File No PLC/996

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN FULL PUBLIC REPORT

VGP-27960

This Assessment has been compiled in accordance with the provisions of the *Industrial Chemicals (Notification and Assessment) Act 1989* (Cwlth) (the Act) and Regulations. This notification has been carried out under the signed cooperative arrangement with the USA. 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 (ABN 59000716469)
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

Marketing Name(s)
VGP-27960

CAS Number
Not assigned

Molecular Weight
The molecular weight of the notified polymer is greater than 1,000 Da.

Reactive Functional Groups
The notified polymer contains only low concern functional groups.

3. PLC CRITERIA JUSTIFICATION

Criterion	*Criterion met*
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	White semi-opaque white to translucent polymer
Melting Point/Glass Transition Temp	130-170 °C
Density	0.946 kg/m^3 at 20 °C
Water Solubility	≤ 9.3 g/L at 20 °C (Based on the results of a test conducted according to OECD TG 120 on the prepolymer to the notified polymer)
Dissociation Constant	The notified polymer is a salt and is expected to be ionised under environmental conditions.
Reactivity	Stable under normal environmental conditions, as confirmed by stability tests conducted on the prepolymer to the notified polymer (method based on OECD TG 111 and Guideline of National Institute of Environmental Research, Korea)
Degradation Products	None under normal conditions of use

5. INTRODUCTION AND USE INFORMATION

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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	< 10	< 10	< 20	< 50	< 70

Use
The notified polymer will be imported into Australia in polymer dispersion or in finished products containing the notified polymer at a concentration of < 24%. The notified polymer will also be reformulated in Australia. It will be used as a component of a resin system in refinished automotive paints at a concentration of up to 24%. The refinished paints will be applied to automobiles using spray guns in purpose built spray booths.

6. HUMAN HEALTH IMPLICATIONS

No toxicological data were submitted. The notified polymer meets the PLC criteria and is therefore assumed to be of low hazard.

Occupational Health and Safety Risk Assessment
Professional spray painters at refinish shops may encounter dermal, inhalation and ocular exposure to the notified polymer in the imported product (< 24%) and refinished paints during transfer steps (weighing and mixing), spray-application and cleaning. However, exposure to significant amounts of the notified polymer will be limited because the paint will be applied in a ventilated spray booth and personal protective equipment will be worn by workers. After application and once dried, the notified polymer will be crosslinked and unavailable for exposure.

Therefore the risk of the notified polymer to occupational health is not considered to be unreasonable given the assumed low hazard and the assessed use pattern.

Public Health Risk Assessment
The notified polymer is intended for use by professional spray painters in automotive refinish shops. The public may be exposed to the applied coating. However, following application, the notified polymer will become crosslinked and unavailable for exposure. Therefore, the risk to public from exposure to the notified polymer is not considered to be unreasonable.

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 pose an over-chelation hazard to algae.

Up to 55% of the notified polymer (including ≤5% residues in imported end-use containers, ≤40% from overspray and ≤10% waste resulting from mixing and spraying equipment cleaning) is expected to be released during the blending and painting of automobiles and metal surfaces. Residues in end-use containers will be disposed of to landfill or thermally decomposed during metal recycling. Overspray is likely to be captured by engineering controls, and mixing/application equipment will be cleaned with solvent. The collected residues will be recycled or disposed of to landfill. 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, nitrogen and water vapour. In landfill, the notified polymer will be present as a cured solid film and will be neither bioavailable nor mobile. Based on the high molecular weight, the notified polymer is not likely to cross biological membranes and is therefore not expected to bioaccumulate. Therefore, the notified polymer is not expected to pose an unreasonable 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
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.

Disposal
- The notified polymer should be disposed of 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 automotive paint, 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 component of the notified polymer were provided by the applicant. The accuracy of the information on the MSDS remains the responsibility of the applicant.