

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN FULL PUBLIC REPORT

Polymer in RK-69799

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:

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**Director
NICNAS**

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1. APPLICANT AND NOTIFICATION DETAILS

Applicants

DuPont (Australia) Ltd
7 Eden Park Drive
MACQUARIE PARK NSW 2113

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 import volume.

2. IDENTITY OF POLYMER

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:	Light yellow solid
Glass Transition Temp	82 °C (Calculated Flory-Fox Tg)
Density	1.11 kg/m ³ at 23°C
Water Solubility	≤ 4.04 × 10 ⁻³ g/L based on results of a test performed according to OECD TG 120 on an analogue polymer
Dissociation Constant	Not determined. The notified polymer contains functionality that is expected to ionise in the environmental pH range (4-9) with pK _a ~4.
Reactivity	Stable under ambient conditions. Designed to react with other ingredients in the product upon curing at elevated temperatures.
Degradation Products	None under normal conditions of use. Expected to slowly degrade via biotic and abiotic processes over long periods of time to form water and oxides of carbon.

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>
<i>Tonnes</i>	<150	<150	<150	<150	<150

Use

The notified polymer will not be manufactured in Australia. It will be imported into Australia at a concentration of <60% for reformulation into vehicle coating products at <40%. The notified polymer will also be imported in finished products at concentrations of <40%.

The notified polymer will be used as a vehicle coating component resin at <40%.

6. HUMAN HEALTH RISK ASSESSMENT

No toxicological data were submitted. The notified polymer meets the PLC criteria and is therefore expected 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. 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 does not apply to the notified polymer and it is therefore unlikely to be an over-chelation hazard to algae.

A maximum of 4.5% of the imported quantity of notified polymer will be released as container and equipment washings during reformulation and use. The releases will be collected and sent to a licensed waste facility for disposal in accordance with State/Territory regulations. The main release (up to 40% as overspray during use) will typically entail landfill disposal, after interception by spray booth filters. Discarded end use articles containing the notified polymer within the cured paint film will be disposed to landfill, or recycled for metals reclamation which will entail thermal decomposition of the paint to form oxides of carbon and water vapour. In landfill, the notified polymer will be present as a cured solid film and will be neither bioavailable nor mobile. It will slowly degrade in landfill by biotic and abiotic processes. Therefore based on the low assumed hazard to aquatic organisms and low potential for aquatic exposure, the notified polymer is not expected to pose an unreasonable risk to the environment when it is used as proposed.

8. RECOMMENDATIONS

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.
- Spray application 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.

Disposal

- The notified polymer should be disposed to landfill.

Emergency Procedures

- Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.
- 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 surface coatings, or is likely to change significantly;
 - the amount of notified polymer being introduced has increased from 150 tonnes, 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 and product containing the notified polymer were provided by the applicant. The accuracy of the information on the MSDS remains the responsibility of the applicant.