

HPA100

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 Full 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 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:

Street Address:	Level 7, 260 Elizabeth Street, SURRY HILLS NSW 2010, AUSTRALIA.
Postal Address:	GPO Box 58, SYDNEY NSW 2001, AUSTRALIA.
TEL:	+ 61 2 8577 8800
FAX:	+ 61 2 8577 8888
Website:	www.nicnas.gov.au

**Director
NICNAS**

December 2010

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1. APPLICANT AND NOTIFICATION DETAILS

Applicants

Lubrizol International Inc (ABN 52 073 495 603)
28 River Street
SILVERWATER NSW 2128

Orica Australia Pty Ltd (ABN 99 004 117 828)
1 Nicholson Street
MELBOURNE VIC 3000

Exempt Information (Section 75 of the Act)

Data items and details claimed exempt from publication: chemical name, molecular and structural formulae, molecular weight, polymer constituents, residual monomers/impurities, use details and import volume.

2. IDENTITY OF POLYMER

Marketing Name(s)

HPA100

CAS Number

Not assigned

Molecular Weight

Number Average Molecular Weight (Mn) is > 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:	Clear viscous liquid
Melting Point/Glass Transition Temp	Liquid at room temperature, decomposes before boiling.
Density	~900 kg/m ³ at 15.6°C
Water Solubility	25-50 g/L

The water solubility was determined by shaking 0.5 – 1.0 g of the notified polymer in 20 mL of water until a qualitative

	assessment could be made.
Dissociation Constant	Not determined. The pK_a for the polymer is expected to be about 4 based on the structural information
Reactivity	Stable under normal environmental conditions. The notified polymer contains hydrolysable functional groups. However, hydrolysis is not expected to occur in the environmental pH range 4–9.
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	8-12	8-12	8-12	8-12	8-12

Use

The notified polymer will not be manufactured in Australia.

The notified polymer will be imported into Australia in 20 or 180 kg steel pails and drums at a concentration of 50-100%.

Products containing the notified polymer will be reformulated in Australia.

The notified polymer will be used as a component of car body putties and composite resins at concentrations of up to 3%.

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 unacceptable given the assumed low hazard.

7. ENVIRONMENTAL RISK ASSESSMENT

No ecotoxicological data were submitted. Anionic polymers 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 could apply to the notified polymer. However, the toxicity to algae is likely to be further reduced due to the presence of calcium ions, which will bind to the functional groups.

The imported notified polymer will be reformulated in Australia. During reformulation, it is expected that 2% of the annual import volume of the notified polymer will be lost to spills and the cleaning of reformulation equipment. Any spills are likely to be contained by bunding, and notified polymer collected in aqueous waste is expected to be flocculated and disposed of to landfill. Empty import containers containing 1% notified polymer residue will be disposed to landfill. The majority of products incorporating notified polymer will be used in industrial settings and will be applied mainly by spray or hand-lay-up techniques to moulds. Up to 1% of products containing the notified polymer may be used by do-it-yourself (DIY) consumers. Spills and overspray are expected to be captured by engineering controls and disposed of to landfill. Once cured, the notified polymer is trapped within a highly cross-linked resin matrix or ionically bound with the fillers. The final fate of the notified polymer is expected to be same as the articles containing the polymer which will be disposed of to landfills at the end of their useful life. In landfill, the notified polymer is expected to be trapped in the solid inert film of the resin and is not likely to be bioavailable. Slow degradation of the notified polymer in landfill, or thermal decomposition during metal/plastic reclamation, will form water and

oxides of carbon. The notified polymer is water soluble, expected to be hydrolytically stable and is not likely to be readily biodegradable. Due to the notified polymer's high molecular weight and high water solubility, it is not likely to bioaccumulate although there is low potential for release to the aquatic compartment based on its predominant use as an industrial resin.

The notified polymer is not expected to pose a risk to the environment based on its assumed low toxicity to the aquatic organisms, its low potential to bioaccumulate and limited potential for aquatic exposure.

8. RECOMMENDATIONS

Human Health Risk Assessment

When used in the proposed manner, the notified polymer is not considered to pose an unacceptable risk to the health of workers and the public.

Environmental Risk Assessment

Based on the reported use pattern, the notified polymer is not expected to pose a 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.
- Spray application of products containing the notified polymer should be carried out in accordance with the Safe Work Australia *National Guidance Material for Spray Painting* [NOHSC (1999)].
- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the *Approved Criteria for Classifying Hazardous Substances* [NOHSC:1008(2004)], workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Environmental Recommendations

- No specific control measures are required to minimise release of the notified polymer to the environment, however, these should be selected on the basis of all ingredients in the formulation.

Disposal

- The notified polymer should be disposed of to landfill.

Environment

- 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 car body putties and composite resins, 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 chemical 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 was provided by the applicant. The accuracy of the information on the MSDS remains the responsibility of the applicant.