

File No PLC/951

November 2010

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

FULL PUBLIC REPORT

Polymer in Estarez 7265 Base

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 legislation is an Act of the Commonwealth of Australia. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) is administered by the 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 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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FULL PUBLIC REPORT**Polymer in Estarez 7265 Base****1. APPLICANT AND NOTIFICATION DETAILS**

APPLICANT(S)

Nuplex Industries (Aust) Pty Ltd (ABN 25 000 045 572)
49-61 Stephen Road
BOTANY NSW 2019

NOTIFICATION CATEGORY

Polymer of Low Concern

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 Manufacture Volume.

VARIATION OF DATA REQUIREMENTS (SECTION 24 OF THE ACT)

No variation to the schedule of data requirements is claimed.

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)

None.

NOTIFICATION IN OTHER COUNTRIES

None.

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

Estarez 7265 Base (<70% notified polymer)

MOLECULAR WEIGHT (MW)

Number Average Molecular Weight (Mn) > 1,000 Da

REACTIVE FUNCTIONAL GROUPS

The notified polymer contains only low concern functional groups.

3. PLC CRITERIA JUSTIFICATION*Criterion*

Molecular Weight Requirements
Functional Group Equivalent Weight (FGEW) Requirements
Low Charge Density
Approved Elements Only
Stable Under Normal Conditions of Use
Not Water Absorbing
Not a Hazard Substance or Dangerous Good

Criterion met

Yes
Yes
Yes
Yes
Yes
Yes
Yes

The notified polymer meets the PLC criteria.

4. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa	Clear, pale-yellow semi-solid (Estarez 7265 Base is a clear-hazy liquid). Polymer is not isolated from solvent during manufacturing.
Melting Point/Glass Transition Temp	Expected to be >60 °C, not isolated from solution
Density	1200 kg/m ³ at 25 °C
Water Solubility	Not determined. The notified polymer is a high molecular weight polymer with a predominantly hydrophobic structure and is expected to

Dissociation Constant	have low water solubility. Not determined. The notified polymer may contain terminal carboxylic acid functions. These functions may be ionised in the environmental pH range, but the dissociation constant would be difficult to measure based on the expected low water solubility of the polymer.
Reactivity	Stable under normal environmental conditions. The notified polymer contains hydrolysable functional groups. However, due to the limited water solubility, the rate of hydrolysis is expected to be slow under ambient 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	300-500	300-500	300-500	300-500	300-500

Use

Component of composite for use in the automotive panel and paint industry.

Mode of Introduction and Disposal

Estarez 7265 Base (<70% notified polymer) will be manufactured in Australia and then transported to third party companies for reformulation processes. The finished composite products (<50% notified polymer) will be manually applied by trade and household customers to automotive panels.

6. HUMAN HEALTH IMPLICATIONS

Hazard Characterisation

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

Occupational Health and Safety Risk Assessment

The manufacture of the Estarez 7265 Base (<70% notified polymer) will be carried out in a closed, purpose-built vessel. Dermal and ocular exposure to the notified polymer may occur during quality control testing, packaging and during the cleaning of equipment. However, exposure to significant amounts of the notified polymer will be limited because of the engineering controls in place and the personal protective equipment worn by workers (including overalls, face mask/safety glasses, gloves and boots).

Dermal and ocular exposure to the notified polymer in the manufactured product (<70%) may potentially occur during certain processes at the reformulation site. However, exposure to significant amounts of the notified polymer will be limited because of the automated processes, the engineering controls and the personal protective equipment worn by workers.

The finished products (<50% notified polymer) will be manually applied by professional tradesmen to automotive panels using trowel and floating tools. Dermal exposure to the notified polymer may be minimised through the use of personal protective equipment (e.g. gloves). Following application, the notified polymer will be entrapped and immobile as part of an inert, hardened composite.

Although exposure to the notified polymer could occur during the above processes, the risk to workers is not considered to be unacceptable due to the measures in place to reduce exposure and the assumed low hazard of the notified polymer.

Public Health Risk Assessment

Do-it-yourself (DIY) users may also encounter dermal exposure during application of the finished products containing the notified polymer (<50%). However, the potential for exposure may be minimised through the use of PPE such as gloves. Following application, the notified polymer will be entrapped and immobile as part of an inert, hardened composite. The risk to public health is not considered to be unacceptable due to the assumed low hazard of the notified polymer.

7. ENVIRONMENTAL IMPLICATIONS

Hazard Characterisation

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 any toxicity to algae is likely to be further reduced due to the presence of calcium ions, which will bind to the functional groups.

Environmental Risk Assessment

The notified polymer is not expected to be released to the aquatic environment as a result of local manufacturing or reformulation as the equipment is cleaned with solvent and the waste collected as sludge in settling tanks prior to disposal in landfill. A maximum of 2% of the notified polymer will be released to landfill as a result of the disposal of containers with residual polymer and wastes from cleaning of equipment used in manufacture and reformulation. There is very little potential for aquatic exposure during use as the notified polymer will be irreversibly combined within the cured putty matrix and will share the fate of the automotive components to which the putty containing the notified polymer will be applied. The cross-linked cured putty in the form of dust from sanding, excess solid material and discarded articles will be disposed of to landfill, where it will undergo slow degradation processes via biotic and abiotic pathways, eventually forming water and oxides of carbon. The notified polymer may also be thermally decomposed during metals reclamation from discarded articles that have been patched with the putty.

The notified polymer is not likely to be released into the aquatic environment in a bioavailable form and is therefore not expected to pose a risk to the environment when used in the proposed manner.

8. CONCLUSIONS AND RECOMMENDATIONS**Human health risk assessment**

Under the conditions of the occupational settings described, the notified polymer is not considered to pose an unacceptable risk to the health of workers.

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

Environmental risk assessment

Based on the reported use pattern, the notified polymer is not expected to pose a risk to the environment.

Recommendations**CONTROL MEASURES****Occupational Health and Safety**

- 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.
- 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 *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.

Guidance in selection of personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

Disposal

- The notified polymer should be disposed of to landfill.

Emergency procedures

- Spills and/or accidental release of the notified polymer should be handled by physical containment, collection and subsequent safe disposal.

Regulatory Obligations

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 composite for use in the automotive panel and paint industry, or is likely to change significantly;
 - the amount of notified polymer being introduced has increased, or is likely to increase, significantly;
 - the method of manufacture of the notified polymer in Australia has changed, or is likely to change, in a way that may result in an increased risk of an adverse effect of the notified polymer on occupational health and safety, public health, or the environment;
 - additional information has become available to the person as to an adverse effect of the 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 a product containing the notified polymer provided by the notifier was reviewed by NICNAS. The accuracy of the information on the MSDS remains the responsibility of the applicant.