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Date 19 January 2004

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

FULL PUBLIC REPORT

Vinyl Crosspolymer in Dow Corning 2-7751

This Self Assessment has been compiled by the notifier in accordance with the provisions of, and the proposed Low Regulatory Concern Chemicals (LRCC) amendments to, 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 screens the risk assessment for public health and occupational health and safety. The environmental risk assessment is screened by the Department of the Environment and Heritage. An audit of the data supporting this assessment will be conducted by NICNAS.

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**Director
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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)

Dow Corning Australia Pty Ltd

NOTIFICATION CATEGORY

Synthetic Polymer of Low Concern

EXEMPT INFORMATION (SECTION 75 OF THE ACT)

Data items and details claimed exempt from publication:

- CHEMICAL NAME
- OTHER NAME
- CAS NUMBER
- MOLECULAR FORMULA
- STRUCTURAL FORMULA
- MEANS OF IDENTIFICATION
- NUMBER AVERAGE MOLECULAR WEIGHT
- WEIGHT-AVERAGE MOLECULAR WEIGHT
- WEIGHT PERCENTAGE OF POLYMER SPECIES WITH MW<1000 AND MW<500
- POLYMER CONSTITUENTS
- RESIDUAL MONOMERS AND IMPURITIES
- MANUFACTURE OR IMPORT VOLUME
- PURITY

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

- US EPA: PMN, 29 May 2002
- Environment Canada: being submitted

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

Vinyl Crosspolymer in Dow Corning 2-7751

3. COMPOSITION

PLC CRITERIA JUSTIFICATION

<i>Criterion</i>	<i>Criterion met (yes/no/not applicable)</i>
Meets Molecular Weight Requirements	Yes
Meets Functional Group Equivalent Weight (FGEW) Requirements	Yes
Low Charge Density	Yes
Approved Elements Only	Yes
No Substantial Degradability	Yes
Not Water Absorbing	Yes
Low Concentrations of Residual Monomers	Yes
Not a Hazard Substance or Dangerous Good	Yes

The notified polymer meets the PLC criteria.

4. 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>	30-100	30-100	30-100	30-100	30-100

USE

The notified polymer will be used industrially as a protective coating for paper products.

5. PROCESS AND RELEASE INFORMATION

5.1. Operation Description

Manufacturing

The notified polymer will be manufactured in Dow Corning Corporation's overseas facilities and imported into Australia.

Processing

The notified polymer will be imported as a 100% polymer fluid in 200-litre steel drums for use directly as paper coating. At a paper processing plant, it will be pumped from the drum container through an enclosed system directly into a dipping tank, where rolls of paper are fed automatically and continuously through a roller system and treated. Treated paper is then carried by conveyor and dried in an oven at a temperature of about 120°C.

The formulation and application equipment will be cleaned by washing with water. The liquid waste will be treated as site industrial waste and dealt with by licensed disposal contractor. A small amount of the notified polymer (approximately 0.5%) is expected to be released into the sewer from the cleaning of process equipment.

The workroom involved is provided with good mechanical dilution ventilation, while the dipping tank

is fitted with locally exhausted side hoods. The work-floor is bunded to control any surface runoff that may occur. Operators wear overalls and protective gloves to prevent skin contact, and wear chemical goggles to prevent eye contact..

End-use

The cured polymer will adhere strongly to the treated paper and provide a durable protective coating. Degradation of the polymer will not occur under normal use conditions.

6. EXPOSURE INFORMATION

6.1. Summary of Environmental Exposure

Empty drums containing very small amount of residual polymer ($\leq 1\%$) will be disposed of to landfill. Any polymer released in landfill will not leach into the aquatic compartment due to its expected low water solubility. Some liquid wastes generated from the cleaning of process equipment may be released into the sewer, where the notified polymer will eventually adsorb onto sediments due to its low water solubility.

6.2. Summary of Occupational Exposure

During transport and storage, workers are unlikely to be exposed to the notified polymer except when the steel drum is accidentally broken. Dermal and ocular exposure can occur during the dipping 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. After application and once dried, the coating containing the notified polymer is cured into an inert matrix and is hence unavailable to exposure.

6.3. Summary of Public Exposure

The notified polymer is intended only for use in industry. It will not be sold to the public except in the form of finished articles.

7. ESTABLISHMENT OF LOW PHYSICAL AND CHEMICAL HAZARD

Appearance at 20°C and 101.3 kPa	Liquid, colourless with a slight odour
Melting Point/Glass Transition Temp	Not determined
Density	970 kg/m ³ at 25°C
Water Solubility	<0.0001 g/L at 20°C
Reactivity	It is a stable polymer.
Degradation Products	In the event of fire, oxides of carbon and silicon may be formed.

7.1. Comments

The notified polymer is chemically stable and will not be hydrolysed in water. It has very low water solubility in line with known properties of siloxanes.

8. ESTABLISHMENT OF LOW HUMAN HAZARD

8.1. Toxicology

No toxicological data were submitted.

8.2. Human Health Hazard Assessment

The notified polymer meets the PLC criteria and can therefore be considered to be of low hazard.

9. ENVIRONMENTAL HAZARDS

9.1. Ecotoxicology

No toxicological data were submitted.

9.2. Environmental Hazard Assessment

Due to its expected low toxicity and water solubility, no adverse effects are expected from the notified polymer towards aquatic animals and bacteria.

10. RISK ASSESSMENT

10.1. Environment

The notified polymer, once cured to form a water-resistant film on paper, is highly stable to temperature and other environmental conditions. Waste paper may be disposed of via incineration or to landfill. Empty containers of the notified polymer may also be disposed of to landfill.

In the event of an accidental spill of the notified polymer into waterways, the polymer is not expected to disperse in water but settle out onto sediments. If the polymer is spilled on land, it is expected that the polymer would become immobilised in the soil layer. Contaminated soil can then be collected and disposed of to landfill.

Due to its low water solubility, the notified polymer, if released in landfill, is not expected to leach into the aquatic compartment. In soil, siloxanes are degraded.

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 due to its low toxicity and low potential for exposure.

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 cured polymer. However, the risk to public health will be negligible because the notified polymer is chemically stable 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 no 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 B 12 of the *ICNA Act*. 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.
- A copy of the MSDS should be easily accessible to employees.
- If 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.

Environment

- The following control measures should be implemented by the paper processing plant to minimise environmental exposure during use of the notified polymer:
 - Regular maintenance of bunding, drains, intercept pits and effluent treatment plants.
 - Handle only in sealed (eg cemented) areas which have good bunding and no access to storm drains or watercourses.

Disposal

- The notified polymer should be disposed of by release to landfill or incineration.
- If potentially being released to sewer in effluent, then there should be some pre-treatment to encourage removal in sludge and/or passing through a sand filter or similar filter to allow removal by adsorption.

Emergency procedures

- Spills/release of the notified polymer should be handled by containment, and adsorption with material such as sand. Contaminated material (including sand) should be collected, placed into sealable labelled container and disposed of to landfill. Do not allow to enter drains or watercourses.