

**NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME
(NICNAS)**

POLYMER OF LOW CONCERN PUBLIC REPORT

Prepolymer in Sikaflex 529 AT

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**

November 2011

Table of Contents

SUMMARY	2
CONCLUSIONS AND REGULATORY OBLIGATIONS.....	2
ASSESSMENT DETAILS.....	3
1. APPLICANT AND NOTIFICATION DETAILS.....	3
2. IDENTITY OF POLYMER	4
3. PLC CRITERIA JUSTIFICATION	4
4. PHYSICAL AND CHEMICAL PROPERTIES.....	4
5. INTRODUCTION AND USE INFORMATION	4
6. HUMAN HEALTH RISK ASSESSMENT.....	5
7. ENVIRONMENTAL RISK ASSESSMENT	5

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/991	SIKA AUSTRALIA PTY LTD	Prepolymer in Sikaflex 529 AT	No	≤10 tonnes per annum	Component of automotive spray sealant

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.

- In the interest of occupational health and safety, the following precautions should be observed for use of the notified polymer as introduced:
 - Aerosols should not be generated during spray application.
 - Workers should wear personal protective equipment to protect skin and eyes during the handling and application of the product containing the notified polymer.
- If aerosols are formed during the use of the notified polymer, engineering controls and respiratory protection should be used to prevent inhalation exposure.
- A copy of the MSDS should be easily accessible to employees.
- Spray application should be carried out in accordance with the Safe Work Australia *National Guidance Material for Spray Painting* [NOHSC (1999)].
- 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 to landfill.

Storage

- The following precautions should be taken by workers regarding storage of the notified polymer:
 - Store in a segregated and approved area.
 - Store in original container protected from direct sunlight in a dry, cool and well ventilated area, away from incompatible materials (oxidising substances, strong acids, strong bases).

Emergency Procedures

- Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.
- 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 being a component of automotive spray sealant or is likely to change significantly;
 - the amount of notified polymer being introduced has increased per annum, 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

Sika Australia Pty Limited
ABN 12001342329

55 Elizabeth St, Wetherill Park
NSW 2164

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.

2. IDENTITY OF POLYMER

Marketing Name(s)

Prepolymer SH-1-7C

Molecular Weight

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

Reactive Functional Groups

Functional Group	Category	Equivalent Weight (FGEW)
Methoxysilyl	High Concern	Not applicable (Mn > 10,000 Da)

3. PLC CRITERIA JUSTIFICATION

<i>Criterion</i>	<i>Criterion met</i>
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	White semi-viscous liquid
Melting Point/Glass Transition Temp	Not determined
Density	1,050 kg/m ³ at 20 °C
Water Solubility	Not determined. The solubility of the notified polymer cannot be measured as it is expected to hydrolyse and crosslink in water.
Particle Size	Not applicable
Reactivity	Expected to react during end use.
Degradation Products	None under normal conditions of use

5. INTRODUCTION AND USE INFORMATION

Maximum Introduction Volume of Notified Chemical (100%) Over Next 5 Years

<i>Year</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Tonnes	5-10	5-10	5-10	5-10	5-10

Use

The notified polymer will not be manufactured, reformulated, or repackaged in Australia. The notified polymer will be imported into Australia as part of the finished spray sealant that will be used in aftermarket automotive repairs for sealing joints between metal panels at concentrations of less than 30%.

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. However these groups are estimated to be present at a relatively low level in the polymer (FGEW > 3500), and combined with the high molecular weight (NAMW > 10,000 Da) this would significantly reduce the hazard potential.

Occupational Health and Safety Risk Assessment

The application of the notified polymer will be conducted using a cartridge/application gun that sprays the final product that contains the notified polymer onto metal panels. The spray application is at low pressure and is not expected to generate vapours or aerosols. Workers may be dermally exposed to the notified polymer either during the preparation of the final product into the gun or during the spraying process. Accidental ocular exposure may also occur. Inhalation of the notified polymer through vapour and/or mists is not expected due to the low pressure of application. 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 and expected hazard profile, the risk posed by the notified polymer to the public is not considered unreasonable.

7. ENVIRONMENTAL RISK ASSESSMENT

No ecotoxicological data were submitted. Polymers without significant ionic functionality are generally of low concern to the environment. The notified polymer is not manufactured or reformulated in Australia; therefore, there is no release due to these activities. The majority of the notified polymer is cured into an inert matrix adhering to metal substrates following its use as a sealant during automotive repairs. The notified polymer is expected to share the fate of the substrate to which it has been applied and either be sent for metals recycling or disposed of to landfill at the end of the articles useful life. The sealant will only be used by professionals and therefore release of the notified polymer to the aquatic environment is not expected during use. No significant overspray is expected due to use of purpose-designed low-pressure spray guns. Minor spills are expected to be collected on newspaper drop sheets and, together with residues in application equipment solvent washings and end-use containers, are expected to be disposed of to landfill. The notified polymer crosslinks in the presence of moisture to be irreversibly incorporated within an inert solid polymer matrix. In this form, it is not expected to be bioavailable, readily biodegradable or mobile. Due to its high molecular weight the notified polymer prior to crosslinking, is not expected to cross biological membranes and it is therefore not expected to bioaccumulate. The notified polymer is expected to eventually degrade in landfill, or be thermally decomposed during metals reclamation, to form water and oxides of carbon, silicon and nitrogen. 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.