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April 2011

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

FULL PUBLIC REPORT

Polymer in Orgasol 1002

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 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 Level 7, 260 Elizabeth Street, Surry Hills NSW 2010.

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:

Street Address:	Level 7, 260 Elizabeth Street, SURRY HILLS NSW 2010, AUSTRALIA.
Postal Address:	GPO Box 58, SYDNEY NSW 2001, AUSTRALIA.
TEL:	+ 61 2 8577 8800
FAX	+ 61 2 8577 8888
Website:	www.nicnas.gov.au

**Director
NICNAS**

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FULL PUBLIC REPORT

Polymer in Orgasol 1002

1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT

Arkema Pty Ltd (ABN 44 000 330 772)
Suite 103, 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 formula, Molecular Weight, Polymer Constituents, Residual Monomers/Impurities, Import Volume and Site of Manufacture

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)

None

NOTIFICATION IN OTHER COUNTRIES

Listed or exempted in China, Japan, Philippines, Europe, US, Canada, New Zealand

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

Orgasol 1002 D NAT 1, Orgasol 1002 ES 4 NAT 1

MOLECULAR WEIGHT (MW)

Number Average Molecular Weight (NAMW) > 1,000 Da

REACTIVE FUNCTIONAL GROUPS

The notified polymer contains only low concern functional groups.

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

White powder

Melting Point/Glass Transition Temp

> 130 °C – ISO 11357

Density

1020-1150 kg/m³ – ISO 1183

Water Solubility

< 0.2% w/w. Test was conducted according to

Particle Size	Japanese standard for registration of polymers. 17-23 µm – ISO 13319
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

<i>Year</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<i>Tonnes</i>	1-3	3-10	10-30	10-30	10-30

USE AND MODE OF INTRODUCTION AND DISPOSAL

Mode of Introduction

The notified polymer in powder form is imported in 20 kg paper bags with polyethylene liner, or as a component of a formulated product. It will be imported by sea through the capital cities of VIC, NSW, SA, QLD and WA.

Reformulation/manufacture processes

The notified polymer will not be manufactured in Australia. It will be imported and distributed to companies formulating paints, varnishes and industrial coatings. The notified polymer is weighed and transferred to the batch for mixing with other ingredients to manufacture coating formulations containing < 15 % notified polymer, such as paints, varnishes and industrial coatings.

The notified polymer is also used as an additive in resins for composites. In this case the notified polymer is weighed and transferred to the batch for mixing with other ingredients to manufacture thermoset composite formulations containing < 15 % notified polymer.

Use

The notified polymer is used as an additive in coatings such as inert texture modifier and gloss and/or lustre modifier, to improve scratch and abrasion resistance.

The notified polymer can be also used as toughening agent in resins for composites.

6. HUMAN HEALTH IMPLICATIONS

6.1. Exposure Assessment

OCCUPATIONAL EXPOSURE

Transport and warehousing workers may come into dermal and ocular contact with the notified polymer through accidental leaks and spillages of the containers.

Dermal and ocular exposure can occur during the reformulation process. However, exposure to significant amounts of the notified polymer is limited because of the engineering controls, automation of the process and personal protective equipment worn by workers.

Spray painters will come into contact with the notified polymer through dermal, inhalation and ocular routes. The risk of exposure, however, will be minimal as application is done in a ventilated spray booth with workers using personal protective equipment. After application and once dried, the coating containing the notified polymer is cured into an inert matrix and is hence unavailable to exposure.

PUBLIC EXPOSURE

The notified polymer will not be available to the public. Members of the public may make dermal contact with products containing the notified polymer. However, the risk to public health will be negligible because the notified polymer is cured into an inert matrix and will not be bioavailable.

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

The OH&S risk presented by the notified polymer is expected to be low, based on assumed low hazard and low exposure, as well as the engineering controls and personal protective equipment used by workers.

However, as the notified polymer may contain a significant proportion of particles in the respirable/inhalable range, workers handling the powder must have local exhaust ventilation and use respiratory protection. The risk of effects from inhalation cannot be excluded.

PUBLIC HEALTH

The notified polymer is intended for industrial use only. It will not be sold to the general public. The public will come into contact with articles coated or composited with the notified polymer; however, the notified polymer will then be in a cured inert matrix and thus will not be bioavailable. Hence, the risk to public health from the notified polymer is considered to be acceptable.

7. ENVIRONMENTAL IMPLICATIONS

7.1. Exposure Assessment

ENVIRONMENTAL RELEASE

The notified polymer will not be manufactured in Australia, and no release to the environment is expected from transport to the reformulation site. Releases from reformulation may account for up to 2% of the total annual import volume, arising from equipment cleaning and import container residues. It is expected that this will be disposed of to landfill. Notified polymer waste from the washing of tools used in coating applications is expected to be collected and treated in accordance with trade waste regulations. Release of the notified polymer to sewer from reformulation and use is estimated to be up to 4.01 µg/L per annum.

ENVIRONMENTAL FATE

Once the coating is applied to articles, the notified polymer will be incorporated within an inert matrix. It is expected that most of the notified polymer will be disposed of to landfill at the end of its useful life. In landfill, the polymer is expected to eventually undergo *in situ* decomposition by abiotic and biotic processes to form oxides of carbon and nitrogen, and water vapour. Product release from washing of tools used in coating applications is expected to be collected and treated in accordance with trade waste regulations. Release to sewer from improper disposal is expected to be diffused across Australia with a maximum release concentration estimated to be 4.01 µg/L per annum. However, release to surface waters is not expected due to efficient removal of the notified polymer from influent via adsorption to sludge during sewage treatment plant processes. The notified polymer is not expected to be readily biodegradable but due to its high molecular weight it is not expected to bioaccumulate.

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

Notified polymer that is disposed of incorrectly may enter the environment and waterways. However, the polymer is a PLC without significant ionic functionality, which is of low concern to the aquatic environment. The notified polymer that has limited water solubility is not expected to dissolve but rather disperse or precipitate out of solution and settle to sediment. Therefore, it is not expected that the notified polymer will reach a concentration of ecotoxicological significance in the aquatic compartment.

Based on its assumed low hazard and the reported use pattern the notified polymer is not expected pose an unacceptable risk to the aquatic environment.

8. CONCLUSIONS

8.1. 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 unacceptable risk to the health of workers.

8.2. Level of Concern for Public Health

Based on the assumed low hazard and the reported use pattern, the notified polymer is not considered to pose an unacceptable risk to public health.

8.3. Level of Concern for the Environment

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

9. 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.

- Spray application should be carried out in accordance with the National Guidance Material for Spray Painting.
- 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 authorised landfill

Emergency procedures

- Spills and/or accidental release of the notified polymer should be handled by physical containment, collection and re-used to the maximum extent practicable or subsequent safe disposal. Residues may be swept, whilst avoiding creating dust.

10. 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 an additive in coatings or resins for composites, or is likely to change significantly;
 - the amount of notified polymer being introduced has increased, or is likely to increase, significantly;
 - the chemical has begun to be manufactured in Australia;
 - 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.

Material Safety Data Sheet

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