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NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Amodel® A-4000 and Amodel® A-6000

This Self 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 and Heritage. The data supporting this assessment will be subject to audit by NICNAS.

Under subsection 38(5) of the Act the Director NICNAS publishes this assessment report by giving a copy of it to the:

- Secretary of the Department of Environment and Heritage; and
- Department of Health and Ageing.

This assessment report will not be available for inspection by the public.

Director
NICNAS

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FULL PUBLIC REPORT

Amodel A-4000 and Amodel A-6000

1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT
Polymers International Australia Pty Ltd (ABN 92 069 883 825)
17-19 Endeavour Way
Braeside VIC 3195

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 No., molecular and structural formulae, molecular weight, polymer constituents, import volume and specific use

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)
None.

NOTIFICATION IN OTHER COUNTRIES
US, Canada, China, Japan, Korea (polymer is exempt in Europe)

2. IDENTITY OF CHEMICAL

2.3 MARKETING NAME(S)
Amodel A-4000 and Amodel A-6000

3. COMPOSITION

PLC CRITERIA JUSTIFICATION

Criterion	*Criterion met (yes/no/not applicable)*
Meets Molecular Weight Requirements	Yes
Meets 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 Hazardous Substance or Dangerous Good	Yes

The notified polymer meets the PLC criteria.

4. INTRODUCTION AND USE INFORMATION

MODE OF INTRODUCTION OF NOTIFIED CHEMICAL (100%) OVER NEXT 5 YEARS
Import only. Form is pellets. The percentage of the notified polymer in any formulation will range from around 60% to 99+%. Once in Australia, the mode of distribution will be truck. Packaging may include 25 kg multi-layer bags or 1 ton Gaylord boxes. The port of entry will be Melbourne and/or Sydney.

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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	100 - 300	100-300	100 -300	100-300	100-300

USE

For use in the manufacture of injection moulded parts. The resin will not be available to the general public.

5. PROCESS AND RELEASE INFORMATION

5.2. Operation Description

The notified polymer will be imported as solid pellets ready for moulding and injection into end use products. There will be no reformulation or repackaging of the notified polymer in Australia.

For manufacturing injection moulded articles, typically the content of imported sacks is automatically transferred into a hopper equipped with dust extractors. The resin is dried in the hopper and automatically conveyed to the injection machine where it is injected and melted into shapes. The moulded articles are cooled and automatically discharged from the machine. They are then warehoused and subsequently assembled into finished consumer products. Rejected parts are collected and sent to grinding machines for re-use.

6. EXPOSURE INFORMATION

6.1. Summary of Occupational Exposure

The potential route of worker exposure to the notified polymer will be skin contact and inhalation of particulates as a result of grinding reject articles for reuse.

Adequate ventilation will be in place to prevent workers from breathing any particulates. Use of adequate personal protective equipment is recommended i.e. eye protection and respirator if ventilation is not adequate. Protective clothing and gloves are expected to be worn if prolonged or repeated exposure is anticipated. Any incidents or accidental spillages are expected to be contained by mechanical means such as vacuuming or sweeping.

6.2. Summary of Public Exposure

The public is unlikely to be exposed to the notified polymer during transport, storage and manufacture of moulded articles except in the event of accidental spillage.

6.3. Summary of Environmental Exposure

6.3.1. Environmental Release

During the manufacture of injection moulded articles, the majority of wastes generated will be collected, reground and reused in the moulding process. Small quantities may be released due to spillage from the hopper or injection machines and as dust during grinding. The spillage can be cleaned up by mechanical means. Empty import containers containing residual polymer will also be disposed of in a landfill.

6.3.2. Environmental Fate

The majority of the notified polymer will be incorporated into moulded articles that will (at the end of their useful lives) be disposed of in a landfill. The chemical should slowly undergo in-situ degradation by biotic abiotic processes, to landfill gases such as methane, oxides of carbon, ammonia and oxides of nitrogen, and water vapour.

7. ESTABLISHMENT OF LOW PHYSICAL AND CHEMICAL HAZARD

Appearance at 20°C and 101.3 kPa	Odourless, opaque or coloured pellets
Melting Point/Glass Transition Temp	310-325°C
Density	Not applicable
Water Solubility	< 1 g/L at 20°C
Dissociation Constant	Not determined. Notified polymer is insoluble in water.
Particle Size	2.7 mm diameter x 3 mm length
Reactivity	Cross contamination with polyacetyl or polyoxymethylene resins may result in the rapid, possibly violent, release of decomposition fumes at moulding temperatures.
Degradation Products	Oxides of carbon, ammonia, aldehydes, & nitriles.

8. ESTABLISHMENT OF LOW HUMAN HAZARD

8.1. Toxicology

No toxicological data were submitted. As the notified polymer meets the PLC criteria it is expected to be of low hazard.

9. ENVIRONMENTAL HAZARDS

9.1. Ecotoxicology

No ecotoxicological data were submitted. As the notified polymer meets the PLC criteria it is expected to be of low hazard.

10. RISK ASSESSMENT

10.1. Environment

The notified polymer will be imported as pellets, which are injection moulded into a variety of plastic articles. During production of the articles it is expected that waste generated will be approximately 2% of the total import amount. Most of this will be re-used , with the remainder going to landfill. The majority of the polymer will be disposed by landfill at the end of the useful life of the product in which it is incorporated. The polymer will undergo eventual in-situ degradation. Based on this use pattern the polymer is not expected to pose an unacceptable risk to the environment.

10.2. Occupational health and safety

Estimated number and category of workers:

Category of worker	Number	Exposure Duration	Exposure frequency
Hopper loader for dryer	1	~2 hours/day	12 days/year
Injection machine operator	1	> 0.5 hours/day	180 days/year
Grinder operator	1	~2 hours/day	26 days/year

Exposure details:

The potential route of worker exposure to the notified polymer will be skin contact and inhalation. Particulates at grinding machines for rejected parts may potentially cause mechanical irritation of eyes, skin, nose, throat and mucous membranes.

The notifier indicates that adequate ventilation will be in place to prevent workers from breathing particulates. The machines will be fitted with local exhaust ventilation. Cross contamination can be avoided by thorough cleaning of moulding and other processing equipment with purging compound prior to product changeover. It is intended that particulate formation will be controlled.

10.3. Public health

As the public will only be exposed to pellets in the event of a transport accident or to the final moulded articles in which the notified polymer will not be bioavailable, the public health risk is considered to be low.

11. CONCLUSIONS – ASSESSMENT LEVEL OF CONCERN FOR THE ENVIRONMENT AND HUMANS

11.1. Environmental risk assessment

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

11.2. Human health risk assessment

11.2.1. Occupational health and safety

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

11.2.2. Public health

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

12. MATERIAL SAFETY DATA SHEET

12.1. Material Safety Data Sheet

The notifier has provided MSDS in accordance with the schedule Item B12 of the *ICNA Act*. The accuracy of the information on the MSDS remains the responsibility of the notifier.

13. RECOMMENDATIONS

CONTROL MEASURES

Occupational Health and Safety

- 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 NOHSC *Approved Criteria for Classifying Hazardous Substances*, 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 by landfill.

Emergency procedures

- Spills/accidental release of the notified polymer should be handled by physical collection, without creating dust, by sweeping and shovelling into suitable containers for disposal.

Secondary Notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

(1) Under subsection 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 subsection 64(2) of the Act:

- if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.