

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in Setaqua PU F125

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 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 the Environment.

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**

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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/1190	Nuplex Industrials (Australia) Pty Ltd	Polymer in Setaqua PU F125	No	≤ 100 tonnes per annum	Component of varnishes

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.
- Spray applications should be carried out in accordance with the Safe Work Australia Code of Practice for *Spray Painting and Powder Coating* (Safe Work Australia, 2012) or relevant State or Territory Code of Practice.
- 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 to landfill.

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 a component of varnishes, 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 (M)SDS of a product containing the notified polymer was provided by the applicant. The accuracy of the information on the (M)SDS remains the responsibility of the applicant.

ASSESSMENT DETAILS

1. APPLICANT AND NOTIFICATION DETAILS

Applicants

Nuplex Industries (Australia) Pty Ltd (ABN: 25 000 045 572)
Building I, Suite 15
22 Powers Road
SEVEN HILLS NSW 2147

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, manufacture/import volume and site of manufacture/reformulation.

2. IDENTITY OF POLYMER

Marketing Name(s)

Setaqua PU F125 (contains < 50% notified polymer)

Molecular Weight

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

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	Translucent greenish yellow liquid*
Melting Point/Glass Transition Temp	Not determined. The notified polymer is dispersed in a solution and is not isolated.
Density	1040 kg/m ³ at 25 °C*
Water Solubility	Not determined. The notified polymer is expected to be water dispersible based on the presence of polar functionalities and the use pattern in aqueous products.
Reactivity	Not determined. The notified polymer is a salt and is expected to be ionised under normal environmental conditions of pH 4 – 9.
Degradation Products	None under normal conditions of use

* For the product Setaqua PU F125 containing the notified polymer at < 50% concentration in aqueous solution.

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	< 100	< 100	100	100	100

Mode of Introduction and Details of Use

The notified polymer will initially be introduced as a component of finished timber varnishes at a concentration of < 20%. Varnishes containing the notified polymer will be applied by spray (using spray guns) or brush to wood surfaces.

At some point in the future the notified polymer may also be manufactured and reformulated into varnishes within Australia.

End users of the finished varnishes include consumer, professional and industrial customers.

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 notified polymer will be imported as a component of finished varnishes which may be used via spray application. For professional and industrial end users, a recommendation regarding compliance with the relevant code of practice for spray application is included in this assessment report. Given good practice is applied to limit exposure and the assumed low hazard of the notified polymer, the risk to occupational health is not considered to be unreasonable.

The finished varnishes containing the notified polymer will be used by the general public. Inhalation exposure may occur as the varnishes may be applied by the public using spray guns. The notified polymer has a number average molecular weight of < 10,000 Da hence lung overloading effects are not expected. Given the assumed low hazard of the notified polymer, the risk to the public is not considered 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 not considered to be an over-chelation hazard to algae.

At some point in the future, the notified polymer may be manufactured locally by polymerisation process. It is estimated that up to 1% of the total import volume of the notified polymer will be present in washings from cleaning of pump lines and reaction vessels. The washings will undergo a process of flocculation and collected solids are expected to be disposed of to landfill. Residues in empty imported containers are expected to be directly sent to landfill with the containers.

The notified polymer may be further reformulated locally to produce coatings (varnishes) for timber products. It is estimated that up to 1% of notified polymer will be present in washings from cleaning of equipment used in reformulation. The generated wastewater is expected to be collected by a registered trade waste facility.

During professional use, product containing the notified polymer will be applied by spray techniques. It is expected that approximately 20-60% of the coating product will be in the form of overspray during spraying operations and will typically entail landfill disposal, after being collected. Residues

containing the notified polymer on brushes and rollers are expected to be rinsed into containers and then allowed to cure before disposal, as solid wastes, to landfill. Do it yourself (DIY) users are expected to apply products by brushes and rollers, using similar practices to professional users. However, approximately 5% of the notified polymer used by DIY users may be incorrectly disposed of to the sewer, drains or ground from waste and washing of application equipment. Assuming the releases occur nationwide and equally over the entire year, this is unlikely to lead to ecotoxicologically relevant concentrations of the notified polymer in the aquatic environment.

The fate of the coating cured on the substrate will be shared with the fate of the coated article, which ultimately is expected to be to landfill. In landfill, the notified polymer will be present in high molecular weight cured solids which will be neither bioavailable nor mobile. Furthermore, the notified polymer is also not expected to bioaccumulate due to its high molecular weight. It is expected to eventually degrade in the environment to form oxides of carbon and nitrogen, and water vapour. 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.