File No: SAPLC/192

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in FVA-2

This Self Assessment has been compiled by the applicant and adopted by NICNAS in accordance with the provisions of the Industrial Chemicals (Notification and Assessment) Act 1989 (the Act) and Regulations. This legislation is an Act of the Commonwealth of Australia. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS), administered by the Department of Health and the Department of the Environment, has screened this assessment report. The data supporting this assessment will be subject to audit by NICNAS.

This Public Report is 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

August 2016

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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
SAPLC/192	A.S. Harrison & Co Pty Ltd	Polymer in FVA-2	No	≤ 100 tonnes per annum	Diesel fuel additive

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, 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 (M)SDS should be easily accessible to employees.

- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the *Globally Harmonised System of Classification and Labelling of Chemicals (GHS),* as adopted for industrial chemicals in Australia, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation should be in operation.

Disposal

- Where reuse or recycling are not appropriate, dispose of the notified polymer in an environmentally sound manner in accordance with relevant Commonwealth, state, territory and local government legislation.

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 diesel fuel additive, 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 (M)SDS of a product containing the notified polymer was provided by the applicant. The accuracy of the information on the (M)SDS remains the responsibility of the applicant.

ASSESSMENT DETAILS

1. APPLICANT AND NOTIFICATION DETAILS

Applicant
A.S. Harrison & Co Pty Ltd (ABN: 89 000 030 437)
75 Old Pittwater Road
Brookvale NSW 2100

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 and residual monomers/impurities.

2. IDENTITY OF POLYMER

Marketing Name
FVA-2 (product containing the notified polymer)

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

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	Liquid
Melting Point/Glass Transition Temp	Not determined. Liquid at ambient room temperature
Density	Approximately 800 kg/m^3 (density of diesel fuel)
Water Solubility	Not determined. Expected to be low based on the predominantly hydrophobic structure and high molecular weight of the notified polymer.
Dissociation Constant	Not determined. The notified polymer is not expected to be ionised in the environmental pH range (4 - 9).
Reactivity	Stable under normal environmental conditions
Degradation Products	None under normal conditions of use

The notified polymer is manufactured in solvent and introduced as part of a solvent based formulation. The notified polymer is not isolated from solution under the normal circumstances of use and storage.

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 will be used as a diesel fuel additive at ≤ 80 ppm concentration. The notified polymer will be imported as part of diesel fuel additive packages contained in intermediate bulk containers (IBC) or ISO Intermodal Containers. The additive mixture (containing the notified polymer at 10% concentration) will be added to fuel by continuous injection into the fuel storage tank at the refinery and/or fuel distribution terminal. Diesel fuel containing the notified polymer (at ≤ 80 ppm) will then be transported to fuel retail stations.

6. HUMAN HEALTH RISK ASSESSMENT

Exposure Assessment

OCCUPATIONAL EXPOSURE

Category of Worker	Exposure Duration (hours/day)	Exposure Frequency (days/year)
Stevedore	1	1 – 2
Formulator	2	6 – 8
Quality Control	2	6 – 8
Transport Workers	10-20	6 – 8
End User	<1	8 – 12

The potential routes of occupational exposure are dermal and ocular. Inhalation exposure is not expected as the polymer is expected to have a low vapour pressure and the generation of mists or aerosols is not expected.

Transport and Storage
Transport workers are not expected to be exposed to the imported product containing the notified polymer at 10 % concentration, as they will be handling closed containers. Dermal or ocular exposure is possible in the event of an accident where the packaging is breached or during transfer to storage tanks.

Blending
At the fuel manufacturer's refinery terminal, blending of the notified polymer with fuel will be carried out automatically in a closed system through volumetric injection of the additive package (containing the notified polymer at 10 % concentration) into tank trucks. Exposure to the notified polymer may occur from accidental spillage or through the handling of feed couplings involved in the transfer of the fuel additive containing the notified polymer. Exposure is expected to be low and further reduced by adequate ventilation and workers wearing personal protective equipment when handling fuel.

Worker exposure to the notified polymer at up to 80 ppm concentration may also occur during sampling and analysis of blended fuel at the refinery or during maintenance of refinery plant or pipelines. The exposure would be limited by appropriate personal protective equipment worn by workers.

Transport and storage of fuel
Dermal or ocular exposure to drips and spills of fuel containing the notified polymer at 80 ppm concentration is possible during the connection and disconnection of transfer hoses. Exposure is expected to be limited during transportation as the protocols of loading and unloading are done with minimal spills. The drivers also usually wear appropriate personal protective equipment when unloading the fuel.

End users of fuel
Users of vehicles may be exposed to fuel containing the notified polymer at 80 ppm concentration during handling and fuelling of the vehicles.

PUBLIC EXPOSURE
The public will not have exposure to the imported product containing the notified polymer at 10 % concentration as it will be used in industrial settings.

The public may have incidental skin or eye contact with fuel containing the notified polymer at ≤ 0.01 % concentration through operations such as refilling vehicles.

Toxicological 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
The notified polymer is expected to be of low hazard. Workers may be exposed to the notified polymer at 10% concentration in a fuel additive. The fuel additive product and the fuel end product are classified as hazardous due to the presence of other hazardous ingredients and as such personal protective equipment (gloves, coveralls and safety glasses/goggles) should be utilised to reduce the risk of health effects.

Public Health
The public may be exposed to the notified polymer at ≤ 0.01% concentration in fuel. Given the low use concentration and expected low hazard of the notified polymer, the risk to the public from the use of the notified polymer is not expected to be unreasonable.

7. ENVIRONMENTAL RISK ASSESSMENT

Exposure Assessment

ENVIRONMENTAL RELEASE
The notified polymer will be imported into Australia for use as an additive in diesel fuel. No significant release of the notified polymer is expected from transportation and storage. Blending of the additive containing the notified polymer into diesel fuels will occur in well-controlled industrial facilities. Minimal release of the notified polymer into the environment is expected as blending occurs in fully enclosed automated systems with fixed transfer lines. Accidental spills and leaks during transport and normal blending and packaging procedures will be contained and collected for disposal to landfill in accordance with local government regulations.

When used as an additive in diesel fuel, the majority of the notified polymer will be consumed during the combustion of the fuel by vehicles or machinery.

Waste water from the cleaning of the import containers and storage vessels is expected to be collected by an approved waste management company and flocculated, with solids generated to be disposed of to landfill in accordance with local government regulations. Release of the notified polymer to surface water is expected to be negligible.

ENVIRONMENTAL FATE
Most of the notified polymer in diesel fuel will be consumed and thermally decomposed during use. Minor amounts of the notified polymer are expected to be disposed to landfill as residues in containers or collected waste. Given that the notified polymer is expected to adsorb strongly to soils and its low water solubility, the notified polymer sent to landfill is expected to be immobile. In landfill, the notified polymer is expected to eventually degrade via abiotic and biotic processes to form water and oxides of carbon.

Environmental 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 is not expected to pose an unreasonable risk to the environment based on the assessed use pattern indicating low potential for release to the aquatic environment, and the expected low potential for ecotoxicological effects to aquatic organisms.