File No PLC/998

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN FULL PUBLIC REPORT

Polymer in Chemipearl

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

October 2011

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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/998	DKSH Australia Pty Ltd	Polymer in Chemipearl	No	≤10 tonnes per annum	Component of paints and printing inks.

CONCLUSIONS AND REGULATORY OBLIGATIONS

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

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.

- If spray application occurs, it 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 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 paints and printing inks, 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 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 MSDS of products containing the notified polymer was provided by the applicant. The accuracy of the information on the MSDS remains the responsibility of the applicant.

ASSESSMENT DETAILS

1. APPLICANT AND NOTIFICATION DETAILS

Applicants
DKSH Australia Pty Ltd (ABN: 70 005 059 307)
14-17 Dansu Court
Hallam VIC 3803

Exempt Information (Section 75 of the Act)
Data items and details claimed exempt from publication: chemical name, 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)
HW2203AC
Polymer in Chemipearl (containing notified polymer at < 5%)

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

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 solid powder
Melting Point/Glass Transition Temp	Not available. Notified polymer is not extracted from solution.
Specific Gravity	0.98 (imported polymer solution)
Water Solubility	Expected to be water dispersible based on the presence of polar functionality and the use pattern in a waterborne product.
Dissociation Constant	The notified polymer is a salt and contains functionality that is expected to be ionised in the environment.
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	< 1	1-3	1-3	3-10	3-10

Use

The notified polymer will not be manufactured in Australia. It will be imported into Australia at concentrations of < 5% and subsequently reformulated. The notified polymer will be used as a component of paints and printing inks at a concentration of < 3%. Paints will be used on steel, plastic films, and wood, and are expected to most commonly be applied by roller.

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. Anionic polymers are generally of low toxicity to fish and daphnia, however they 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 is unlikely to apply to the notified polymer. Furthermore, the toxicity to algae is likely to be further reduced due to the presence of calcium ions in the aquatic compartment which will bind to the acid functional groups.

A small proportion of the introduced volume of notified polymer may be discharged to sewer, as a result of cleaning reformulation and application equipment and potentially from paper recycling processes. However, notified polymer is not expected to be released to surface waters in ecotoxicologically significant concentrations and bioaccumulation is not likely based on the notified polymer's high molecular weight. The majority of the notified polymer will be physically incorporated within the cured coating and is expected to remain associated with the paper, steel, plastic film or wood substrate to which it has been applied and share its fate.

When disposed of to landfill, the notified polymer is expected to eventually degrade to form water and oxides of carbon and simple potassium salts. Similarly, during reclamation of steel to which it is applied, the notified polymer is expected to thermally degrade to form water vapour, oxides of carbon, and various potassium salts. Based on its assumed low hazard, low potential for bioavailability and bioaccumulation and its reported use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.