

File No SAPLC/134

July 2012

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

PUBLIC REPORT

Polymer in Hiprolon 400

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	3
CONCLUSIONS AND REGULATORY OBLIGATIONS	3
ASSESSMENT DETAILS	4
1. APPLICANT AND NOTIFICATION DETAILS	4
2. IDENTITY OF CHEMICAL	5
3. PLC CRITERIA JUSTIFICATION	5
4. PHYSICAL AND CHEMICAL PROPERTIES	5
5. INTRODUCTION AND USE INFORMATION	5
6. HUMAN HEALTH IMPLICATIONS	6
6.1. Exposure Assessment	6
6.2. Toxicological Hazard Characterisation	6
6.3. Human Health Risk Assessment	6
7. ENVIRONMENTAL IMPLICATIONS	7
7.1. Exposure Assessment	7
7.2. Environmental Hazard Characterisation	7
7.3. Environmental Risk Assessment	7

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
SAPLC/134	Arkema Pty Ltd	Polymer in Hiprolon 400	No	≤ 500 tonnes per annum	Component used in the manufacture of 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

The polymer is not considered to pose an unreasonable risk to the environment based on its assessed use pattern.

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.

- Local exhaust ventilation and, if necessary, respiratory protection should be used to prevent worker exposure to gas or fumes emitted during processing.
- 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 to landfill.

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 component used in the manufacture of plastic articles, or is likely to change significantly;
 - the amount of 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 Hiprolon 400****1. APPLICANT AND NOTIFICATION DETAILS****APPLICANT**

Arkema Pty Ltd (ABN 44 000 330 772)
313 Canterbury Rd
Canterbury
VIC 3126

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 Formula, Molecular Weight, Polymer Constituents and Import Volume.

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)

None

NOTIFICATION IN OTHER COUNTRIES

Korea 2012, US under PE 2012, China before 2011

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
Polymer in Hiprolon 400

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

3. PLC CRITERIA JUSTIFICATION

<i>Criterion</i>	<i>Criterion met</i>
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, translucent pellets
Melting Point/Glass Transition Temp	190°C (differential scanning calorimetry in accordance with DIN 51007)
Density	1,030 kg/m ³ at 20°C
Water Solubility	Not soluble at 20°C
Dissociation Constant	The notified polymer contains terminal functional groups that may be ionised in the environmental pH range of 4 – 9. However, this is not considered to be significant due to the insolubility of the polymer in water.
Particle Size	~ 5 mm pellets
Reactivity	Stable under normal environmental conditions. The notified polymer contains functional groups that can hydrolyse. However, this is not expected to occur significantly in the 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

<i>Year</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<i>Tonnes</i>	100 - 150	300 - 500	300 - 500	300 - 500	300 - 500

USE AND MODE OF INTRODUCTION AND DISPOSAL

Mode of Introduction

The notified polymer will be imported in pellet form, packaged in 25 kg waterproof poly-lined bags. It will be imported by sea through the capital cities of VIC, NSW, SA, QLD and WA.

Reformulation/manufacture processes

The notified polymer is not reformulated or manufactured in Australia. The polymer will be extruded into tubes, or cover cable or be used for injection moulding.

Tube extrusion: pellets containing the notifying polymer will be manually (or using vacuum transfer) loaded by workers onto a hopper. The hopper will gravity feed the pellets into an extruder that heats and melts the polymer at about 240°C. The polymer will be forced through a die, forming a tube which is cooled down going through a water bath. The tube will be rolled.

Cable sheathing: process is similar to the previous one, except the polymer will be deposited on a

cable, forming a jacket around the cable.

Injection moulding process is similar to above except the molten polymer will be injected into a mould.

Use

Around 50% notified polymer will be used to manufacture tubes for air brake applications in the automotive industry. They are also used as pressure tubes by industrial users in a wide range of applications. The rest will be used for cable jacketing (for example telephone cables or local area network cables).

6. HUMAN HEALTH IMPLICATIONS

6.1. Exposure Assessment

OCCUPATIONAL EXPOSURE

At moulding sites the notified polymer will be heated, tube extruded, cable sheathed, 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 minimise inhalation exposure of 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.

Tube extrusion, cable sheathing, and injection moulding will take place in a fully automated process, minimising the potential dermal and ocular exposure of operators.

Workers/end users handling finished articles containing the notified polymer are not expected to experience exposure due to it being 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 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 processing and use, the risk to workers is not considered to be unreasonable given to the intrinsic low hazard of the notified polymer, and, the measures in place to reduce worker exposure to gases or fumes generated during heating.

PUBLIC HEALTH

Although the public will be exposed to articles containing the notified polymer, it is not expected to be bioavailable in this form. The risk to public health is not considered to be unreasonable based on the low exposure and the predicted low hazard of the notified polymer.

7. ENVIRONMENTAL IMPLICATIONS**7.1. Exposure Assessment****ENVIRONMENTAL RELEASE**

The polymer will be imported into Australia. It will be extruded or injection moulded in Australia to form final products.

Cleaning of the extrusion die may lead to a small amount of waste and this is expected to be re-pelletised and re-used. No significant release of the notified polymer to the environment is expected from processing and use of the final products.

ENVIRONMENTAL FATE

Most of the notified polymer will be moulded into final products that will be sent to landfill at the end of their useful life. In landfill the polymer is expected to undergo in-situ degradation by biotic and abiotic processes to form water, oxides of carbon and nitrogen.

7.2. Environmental Hazard Characterisation

No ecotoxicological data were submitted. The notified polymer may contain anionic or potential cationic terminal groups. However, the functional group equivalent weight (FGEW) (for the potential cationic functional group) is expected to be > 5000, suggesting a low cationic charge density. PLCs without significant ionic functionality are of low concern to the aquatic environment.

7.3. Environmental Risk Assessment

No significant release of the notified polymer to the aquatic environment is expected. Based on the assessed use pattern the polymer is not expected to pose an unreasonable risk to the aquatic environment.