File No SAPLC/132

April 2012

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

PUBLIC REPORT

Polymer in Zeonor 1000 Series

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 Sustainability, Environment, Water, Population and Communities have 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 Level 7, 260 Elizabeth Street, Surry Hills NSW 2010.

This 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

SUMMARY

The following details will be published in the NICNAS *Chemical Gazette:*

ASSESSMENT REFERENCE	APPLICANT	CHEMICAL OR TRADE NAME	HAZARDOUS SUBSTANCE	INTRODUCTION VOLUME	USE
SAPLC/132	Specialty Polymers and Chemicals Australia Pty Ltd	Polymer in Zeonor 1000 Series	No	≤ 50 tonnes per annum	Raw material used in the manufacture of moulded plastic articles

CONCLUSIONS AND REGULATORY OBLIGATIONS

Level of Concern for Occupational Health and Safety
Under the conditions of the occupational settings described, the notified polymer is not considered to pose an unreasonable risk to the health of workers.

Level of Concern for Public Health
When used in the proposed manner, the notified polymer is not considered to pose an unreasonable risk to public health.

Level of Concern for the Environment
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.

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.
- 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.

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

Disposal

- The notified polymer should be disposed of to landfill.

Storage

- The following precautions should be taken by the notifiers regarding storage of the notified polymer:
  - bunding

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 a raw material used in the manufacture of moulded plastic articles;
- 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.

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.

ASSESSMENT DETAILS

Polymer in Zeonor 1000 Series

1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT
SPECIALTY POLYMERS AND CHEMICALS PTY LTD (ABN 22 125 561 140)
7B /421 Blackshaw Road
Altona North VIC 3025

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, CAS Number, Molecular and Structural Formulae, Molecular Weight, Polymer Constituents, Residual Monomers/Impurities and Import Volume.

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)
None

NOTIFICATION IN OTHER COUNTRIES
TSCA Inventory Status: Listed on the US EPA Toxic Substances Control Act Inventory

ELINCS Inventory Status: Listed on the European List of Notified Chemical Substances

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
Zeonor 1000 Series
Zeonor 1000 Cyclo Olefin Polymer
Zeonor 1020R
Zeonor 1060R

MOLECULAR WEIGHT (MW)
Number Average Molecular Weight (NAMW) >10,000

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	Solid colourless transparent pellet
Melting Point/Glass Transition Temp	100-102 °C
Density	1,010 kg/m^3 at 20 °C
Water Solubility	Insoluble in water
Water absorbency	
Particle Size	Small Pellet (approx. 2mm X 1mm)
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	5-10	10-20	20-30	30-40	40-50

USE AND MODE OF INTRODUCTION AND DISPOSAL
Mode of Introduction
The polymer will be imported as a pellet packaged in various sizes:
10kg (plastic liner, woven plastic outer)
20kg (plastic liner, woven plastic outer)

Reformulation/manufacture processes
The material is not reformulated or manufactured in Australia.

Use
The imported polymer will be used in the blow-moulding/injection-moulding industry in the manufacture of high quality components, for example:
- Large and small light guide plates
- Semiconductor containers
- Automobile parts

6. HUMAN HEALTH IMPLICATIONS

6.1. Exposure Assessment

OCCUPATIONAL EXPOSURE

The notified polymer will be imported as pellets packaged in 10, 20 and 500 kg plastic-lined containers.

The imported product will either be stored at a central warehouse (prior to distribution to manufacturing site) or sent directly to manufacturing site.

At moulding sites the notified polymer will be heated and blown or injection-moulded into a range of finished plastic article. An exhaust/filter system will be in place to capture any gases generated by heating, and minimize inhalation exposure of moulding operators. Due to the pellet form of the notified polymer, dust is not expected to be released during transfer of the polymer for from bags into hoppers.

Moulding will take place in a fully automated process, minimizing the potential dermal and ocular exposure of extruder operators.

Workers handling finished articles containing the notified polymer are not expected to experience exposure due to it being trapped within a matrix.

End users that handle finished articles are not expected to be exposed to the notified polymer, as it will be trapped within a matrix.

PUBLIC EXPOSURE
The notified polymer will not be sold to the public except in the form of finished articles. There is potential for extensive public exposure to articles such as automotive items comprised wholly of the notified polymer. However, blooming/leeching of the notified polymer from the articles is not expected and hence exposure is unlikely to occur.

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.

6.3. Human Health Risk Assessment

OCCUPATIONAL HEALTH AND SAFETY
Although exposure to the notified polymer could occur during use, the risk to workers is not considered to be unreasonable given to the intrinsic low hazard of the notified polymer.

PUBLIC HEALTH
Although the public will be exposed to the notified polymer during use of blow-moulded / injection-moulded articles, the risk to public health is not considered to be unreasonable given the predicted low hazard of the notified polymer.

7. ENVIRONMENTAL IMPLICATIONS

7.1. Exposure Assessment

Environmental Release
There is the potential for release during manufacture, however, as the material is a pellet any spills can

be readily collected and recycled.

Environmental Fate
The notified polymer is expected to be stable under normal environmental conditions. Due to its low water solubility, the notified polymer pellets would be stable in solid wastes and is expected to eventually degrade through biotic and abiotic processes. If spilt on land, the notified polymer is expected to mix with soil and become immobilised in the soil layer due to the size of the pellets. If spilt to water, it is not expected to dissolve but rather settle to 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 and oxides of carbon and nitrogen.

7.2. Environmental Hazard Characterisation

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

7.3. Environmental Risk Assessment

The articles produced from the notified polymer will be used throughout Australia. The major environmental exposure is expected to be due to the disposal of the article once it is no longer required – similar to the fate of similar polymers used in the blow-moulding / injection-moulding industry.

Environmental exposure and the overall environmental risk are expected to be low.

ENVIRONMENTAL RELEASE
The notified polymer will be imported as a pellet for direct use in blow-moulding/injection-moulding industry. No reformulation is expected in Australia. No significant release is expected from the industrial use due to the automation of blow-moulding and injection-moulding processes. If spills occur, the notified polymer can be readily collected and recycled or disposed of to landfill.

ENVIRONMENTAL FATE
The notified polymer is expected to be stable under normal environmental conditions. It is not expected to be readily biodegradable. However, it is not expected to bioaccumulate due to its high molecular weight.

7.2. Environmental Hazard Characterisation

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

7.3. Environmental Risk Assessment

Most of the notified polymer will be used throughout Australia in form of moulded articles. At the end of their useful life, the articles containing the notified polymer are expected to be disposed of to landfill. Minor releases of the notified polymer will also be collected and disposed of the landfill. Due to its low water solubility, the notified polymer pellets would be stable in solid wastes and is expected to eventually degrade into water and oxides of carbon through biotic and abiotic processes.
Based on the assessed use pattern and the structural information for high molecular weight and hydrophobic property, the notified polymer is not considered to pose an unreasonable risk to the environment.