File No PLC/587

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NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in TEGO Airex 900

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Director
NICNAS

TABLE OF CONTENTS

FULL PUBLIC REPORT

Polymer in TEGO Airex 900

1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
International Sales and Marketing (ABN 36 467 259 314) of 262 Highett Road VIC 3190.

NOTIFICATION CATEGORY
Polymer of Low Concern

EXEMPT INFORMATION (SECTION 75 OF THE ACT)
Data items and details claimed exempt from publication:
Chemical Name, Other Names, CAS Number, Molecular and Structural Formulae, Molecular Weight, Polymer Constituents, Residual Monomers/Impurities, Use Details and Import Volume.

VARIATION OF DATA REQUIREMENTS (SECTION 24 OF THE ACT)
No variation to the schedule of data requirements is claimed.

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)
None

NOTIFICATION IN OTHER COUNTRIES
Canada, Philippines and China.

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
Polymer in TEGO Airex 900, X1298, Polymer in Airex 900 (KL 6), Tegopren 3023, LA 308.

MOLECULAR WEIGHT (MW)
Number Average Molecular Weight (Mn) >1000

3. COMPOSITION

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. INTRODUCTION AND USE INFORMATION

MODE OF INTRODUCTION OF NOTIFIED CHEMICAL (100%) OVER NEXT 5 YEARS
Import

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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	1	5	5	5	5

USE

The notified polymer is used as a deaerator (up to 1.5%) in solvent free or low solvent paints.

5. PROCESS AND RELEASE INFORMATION

5.1. Operation Description

The notified polymer will be imported in 25 kg and 200 kg drums from Germany. The drums will be in 20' FCL containers. The containers will be emptied at warehouses and drums stacked for consumer deliveries.

At the formulation site, the notified polymer is charged to blending vessel manually. After blending the final paint is filled into paint containers for retail sale.

6. EXPOSURE INFORMATION

6.1. Summary of Occupational Exposure

Dermal and ocular exposure may occur during formulation processes, e.g. during charging of mixing vessels or quality control. However, exposure to significant amounts of the notified polymer is limited because of the engineering controls provided. Workers may be exposed to the notified polymer during application, particularly during spray application, however, as the paint contains a maximum of 1.5% notified polymer, exposure is expected to be low.

After application and once dried, the paint containing the notified polymer is cured into an inert matrix and is hence unavailable to exposure.

During transport and storage, workers are unlikely to be exposed to the notified polymer except when packaging is accidentally breached.

6.2. Summary of Public Exposure

The notified polymer will not be available to the public. Members of the public may come into contact with products containing the notified polymer.

6.3. Summary of Environmental Exposure

6.3.1. Environmental Release

The imported containers are transported to a warehouse, and subsequently unloaded onto pallets for distribution to reformulators. Environmental release will only occur in the unlikely event of a transport or handling error.

During reformulation, it is expected that up to 1.5% (75 kg) of the total import volume may be released to the environment from cleaning and maintenance operations. This material is expected to be disposed of by a licenced waste contractor to sealed landfill. Further, residual notified polymer in the import drums is expected to account for an additional 1% (50 kg) of the total import volume. This notified polymer will be allowed to dry before being disposed of to landfill.

The paint, containing the notified polymer, will be used in the wood and furniture industry, and is not expected to be made available to the DIY market. The paint will be applied to the wood and furniture by spray, with an estimated efficiency of approximately 70%. Therefore, 30% (1500 kg), of the notified polymer will be contained in overspray and from cleaning of application equipment, which after being allowed to harden, will again be disposed of to landfill.

Therefore, up to 32.5% (1625 kg) of the total import volume is disposed of to landfill.

6.3.2. Environmental Fate

The notified polymer is expected to be contained within the cured coating matrix, and thus will not be exposed to the environment. Notified polymer applied to wood and furniture is expected to eventually be either thermally decomposed if the product is burnt, or be disposed of to landfill. Due to its low water solubility, the notified polymer will remain bound within the soils and sediments of the landfill and should not hydrolyse but be slowly degraded by biotic and abiotic processes.

7. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa	Yellowish fluid
Glass Transition Temp	Not provided
Density	980 kg/m^3 at 25°C
Water Solubility	0.004 g/L at 20°C. No support has been provided for the claimed water solubility however, silicones are known for their insolubility.
Dissociation Constant	Not provided, no dissociable groups present
Particle Size	Not relevant
Reactivity	Stable under normal environmental conditions
Degradation Products	None under normal conditions of use

8. HUMAN HEALTH IMPLICATIONS

8.1. Toxicology

The following toxicological end-points were submitted:

Endpoint	*Result*	*Classified?*	*Effects Observed?*
Rat, acute oral	LD50 >10mL/kg bw, low toxicity	no	no
Rabbit, skin irritation	Slightly irritating	no	Yes
Rabbit, eye irritation	Very slightly irritating	no	Yes

Irritant effects observed in both the eye and skin irritation studies were minimal and were confined to the 1 hour and 24 hour intervals.

All results were indicative of low hazard.

8.2. Human Health Hazard Assessment

The notified polymer meets the PLC criteria and considered to be of low hazard, taking into account the low oral acute toxicity and minimal irritation.

9. ENVIRONMENTAL HAZARDS

9.1. Ecotoxicology

No toxicological data were submitted.

9.2. Environmental Hazard Assessment

Polynonionic polymers with NAMW >1000 are of low concern to the aquatic environment.

10. RISK ASSESSMENT

10.1. Environment

The paint product containing the notified polymer is expected to be used only by the wood furniture industry. The major environmental exposure is expected to be due to the disposal to landfill of waste from the coatings manufacture and

particularly from overspray during application. If spilt on land, the notified polymer is expected to become immobilised in the soil layer. Due to its low water solubility, the polymer will remain bound within the soils and sediments of the landfill and to be slowly degraded by the abiotic processes.

Based on the proposed use pattern, the release of the notified polymer to the aquatic environment is expected to be low. Therefore, and given the above, environmental exposure and the overall environmental risk are expected to be low

10.2. Occupational Health and Safety

The OHS risk presented by the notified polymer is expected to be low based on its low toxicity and low potential for exposure. The minor irritant effects of the polymer are not likely to be of concern during formulation as engineering controls will be in place.

10.3. Public Health

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 bound within a matrix resistant to degradation and unlikely to be bioavailable.

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 as part of the notification statement. The accuracy of the information on the MSDS remains the responsibility of the applicant.

13. 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.
- 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.

Storage

Emergency procedures

- Spills/release of the notified polymer should be handled by physical containment, collection and disposal to secure landfill.

13.1. 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.