File No.: PLC/1553

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Fatty acids, C_{18}-unsatd., dimers, hydrogenated, polymers with ethylenediamine, piperazine, polypropylene glycol diamine and sebacic acid

This Assessment has been compiled in accordance with the provisions of the *Industrial Chemicals (Notification and Assessment) Act 1989* (the Act) and Regulations. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) is administered by the Australian Government Department of Health, 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 the Environment and Energy.

This Public Report is 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

July 2019

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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/1553	Henkel Australia Pty Ltd	Fatty acids, C_{18}-unsatd., dimers, hydrogenated, polymers with ethylenediamine, piperazine, polypropylene glycol diamine and sebacic acid	No	≤ 10 tonnes per annum	Polymer for low pressure injection moulding

CONCLUSIONS AND REGULATORY OBLIGATIONS

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

- If fumes are released during processing of the notified polymer, engineering controls and/or respiratory protection should be used to prevent inhalation exposure.

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

- A copy of the SDS should be easily accessible to employees.

- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the *Globally Harmonised System of Classification and Labelling of Chemicals (GHS),* as adopted for industrial chemicals in Australia, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation should be in operation.

Disposal

- Where reuse or recycling are not appropriate, dispose of the notified polymer in an environmentally sound manner in accordance with relevant Commonwealth, state, territory and local government legislation.

Emergency Procedures

- 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 polymer for low pressure injection moulding, 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.

Safety Data Sheet

The SDS of the product containing the notified polymer was provided by the applicant. The accuracy of the information on the SDS remains the responsibility of the applicant.

ASSESSMENT DETAILS

1. APPLICANT AND NOTIFICATION DETAILS

Applicants
Henkel Australia Pty Ltd (ABN: 82 001 302 996)
135 – 141 Canterbury Road
KILSYTH VIC 3137

Exempt Information (Section 75 of the Act)
Data items and details exempt from publication include: structural formulae, molecular weight, polymer constituents and adjuvants.

2. IDENTITY OF POLYMER

Marketing Name(s)
Technomelt PA 6481 (product containing the notified polymer at a concentration of 97%)

Chemical Name
Fatty acids, C_{18}-unsatd., dimers, hydrogenated, polymers with ethylenediamine, piperazine, polypropylene glycol diamine and sebacic acid

CAS Number
873893-91-5

Molecular Formula
Unspecified

Molecular Weight
Number Average Molecular Weight (Mn) is > 1,000 g/mol

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	Yellowish solid
Melting Point/Glass Transition Temperature	180 °C
Density	970 kg/m^3 at 20 °C
Water Solubility	Expected to be insoluble in water due to structural considerations.
Dissociation Constant	The notified polymer contains functional groups that are expected to be ionised in the environmental pH range (4 – 9).
Particle Size	5 – 10 mm granules
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	5	5	10	10

Use
The notified polymer will not be manufactured in Australia. It will be imported in 20 kg polyethylene bags as a component of Technomelt PA 6481 at a concentration of 97%.

The Technomelt PA 6481 will be used in low pressure injection moulding to encapsulate electronics that will be used outdoors and require UV stability.

At the end use facilities, Technomelt PA 6481 will be manually loaded into a melter unit. The polymer in liquid form will then be injected at low pressure into moulds containing the electronic components, in an automatic process.

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.

Worker exposure to any fumes released during processing would be minimised by use of engineering controls and/or respiratory protection.

Although not considered in this risk assessment, NICNAS notes that the notified polymer contains adjuvants that are classified as hazardous according to the *Globally Harmonised System of Classification and Labelling of Chemicals (GHS),* as adopted for industrial chemicals in Australia.

7. ENVIRONMENTAL RISK ASSESSMENT

No ecotoxicological data were submitted. The notified polymer contains potentially cationic functional groups, which may have a charge density of concern to the aquatic environment, but as its sole use is in the solid phase, this concern to the aquatic environment does not apply to the notified polymer.

The notified polymer will be irreversibly incorporated within a solid polymer matrix. Injection moulding equipment washings, spills and import containers are to be collected and disposed to landfill via a licensed waste contractor. When disposed of to landfill, the notified polymer is expected to eventually degrade to form water and oxides of carbon and nitrogen.

The notified polymer is expected to be insoluble in water. It is not expected to cross biological membranes due to its high molecular weight and is therefore not expected to bioaccumulate. Therefore, based on its assumed low hazard and reported use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.