File No PLC/771

July 2008

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

EXP-22

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

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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
Henkel Australia Pty Ltd (ABN 82 001 302 996)
135-141 Canterbury Rd
Kilsyth VIC 3137

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 formula, Structural formula, Means of identification, Molecular weight, Reactive functional groups, Polymer constituents, Residual monomers/impurities, 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
USA (2007), Canada (2007), & China (2007)

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
EXP-22

OTHER NAME(S)
EXP-22LV, EXP-22PB
Terokal 5087-02 (product containing the notified polymer)

MOLECULAR WEIGHT (MW)
Number Average Molecular Weight (Mn) > 10000 Da

REACTIVE FUNCTIONAL GROUPS
The notified polymer contains one reactive functional group (RFG) that is considered to be of High Concern. The notified polymer has a molecular weight of >10,000 Da and thus meets the PLC criteria.

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:	Solid (powder)
Melting Point/Glass Transition Temp	The softening point is 130°C-150°C.
Density	930 kg/m^3 at 20°C
Water Solubility	Insoluble in water. The water solubility of the notified substance has not been tested. However, notified polymer is considered insoluble in water, given the crosslinking structure and the monomer constituents it has.
Dissociation Constant	Not applicable due to the absence water dissociable groups.
Particle Size	0.07 µm (70 nm) to 0.17 µm (170 nm)
Reactivity	Stable under normal environmental conditions
Degradation Products	None under normal conditions of use. Degrades at high temperatures.

5. INTRODUCTION AND USE INFORMATION

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

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

Mode of Introduction
The notified polymer will not be manufactured in Australia. Adhesive formulations containing notified polymer in concentrations less than 15% will be imported in 200 kg steel drums into Australia via sea. The imported adhesive formulations are expected to be transferred by road from the port to customer sites where they will be used.

Use and Operation Description
The notified polymer will be used as component of adhesive formulations, which will be used in automotive, construction, and electronics applications.

The automotive sector is the most likely use area of adhesive formulations containing the notified polymer, and the application of these formulations would most likely be by an automated or semi-automated process rather than a manual one. The most likely manner in which the adhesive formulations would be applied would be by heating to a specified temperature. The final adhesive formulations would likely have an established optimal temperature range in which they are most effectively used. As such, uncontrolled heating is not expected to occur.

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. The notified polymer is water insoluble high molecular weight polymer with particle size in the respirable range (< 10 µm). Therefore, the polymer has the potential to cause lung overloading.

Occupational Health and Safety Risk Assessment
Dermal and ocular exposure may occur during certain processes involving the notified polymer such as container handling, system loading, equipment cleaning operations and disposal. However, exposure to significant amounts of the notified polymer would be adequately controlled through the use of fully automated/semi-automated processes, the engineering controls and personal protective equipment. Significant inhalation exposure is not expected from the proposed mode of use in the form of the notified polymer as introduced.

Some fractions of the notified polymer's residual monomers could be released during end-use if overheated. As the final adhesive formulations would be likely to have an established, optimal temperature range in which these formulations are most effective, uncontrolled heating is not expected to occur.

Once the adhesive has been applied, the polymer is expected to largely trapped within the polymeric matrix of the finished articles, effectively eliminating any potential for exposure.

Overall, the OHS risk presented by the notified polymer is expected to be low, based on the likely low exposure to workers and the low intrinsic hazard of the polymer.

Public Health Risk Assessment
The notified polymer is intended only for use at industrial and commercial sites and as such public exposure to the notified chemical is not expected. Members of the public may make dermal contact with the plastic articles containing the notified polymer. However, the risk to the public from exposure to the notified polymer is considered to be minimal, since the notified polymer is: (a) expected to be of low toxicological hazard, (b) present at low concentration (<15%) in the finished article, and (c) expected to largely trapped within the polymeric matrix of the finished articles, effectively eliminating any potential for exposure to the public.

7. ENVIRONMENTAL IMPLICATIONS

Hazard Characterisation
No ecotoxicological data were submitted. PLCs without significant ionic functionality are of low concern to the aquatic environment.

Environmental Risk Assessment
The notified polymer will be either disposed of to landfill, or be incinerated during the recycling process of the metal substrates.

The notified polymer in landfill is not expected to be mobile and will be slowly degraded over time into water and oxides of carbon and nitrogen.

Based on the reported use pattern and features of structure, the notified polymer is not considered to pose an unacceptable risk to the aquatic environment.

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 expected to pose an unreasonable risk to workers and the public.

Environmental risk assessment
The notified polymer is not considered to pose a risk to the environment based on the reported use pattern.

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. Respiratory protection should be used if significant inhalation exposure is likely, such as with spray applications or if the notified polymer is introduced in powdered form.

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

- Products containing the notified polymer should be processed at controlled temperature to avoid degradation of the notified polymer.

- 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

Disposal

- The notified polymer should be disposed of to landfill.

Storage

- Store in a cool, dry well ventilated.

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 as a component of adhesive formulations, or is likely to change significantly;
- the amount of notified polymer being introduced has increased from 10 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.

No additional secondary notification conditions are stipulated.

Material Safety Data Sheet
The MSDS of the product containing the notified polymer (EXP-22) provided by the notifier was reviewed by NICNAS. The accuracy of the information on the MSDS remains the responsibility of the applicant.