No PLC/1144

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in Polyplex 7020 and 7088

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

October 2013

Table of Contents

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/1144	Nuplex Industries (Aust) Pty Ltd	Polymer in Polyplex 7020 and 7088	No	≤ 300 tonnes per annum	Component of resin for flooring

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 (M)SDS 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 of to landfill.

Storage

- The following precautions should be taken by workers regarding storage of the notified polymer:
  - Store in a segregated and approved area.
  - Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (oxidising substances, strong acids, strong bases).

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 component of resin for flooring, , 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 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 MSDSs of the products containing the notified polymer were provided by the applicant. The accuracy of the information on the MSDSs remains the responsibility of the applicant.

ASSESSMENT DETAILS

1. APPLICANT AND NOTIFICATION DETAILS

Applicants
Nuplex Industries (Aust.) Pty Ltd (ABN: 25 000 045 572)
49-61 Stephen Road
Botany NSW 2019

Exempt Information (Section 75 of the Act)
Data items and details claimed exempt from publication: chemical name, other names, molecular and structural formulae, molecular weight, spectral data, purity, polymer constituents, manufacture/import volume and site of manufacture.

2. IDENTITY OF POLYMER

Marketing Name(s)
Polymer in Polyplex 7020 and Polymer in Polyplex 7088 (containing the notified polymer at < 70%).

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	Clear to hazy tinted liquid (product)
Melting Point/Glass Transition Temp	Estimated to be < 10°C
Density	1080 kg/m^3 at 25°C
Water Solubility	Not determined. Expected to be low based on the predominantly hydrophobic structure of the notified polymer.
Dissociation Constant	Not determined. The notified polymer may contain residual end group anionic functionalities which are expected to be ionised in the environmental pH range (4 - 9). However, significant dissociation is not expected given the notified polymer has limited water solubility.
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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	≤ 300	≤ 300	≤ 300	≤ 300	≤ 300

Use
The notified polymer will be manufactured or imported at < 70% dispersion and reformulated into the finished resin products at < 70%. The finished resin products will be used to form polymer concrete systems for application in monolithic floor toppings. Immediately prior to application, a curing agent will be mechanically mixed into the resin. The mix will then be poured onto the floor and manually trowelled to the required thickness to give a smooth and level surface.

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 ionic functionality are of low concern to the aquatic environment.

The notified polymer will be manufactured in Australia or imported as a dispersion in organic solvent. Equipment used in manufacturing and reformulation of the notified polymer will be cleaned with organic solvent. Solvent washings for equipment cleaning, containing up to 1.5% of the total annual volume of the notified polymer, are expected to be collected in on-site settling tanks. Notified polymer released to the settling tanks is expected to precipitate as sludge and be collected and disposed of by a registered trade waste facility, which is most likely to landfill. Empty containers will be cleaned and recycled at a registered drum facility. Up to 1 % of the notified polymer is estimated to be washed into sewers from the cleaning of empty containers and equipment used in manufacturing or reformulation. However, this release is not expected to reach ecotoxicologically significant concentrations.

The finished resin products containing the notified polymer will be blended with stone and silica sand for application in monolithic floor toppings. The majority of the notified polymer will be chemically bound with composite substance and will not be released to the environment in any significant quantity. Composite substance from floor demolition operations is expected to be eventually disposed of to landfill. Any resin waste containing the notified polymer is expected to be disposed to landfill.

The notified polymer may have potential for hydrolysis. However, significant degradation of the notified polymer is not expected given its limited water solubility and limited release to the aquatic environment based on its use. Bioaccumulation is not likely based on the notified polymer's high molecular weight and the use pattern of being trapped in composite solids after application. In landfill, leaching of the notified polymer is not expected given it is trapped in the composite matrix. The notified polymer is expected to degrade over time via abiotic or biotic pathways into water and oxides of carbon.

Therefore, based on its assumed low hazard and assessed use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.