File No PLC/942

August 2010

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in GELVA GMR 8103-01

This 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, Water, Heritage and the Arts.

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 334-336 Illawarra Road, Marrickville NSW 2204.

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:	334 - 336 Illawarra Road MARRICKVILLE NSW 2204, 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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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)

Cytec Australia Holdings Pty Ltd (45 081 148 629)
Suite 1, Level 1 Norwest Quay,
21 Solent Circuit, Norwest Business Park
BAULKHAM HILLS NSW 2153

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 Manufacture/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
None

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
GELVA GMR 8103-01 (product containing the notified polymer at < 40%)

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

REACTIVE FUNCTIONAL GROUPS
The notified polymer contains only low concern functional groups.

3. 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. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa	Yellow viscous liquid
Melting Point/Glass Transition Temp	Not determined as the product is liquid
Density	1120 kg/m^3 at 20 °C
Water Solubility	< 10 mg/L (TOC) at 20°C. The water solubility was determined by the TOC (total organic carbon) analysis of samples from 2 extractions, performed serially on a vigorously dried sample of polymer. The first extraction showed 2.1 ppm TOC, and the re-extraction showed 0.6 ppm TOC, indicating that the polymer is probably not acting as a single component, and that the more soluble material (ostensibly, the lower molecular weight material) can be exhausted by extraction with water.
Particle Size	Not applicable as the product is liquid
Reactivity	Stable under normal environmental conditions. Hydrolysis is expected to be slow in the environmental pH range despite the presence of hydrolysable functional groups in the polymer.
Degradation Products	None under normal conditions of use

5. INTRODUCTION AND USE INFORMATION

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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	<100	<100	<100	<100	<100

Use
The notified polymer is a component of a ready-to-use pressure sensitive adhesive. The majority of the product will be used for high performance industrial tapes and labels. Other uses may include automotive instrument panels and electronic assemblies, name plates, low and high surface energy materials and foam tapes.

Mode of Introduction
The notified polymer will be imported in the ready-to-use product GELVA GMR 8103-01, containing < 40% of the notified polymer. The product is a viscous liquid and will be imported in 16 and 181 kg metal containers and transported from the wharf to Cytec Australia Holdings warehouses from where, it will be redistributed to tape manufacturers and other end users.

6. HUMAN HEALTH IMPLICATIONS

Hazard Characterisation
No toxicological data were submitted. The notified polymer meets the PLC criteria and can therefore be considered to be of low hazard.

Occupational Health and Safety Risk Assessment
At end user sites, the containers will be opened and pumping equipment connected from the containers to the application machinery via a hose. Adhesive (containing <40% notified polymer) will be applied to the reverse side of clear films to produce the labels. This may be done using the curtain coating or reverse gravure method. The gravure method utilizes rollers to coat the adhesive onto the film and a blade to remove any excess adhesive. For curtain coating, the coating streams downwards and coats the film passing below the stream on a conveyer. During both processes, excess adhesive is captured and recirculated. After application of the adhesive, the film is UV cured and the matrix fully cross-linked and no longer bioavailable. The machinery required for these operations are enclosed and automated.

Exposure to significant amounts of the notified polymer will be limited due to exhaust ventilation and the enclosed and automated nature of the application processes. However, dermal and ocular exposure of workers to the notified polymer may occur as a result of spills and leakages during the connecting and disconnecting of

pumping equipment to the application machinery. Exposure should be minimised by wearing personal protective equipment.

Based on the expected low exposure of workers to the notified poymer and its anticipated low hazard, the risk to human health presented by the notified polymer is not considered to be unacceptable.

Public Health Risk Assessment
The notified polymer is intended for industrial use only and as such public exposure to the notified polymer is not expected. The public will come into contact with the coated tape and labels. However, the adhesive will be on the reverse side of the item and exposure to the public is not expected. The public may come in contact with the adhesive if the label or tape is accidentally or intentionally removed. In such instances the notified polymer will be immobilised in the adhesive and exposure to the public is not expected. Therefore, the risk to public health will be low, based on the anticipated low hazard of the notified polymer and expected low exposure.

7. ENVIRONMENTAL IMPLICATIONS

Hazard Characterisation
No ecotoxicological data were submitted. PLCs without significant ionic functionality are of low concern to the aquatic environment.

Environmental Risk Assessment
The notified polymer will be imported as a component of a ready-to-use pressure sensitive adhesive. There will be no local manufacture or reformulation of the product containing the polymer.

Most of the notified polymer will be applied to tape and labels, automotive instrument panels and electronic assemblies, nameplates, low and high surface energy materials and foam tapes. This use pattern suggests that the notified polymer will have the same fate as the disused product that the tape, label etc is adhered to, which will be most likely disposed of to landfill. Up to 1% of the notified polymer in the worst case will be waste from application procedures and residues left in the empty containers, most of which will be disposed of to landfill. The empty containers will be either disposed of to landfill or be rinsed and reused (for larger containers). No significant release of the notified polymer to sewer is expected. In case of any release to the sewer, the small amount of polymer remaining in solution will be adsorbed to the sludge, which in turn would also be disposed of to landfill. Bioaccumulation is not expected to occur based on the notified polymer's high molecular weight.

In landfill the polymer will bind to soil and will decompose under slow biotic or abiotic degradation processes, forming water and oxides of carbon and nitrogen.

8. CONCLUSIONS AND RECOMMENDATIONS

Human health risk assessment
Under the conditions of the occupational settings described, the notified polymer is not considered to pose an unacceptable risk to the health of workers.

When used in the proposed manner, the notified polymer is not considered to pose an unacceptable risk to public health.

Environmental risk assessment
Based on the reported use pattern, the notified polymer is not considered to pose a risk to the environment.

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 *Approved Criteria for Classifying Hazardous Substances* [NOHSC:1008(2004)], 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.

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 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 a component of a ready-to-use pressure sensitive adhesive or is likely to change significantly;
  - the amount of notified polymer being introduced has increased from 100 tonnes/year, 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 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 MSDS of the product containing the notified polymer provided by the notifier was reviewed by NICNAS. The accuracy of the information on the MSDS remains the responsibility of the applicant.