File No PLC/779

July 2008

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer (PD 2189 NS) in Liquiloc PWL 5065 KPBN

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 the Environment, Water, Heritage and the Arts.

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 334-336 Illawarra Road, Marrickville NSW 2204.

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

TABLE OF CONTENTS

FULL PUBLIC REPORT

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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
H.B Fuller Australia Pty Ltd. (ABN 37 003 638 435) of 16-22 Red Gum Drive, DANDENONG SOUTH, VIC 3175

NOTIFICATION CATEGORY
Polymer of Low Concern

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.

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
Canada, 2007

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
PD 2189 NS (containing the notified polymer at <50%)

MOLECULAR WEIGHT (MW)
Number Average Molecular Weight (Mn) >1000 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 opaque emulsion
Melting Point	35°C
Density	1050 kg/m^3 at 22°C
Water Solubility	Assumed to be < 1 ppm based on the chemical structure.
Dissociation Constant	Contains anionic groups which are expected to have a pKa value of 3-5. The notified polymer will be ionised over the environmental pH range (4 – 9).
Reactivity	Expected to be stable under normal environmental conditions
Degradation Products	Thermal degradation products include carbon monoxide, carbon dioxide, and sulfur containing gases. The notified polymer contains hydrolysable functionality, but hydrolysis is unlikely to occur under ambient abiotic conditions in the environmental pH range of 4 – 9.

5. INTRODUCTION AND USE INFORMATION

MAXIMUM INTRODUCTION VOLUME OF NOTIFIED CHEMICAL (100%) OVER NEXT 5 YEARS

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	1-3	3-10	10-30	10-30	10-30

USE

The notified polymer is used as a polymer base for waterborne labelling adhesive for use on labelling machines.

MODE OF INTRODUCTION AND USE DETAILS

Initially, the notified polymer will be imported into Australia as a component of a finished labelling adhesive product, Liquiloc PWL 5065 KPBN, at a concentration of <20% in sealed 13.61 kg pails. In the future, the notified polymer is intended to be imported as a polymer emulsion (PD 2189 NS) at a concentration of <50% in 205 litre drums or 1000 litre Intermediate Bulk Containers (IBC) for further formulation. The imported products will be transported and stored on pallets from the wharf to the applicant's warehouse by truck for formulation or distribution to end users.

Formulation

The imported polymer emulsion will be blended with other ingredients at the applicant's site to produce the finished adhesive under extraction ventilation. The operators will wear personal protective equipment (PPE), including chemically resistant gloves, face masks or safety glasses with sideshield protection, when handling the polymer emulsion and other ingredients of the labelling adhesive formulation.

End use

At the end users' sites, the finished adhesive will be directly pumped onto the transfer roller of the labelling machine. The operators will wear PPE when handling the adhesive. To minimize waste of the adhesive operators will use a spatula to manually transfer the unused residues from the pail to a newly opened pail. The labelling machine will be cleaned with warm water and wet rags. Empty pails will be placed in bins for disposal by a licensed waste disposal operator.

6. HUMAN HEALTH IMPLICATIONS

Hazard Characterisation

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

Dermal and ocular exposure may potentially occur during certain processes involving the notified polymer, such as transfer of products/residuals containing the notified polymer. However, exposure to significant amounts of the notified polymer will be limited because of the largely enclosed processes, the engineering controls and personal protective equipment worn by workers. Together with the assumed low hazard, the notified polymer is not considered to pose an unacceptable risk to the health of workers.

Public Health Risk Assessment
The notified polymer will not be available to the public. Members of the public may make dermal contact with labels containing the notified polymer. However, the risk to public health will be negligible because the notified polymer is assumed to be of low hazard, and will be bound within a polymeric dried matrix.

7. ENVIRONMENTAL IMPLICATIONS

Hazard Characterisation
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 occurs when the acid functionality is on alternating carbons of the polymer backbone. Whether this applies to the notified polymer is unclear. However, the toxic effects on algae are unlikely to occur since no release of the notified polymer to aquatic ecosystems is predicted based on its reported use pattern.

Environmental Risk Assessment

Calculation of the PEC of the notified polymer is not necessary since no release to aquatic ecosystems is expected. The notified polymer in landfill is not expected to leach due to its insolubility in water. The notified polymer in landfill will be subject to slow degradation process through biotic and abiotic pathways.

The notified polymer is not considered to pose an unacceptable risk to the aquatic environment based on its use pattern and properties.

8. CONCLUSIONS AND RECOMMENDATIONS

Human health risk assessment
Under the conditions of the occupational settings described and when used in the proposed manner, the notified polymer is not considered to pose an unacceptable risk to the health of workers and the general public.

Environmental risk assessment
Based on the reported use pattern, the notified polymer is not considered 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.

  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 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.

Environment

- The notified polymer should be disposed of to landfill.

- Spills and/or accidental release of the notified polymer should be handled by 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.

(2) Under Section 64(2) of the Act; if
- the function or use of the notified polymer has changed from a component of adhesives, or is likely to change significantly;
- the amount of notified polymer being introduced has increased from 30 tonnes per annum, or is likely to increase, significantly;
- if 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 notified polymer and products containing the notified polymer provided by the notifier were reviewed by NICNAS. The accuracy of the information on the MSDS remains the responsibility of the applicant.