File No PLC/907

March 2010

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in Viscoplex 0/6832

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:

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Director
NICNAS

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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
Evonik Degussa Australia Pty Ltd (ABN 16 079 823 313)
30 Commercial Drive
DANDENONG VIC 3175

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
None

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
Viscoplex 0/6832

OTHER NAME
Acrylic copolymer

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: Squashy solid

Melting Point / Glass Transition Temp -40°C

Density 930 kg/m^3 at 20°C

Water Solubility

pH	Conditions	% w/w
unbuffered	20°C, 1 day	0.028
2	20°C, 1 day	0.032
7	37°C, 1 day	0.028
9	20°C, 1 day	0.028

Water solubility was determined by dissolved organic carbon (DOC) according to the Korean Polymer Test Guideline similar to OECD TG 120.

Particle Size Imported in solution.

Reactivity Stable under normal environmental conditions. The notified polymer contains hydrolysable functionalities, but hydrolysis is expected to be slow in the environmental pH range 4–9.

Degradation Products Carbon dioxide, water, methacrylate monomers.

5. INTRODUCTION AND USE INFORMATION

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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	3-10	3-10	10-30	10-30	30-100

Use

The product containing 40% of the notified polymer will be used as an additive in lubricants for industrial and commercial purposes.

Mode of Introduction and Disposal

The product will be imported in drums and transported by road either to Evonik Degussa Australia's storage facilities for distribution and storage or directly to the customer's storage facilities. The major customers of the product are lubricant blending facilities. In the lubricant blending facility, the imported product will be mixed with other ingredients to formulate an additive which contains 25% notified polymer. This process is automated and computer-controlled. The blended material will then be sold to industries such as automobile manufacturing plants and commercial garages. The formulated product will be dispensed using sealed delivery on the following: automobiles on the assembly line at automobile manufacturing plants; and gearboxes of cars and trucks in commercial garages.

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

The product containing the notified polymer will be transported and stored in closed containers. Dermal exposure may occur in the event of an accidental breach of the packaging material.

During the blending process, workers may have dermal and/or ocular exposure to the notified polymer. However, since the mixing process is largely enclosed and automated, exposure is expected to be limited. Workers are expected to wear suitable personal protective equipment (PPE) such as nitrile rubber gloves and tightly fitting goggles.

The potential for exposure during the automated transfer of the formulated product to cars and trucks is negligible since dispensing will make use of a sealed delivery system. In the event of an accidental spill, control measures are expected to be in place.

The OHS risk presented by the notified polymer is expected to be low, given the expected low hazard of the polymer, as well as the low exposure due to use of the engineering controls, the good work practices and safety measures including the use of appropriate PPE by workers.

Public Health Risk Assessment
The notified polymer will not be sold to the public. The formulated product will be used in automobile manufacturing plants and commercial garages. Public exposure is possible in a transport accident where the formulated product is spilled on roads. As there will be no exposure of the public to the product containing the notified polymer under normal use conditions and expected low hazard of the polymer, the risk to the public is considered to be negligible.

7. ENVIRONMENTAL IMPLICATIONS

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

Environmental Risk Assessment
A solution of notified polymer (40% in solvent) will be imported into Australia for further blending into driveline oil to be used in closed gear boxes. The driveline oil will be used in commercial garages (50%) and original equipment manufacture (50%). Delivery of the driveline oil into automobiles is expected to have limited environmental release, due to automated sealed-dispensing systems. Accidental spills of the notified polymer during transport, blending and end-use operations are estimated to be < 0.1% of total import volume. Accidental spills are expected to be physically contained and recycled, or disposed of to landfill. In landfill the notified polymer is likely to adsorb to soil, and degrade slowly by biotic and abiotic processes to form water and oxides of carbon. During use, driveline oils are in a closed system, and are often effective for the life of the automobile. At the end of its useful life most of the used driveline oil (and notified polymer) is expected to be disposed of to landfill or recycled as burner oil (e.g. in kilns and industrial burners) and it will be thermally decomposed into water and oxides of carbon. The notified polymer is not expected to bioaccumulate due to its high molecular weight and limited potential for exposure to the aquatic environment.

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 expected 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 an additive in lubricants for industrial and commercial purposes, or is likely to change significantly;
  - the amount of notified 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 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.