File No SAPLC/71

February 2008

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in Macromelt 6208 N

This Self Assessment has been compiled by the applicant and adopted by NICNAS 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), administered by the Department of Health and Ageing and the Department of the Environment, Water, Heritage and Arts has screened this assessment report. The data supporting this assessment will be subject to audit by NICNAS.

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
Henkel Australia Pty Ltd (ABN: 82 001 302 996)
135-141 Canterbury Rd
KILSYTH VIC 3137

NOTIFICATION CATEGORY
Self Assessment: 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 and Structural Formulae, Molecular Weight, Polymer Constituents, Residual Monomers/Impurities, Use Details, Import Volume

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)
None

NOTIFICATION IN OTHER COUNTRIES
None known

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
Polymer in Macromelt 6208N

MOLECULAR WEIGHT (MW)
Number Average Molecular Weight (NAMW) > 1000 Da

REACTIVE FUNCTIONAL GROUPS

Functional Group	Category	Equivalent Weight (FGEW)
Epoxides	High Concern	> 5000

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	Black granular solid.
Melting Point/Glass Transition Temp	148-160°C (Softening point)
Density	980 kg/m^3 at 20°C
Water Solubility	Insoluble in water (based on hydrophobic components)
Dissociation Constant	pKa > 6.4 (based on low number of carboxyl groups)
Particle Size	Not determined, as the notified polymer is granular (pellets) and is not expected to generate or contain dust.
Reactivity	Stable under normal environmental conditions. The notified polymer contains hydrolysable functionalities but hydrolysis is unlikely to occur in environmental pH range of 4-9.
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	3-10	3-10	3-10	3-10	3-10

USE AND MODE OF INTRODUCTION AND DISPOSAL

Mode of Introduction

Macromelt 6208N containing more than 90% notified polymer will be imported from Germany in granulated form in 200 kg steel drums. It will be imported via Melbourne and transported by road to the notifier's warehouse before being on sold to customers without repackaging.

Reformulation/manufacture processes

The notified polymer will not be manufactured or reformulated in Australia.

Use

Macromelt 6208N (containing more than 90% notified polymer) will be used to encapsulate, by injection moulding, electronic components of automotive electronics. The macromelt will not be available to the general public.

6. HUMAN HEALTH IMPLICATIONS

6.1. Exposure Assessment

OCCUPATIONAL EXPOSURE

The macromelt is heated in fully enclosed melting units and dispensed to moulds by automated processes in enclosed low pressure dispensing systems. Therefore there will be limited occupational exposure.

Dermal exposure may potentially occur during certain manual processes involving the notified polymer, such as charging the melt units. However, exposure to significant amounts of the notified polymer is limited due to use of automated processes and appropriate engineering controls and the personal protective equipment worn by workers.

PUBLIC EXPOSURE

The notified polymer is intended only for use in industry and as such public exposure to notified polymer is not expected. The public may make dermal contact to articles encapsulated with the macromelt containing the notified polymer, if an automobile is damaged in such a way as to expose these articles. However once the macromelt is cured, the notified polymer will become inert and not biologically available.

6.2. Toxicological Hazard Characterisation

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

It is noted Macromelt 6208N contains impurities (<3%) classified as R43.

6.3. Human Health Risk Assessment

OCCUPATIONAL HEALTH AND SAFETY

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

PUBLIC HEALTH

The notified polymer will not be available to the public. Members of the publics may make dermal contact with articles encapsulated with the macromelt containing the notified polymer. However, the risk to public health will be negligible because the notified polymer presents a low hazard and is not biological available.

7. ENVIRONMENTAL IMPLICATIONS

7.1. Exposure Assessment

ENVIRONMENTAL RELEASE

Environmental release of the notified polymer is not expected during importation, transport and storage. The injection moulding process used to encapsulate the electronic component with the macromelt is very efficient with no waste being generated. Nearly all the polymer released to the environment will be the result of equipment cleaning and container residues. Waste generated from the equipment cleaning is allowed to solidify and disposed of to landfill. Any residue remaining in drum is allowed to solidify in the drum and disposed to landfill in the drum. It is estimated that up to 200 kg (2% of the total introduction volume) will be disposed to landfill. Approximately 1% will be from equipment cleaning (100 kg) and up to 1% (100 kg) as residue in drums.

ENVIRONMENTAL FATE

The notified polymer is expected to be stable under normal environmental conditions. Due to its low water solubility, the notified polymer in solid wastes is expected to remain bound within the soils and sediments of landfills and eventually degrade through biotic and abiotic processes. If spilt on land, the notified polymer is expected to bind to soil and become immobilised in the soil layer. If spilt to water, the notified polymer is not expected to dissolve but rather disperse or settle to the sediment. It is not expected to be readily biodegradable but due to its high molecular weight it is not expected to bioaccumulate. Incineration of the notified polymer will result in the formation of water vapour, oxides of carbon and nitrogen.

7.2. Environmental Hazard Characterisation

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 is unlikely to apply to the notified polymer. However, the toxicity to algae is likely to be further reduced due to presence of calcium ions, which will bind to the functional groups.

7.3. Environmental Risk Assessment

The macromelt containing the notified polymer is expected to be used at a small number of sites throughout Australia. The major environmental exposure is expected to be due to the disposal of the waste from the component manufacture to landfill. If spilt on land the notified polymer is expected to become immobilised in the soil layer. Due to its low water solubility the polymer will remain bound to soils and sediments of the landfill and slowly degrade by abiotic and biotic processes to form water and oxides of carbon and nitrogen.

On the basis of reported use and disposal pattern, the notified polymer is unlikely to pose an unacceptable risk to the environment.

8. CONCLUSIONS

8.1. Level of Concern for Occupational Health and Safety

There is Low Concern to occupational health and safety under the conditions of the occupational settings described.

8.2. Level of Concern for Public Health

There is Negligible Concern to public health when used in the proposed manner.

8.3. Level of Concern for the Environment

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

9. MATERIAL SAFETY DATA SHEET

9.1. Material Safety Data Sheet

The notifier has provided MSDS as part of the notification statement. The accuracy of the information on the MSDS remains the responsibility of the applicant.

10. 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, noting that the formulation may be classified as R43 because of hazardous impurities.

  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 by licensed waste contractor in accordance with local jurisdiction waste management regulations.

Emergency procedures

- Accidental spills/release of the notified polymer should be swept up and reused or placed in a container for disposal. Avoid contaminating waterways.

11. 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 chemical 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 chemical, have post-assessment regulatory obligations to notify NICNAS when any of these circumstances change. These obligations apply even when the notified chemical 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 chemical has changed from used to encapsulate, by injection moulding, electronic components of automotive electronics, or is likely to change significantly;
- the amount of chemical being introduced has increased from 10 tonne per annum, or is likely to increase, significantly;
- the method of manufacture of the chemical 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 chemical 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 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.