

File No PLC/943

August 2010

**NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT
SCHEME
(NICNAS)**

FULL PUBLIC REPORT

Polymer in Terokal 5089

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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FULL PUBLIC REPORT**Polymer in Terokal 5089****1. APPLICANT AND NOTIFICATION DETAILS**

APPLICANT(S)

Henkel Australia Pty Ltd (82 001 302 996)
135-141 Canterbury Road
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, CAS Number, Molecular and Structural Formulae, Molecular Weight, Polymer Constituents, Residual Monomers/Impurities, Use Details, and Manufacture/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

None

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

Terokal 5089 (product containing the notified polymer at < 10%)

MOLECULAR WEIGHT (MW)

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

REACTIVE FUNCTIONAL GROUPS

The notified polymer contains only low concern functional groups.

3. PLC CRITERIA JUSTIFICATION*Criterion*

Molecular Weight Requirements
Functional Group Equivalent Weight (FGEW) Requirements
Low Charge Density
Approved Elements Only
Stable Under Normal Conditions of Use
Not Water Absorbing
Not a Hazard Substance or Dangerous Good

Criterion met

Yes
Yes
Yes
Yes
Yes
Yes
Yes

The notified polymer meets the PLC criteria.

4. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa	Colourless or slightly yellow liquid
Melting Point/Glass Transition Temp	The polymer is not isolated from the adhesive formulation during its life cycle in Australia. Additionally, the adhesive is typically heat cured at temperatures between 155 °C and 190 °C
Density	1.1-1.2 kg/m ³ at 20 °C
Water Solubility	Not determined. The notified polymer is expected to have low water solubility based on its predominantly hydrophobic structure. This expectation is supported by QSAR calculations (EPI Suite v3.20) which indicate that the water solubility, based on a structure for a representative low molecular weight oligomer, is < 1 mg/L.
Dissociation Constant	The notified polymer has no dissociable functions.
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

<i>Year</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Tonnes	<2	<2	<2	<2	<2

Use

The notified polymer will be used as a component of an automotive adhesive.

Mode of Introduction and Disposal

The notified polymer will not be manufactured in Australia and will be imported as a component of an automotive adhesive at concentrations of < 10% by air freight in 20 litre or 5 gallon high density polyethylene plastic pails.

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.

Occupational Health and Safety Risk Assessment

At the end user sites, the adhesive (containing <10% notified polymer) is dispensed using an automated pumping system. The adhesive is then applied using an applicator pistol, which may be used manually in a fixed position or connected to an automated robotic arm.

The application of the adhesive is performed under an extraction, which removes any volatile components of the adhesive. Once applied, the adhesive will be heat cured at temperatures between 155 and 190°C. Once cured, the notified polymer will be bound within the adhesive matrix and will not be bioavailable. Due to the use of automated procedures, worker exposure is expected to be low. To minimise any further exposure during various procedures, workers will wear appropriate personal protective equipment such as coveralls, safety glasses/shields and gloves.

Dermal and ocular exposure may potentially occur during cleaning of the equipment. However, exposure to significant amounts of the notified polymer is limited because of the use of local exhaust extractors and personal protective equipment worn by workers

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

Public Health Risk Assessment

The notified polymer is intended only for industrial use and as such public exposure to the notified polymer is not expected. Automotives containing the notified polymer will be sold to the public. However, the notified

polymer will be contained within an inert matrix and exposure to the public is not expected. Therefore, the risk to public health will be low, based on the anticipated low hazard of the notified polymer and negligible exposure.

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

A maximum of 2% of the total imported quantity of the notified polymer will be released to landfill as a result of the disposal of empty import containers and equipment cleaning wastes. During application to automotive structural components, unused adhesive will be collected and disposed of to landfill. The notified polymer will be irreversibly combined within a heat-cured adhesive matrix and will share the fate of the automotive components to which the adhesive containing the notified polymer will be applied. Discarded automotive components will be recycled for metals reclamation or disposed of to landfill. Metals reclamation will result in the thermal decomposition of the notified polymer to form oxides of carbon, nitrogen and water vapour. In landfill, the notified polymer will be present as a cured solid and will be neither bioavailable nor mobile. While no ecotoxicity data are available, due to limited release to water it is unlikely that the polymer would be present at levels which could pose a risk to aquatic organisms. The high molecular weight of the polymer indicates a low potential for bioaccumulation. Based on the low potential for environmental exposure resulting from its use in automotive adhesives, the notified polymer is not expected to pose a risk to the environment when it is stored, transported and used as proposed.

8. CONCLUSIONS AND RECOMMENDATIONS

Human health risk assessment

Under the conditions of the occupational settings described, the notified polymer is not considered to pose an unacceptable risk to the health of workers.

When used in the proposed manner, the notified polymer is not considered to pose an unacceptable risk to public health.

Environmental risk assessment

Based on the reported use pattern, the notified polymer is not expected 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.

Disposal

- The notified polymer should be disposed of to landfill.

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 an automotive adhesive, or is likely to change significantly;
 - the amount of notified polymer being introduced has increased from 2 tonnes/year, 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 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 provided by the notifier was reviewed by NICNAS. The accuracy of the information on the MSDS remains the responsibility of the applicant.