File No: SAPLC/193

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in Polylite SMF-4105-S

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 and Energy, have 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

September 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/193	DIC Australia Pty Ltd	Polymer in Polylite SMF-4105-S	No	≤ 500 tonnes per annum	A component of building materials

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 for the 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 a component of building materials, 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 the 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

Applicants
DIC Australia Pty Ltd (ABN: 12 000 079 550)
323 Chisholm Road,
AUBURN NSW 2144

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, use details, and residual monomers/impurities.

2. IDENTITY OF POLYMER

Marketing Name(s)
Polylite SMF-4105-S (product containing 63% of the notified polymer)

Molecular Weight
Number Average Molecular Weight (Mn) is > 1,000 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	Colourless solid
Melting Point/Glass Transition Temp	Not determined as polymer is supplied as a solution in styrene
Density	Not determined
Water Solubility	Not determined. Expected to have low water solubility based on its predominantly hydrophobic chemical structure and high molecular weight.
Dissociation Constant	Not determined. The notified polymer does not contain any functional groups that are expected to dissociate in water
Particle Size	Not determined as polymer is supplied as a solution in styrene
Reactivity	Stable under normal environmental conditions
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	300	300	500	500

Use
The notified polymer is a component of POLYLITE SMF-4105-S which will be used to manufacture building materials. The POLYLITE SMF-4105-S will be imported initially in 200 litre steel drums and as the volume of importation increases 1,000 litre stainless steel containers.

6. HUMAN HEALTH RISK ASSESSMENT

Occupational Health and Safety Risk Assessment

Transport and warehousing
Workers are not expected to be exposed to the imported notified polymer, as they will be handling closed containers. Exposure is possible in the event of an accident where the packaging is breached.

Building material Manufacturing Workers
The notified polymer solution will be supplied from the drums or tote tanks to the mixer and then mixed with additives at customer's site. After mixing, the mixture will be moulded into sheets and chopped glass fibres are spilled onto them. The sheet moulded material will be formed through a guide and will be cured by oven.

The workers will wear protective equipment e.g. gloves and masks, therefore no direct exposure is expected to occur.

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

Although not considered in this risk assessment, the notified polymer contains residual monomers that are classified as hazardous according to the *Globally Harmonised System for the Classification and Labelling of Chemicals (GHS),* as adopted for industrial chemicals in Australia. These are present in the notified polymer as introduced above the cut off concentrations for classification.

The risk of the notified polymer to occupational and public health is not considered to be unreasonable given the assumed low hazard and the assessed use pattern.

Public Health and Safety Risk Assessment
The notified polymer will not be sold to the general public. Once the notified polymer is used in the manufacture of the building sheets it is irreversibly bound to the matrix of the substrate. As such, it is not bioavailable and cannot be released during end uses.

Public exposure to the notified chemical as a result of transportation within Australia is unlikely unless there is an accident. The material safety data sheets (SDS) supplied for the notified substance have adequate instructions for clean-up and disposal of any accidental spills and therefore public exposure as a result of a transport accident is likely to be negligible.

In the case of the notified polymer being used in building materials that will be applied to fibre reinforced plastic roofing and siding panels the potential for migration of the notified polymer is minimal due to the high molecular weight of the polymer. However, given the assumed low hazard, the risk posed by exposure to the notified polymer is not considered unreasonable.

7. ENVIRONMENTAL RISK ASSESSMENT

7.1. Exposure Assessment

ENVIRONMENTAL RELEASE
The notified polymer will not be manufactured or reformulated in Australia. Therefore, release to the environment could only occur through accidental spills or leaks of the storage containers during shipping, transport warehousing, and/or use at the construction site. In the event of an accidental release or spills, the waste is expected to be contained and disposed of to landfill as per state, territory and local regulations.

Once the building sheets have been formed and fully cured the notified polymer will be locked into the sheet matrix.

The majority of the substrate to which the notified polymer has been applied is expected to be disposed of to landfill. Therefore, release of the notified polymer to the environment is expected to be low.

ENVIRONMENTAL FATE
No significant release of the notified polymer to the aquatic environment is expected based on the reported use pattern. The notified polymer is not expected to bioaccumulate due to its high molecular weight and low potential for aquatic exposure based on its reported use pattern. The notified polymer used for building sheets will be bound in the matrix and at the end of their lifecycle are expected to be sent to landfill for disposal. In landfill, the notified polymer will eventually degrade by abiotic and biotic processes into water and oxides of carbon.

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

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