File No PLC/1049

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer SU-2

This Assessment has been compiled in accordance with the provisions of the *Industrial Chemicals (Notification and Assessment) Act 1989* (Cwlth) (the Act) and Regulations. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) is administered by the Australian Government 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 Australian Government Department of Sustainability, Environment, Water, Population and Communities.

For the purposes of subsection 78(1) of the Act, this Public Report may be inspected at our NICNAS office by appointment only at Level 7, 260 Elizabeth Street, Surry Hills NSW 2010.

This 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

April 2012

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SUMMARY

The following details will be published in the NICNAS *Chemical Gazette:*

ASSESSMENT REFERENCE	APPLICANT(S)	CHEMICAL OR TRADE NAME	HAZARDOUS SUBSTANCE	INTRODUCTION VOLUME	USE
PLC/1049	Honda Australia Pty Ltd	Polymer SU-2	No	≤ 1200 kg per annum	A component of automotive adhesives

CONCLUSIONS AND REGULATORY OBLIGATIONS

Human Health Risk Assessment
Based on the assumed low hazard and the assessed use pattern, the notified polymer is not considered to pose an unreasonable risk to the health of workers and the public.

Environmental Risk Assessment
Based on the assumed low hazard and the assessed use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.

Health and Safety Recommendations

- No specific engineering controls, 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.

- Application of the adhesive containing the notified polymer should be carried out in well ventilated areas.

- Personal protective equipment should be worn where dermal or ocular exposure may occur.

  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.

Environmental Recommendations

- No specific control measures are required to minimise release of the notified polymer to the environment.

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.

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 automotive adhesives, 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 notified polymer 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 was provided by the applicant. The accuracy of the information on the MSDS remains the responsibility of the applicant.

ASSESSMENT DETAILS

1. APPLICANT AND NOTIFICATION DETAILS

Applicants
Honda Australia Pty Ltd (ABN: 66 004 759 611)
95 Sharps Road
Tullamarine VIC 3043

Exempt Information (Section 75 of the Act)
Data items and details claimed exempt from publication: chemical name, CAS number, molecular and structural formulae, molecular weight, polymer constituents, residual monomers/impurities, use details, and import volume.

2. IDENTITY OF POLYMER

Marketing Name(s)
Polymer SU-2

Molecular Weight
Number Average Molecular Weight (Mn) is > 10,000 Da

Reactive Functional Groups

Functional Group	Category	Equivalent Weight (FGEW)
Methoxysilane	High Concern	>5000
Tertiary amine	High Concern	>5000

The NAMW is > 10,000 Da and thus the reactive functional group criteria do not apply.

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	Black liquid paste (product)
Melting Point/Glass Transition Temp	Not applicable
Density	1000-1100 kg/m^3 at 25 °C (Product MSDS)
Water Solubility	Not determined. Expected to crosslink in the presence of water.
Dissociation Constant	Not determined. The notified polymer has end-groups that may be cationic in the environmental pH range (4 – 9).
Particle Size	Not applicable
Reactivity	Reacts with moisture
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*
Kilograms	400-1200	400-1200	400-1200	400-1200	400-1200

Use
The notified polymer will be imported into Australia in 125 mL tubes, as a component of an adhesive used in automotive manufacture and repair at concentrations up to 40%. The adhesive will be applied to surfaces directly from the tube.

6. HUMAN HEALTH RISK ASSESSMENT

No toxicological data were submitted. The notified polymer meets the PLC criteria and is therefore assumed to be of low hazard. The notified polymer contains methoxysilyl functional groups which are of concern to human health via lung toxicity and irritation and release a toxic and hazardous gas in end-use. However the high molecular weight (NAMW > 10,000 Da), method of application (non-spray) and low volume of use would significantly reduce the hazard potential and exposure.

Occupational Health and Safety Risk Assessment
Dermal and ocular exposure to the notified polymer is possible during the use of the adhesive containing the notified polymer. Inhalation exposure of the notified polymer is not expected due to the viscous nature of the product and the low vapour pressure of the notified polymer. However inhalation of small quantities of the liberated gas could occur. Workers are expected to wear personal protective equipment (PPE) to minimise dermal and ocular exposure during handling and application. Once the adhesive is dried, it is not expected to be bioavailable.

The risk of the notified polymer to workers is not considered unreasonable based on the expected hazard profile, the controls in place and the assessed use pattern.

Public Health and Safety Risk Assessment
The public is not expected to be exposed to the polymer, the adhesive product or surfaces which have been glued. Given the very low exposure potential, the risk posed by the notified polymer to the public is not considered unreasonable.

7. ENVIRONMENTAL RISK ASSESSMENT

No ecotoxicological data were submitted. Polymers with low cation charge density are generally of low concern to the environment.

Release of adhesive containing the notified polymer to the environment may occur as a result of leaking or damaged containers (1% of total import volume), residual adhesive remaining in empty tubes (5%), or as a result of wiping excess adhesive with a cloth or that which has deposited onto masking tape (5%). All of these releases are expected to be disposed of to landfill. The majority of notified polymer is expected to be cured between bonded surfaces in automobiles and will share the fate of the bonded vehicle parts at the end of their useful life. Articles containing the notified polymer will either go to metal recyclers or be disposed of to landfill. During metal recycling, the adhesive matrix will be destroyed via thermal decomposition, generating water and oxides of carbon, nitrogen and silicon. In landfill the notified polymer is not expected to be bioavailable, mobile nor rapidly degradable due to its high molecular weight and incorporation into an inert matrix. It is expected to eventually degrade by biotic and abiotic processes in landfill to form water and oxides of carbon, nitrogen and silicon. Therefore, based on its assumed low hazard and assessed use pattern, the notified polymer is not considered to pose an unreasonable risk to the environment.