

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

POLYMER OF LOW CONCERN PUBLIC REPORT

GENIOSIL® XM 25

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 (Cwlth) (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, 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:

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**

September 2018

Table of Contents

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

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/207	Wacker Chemie AG	GENIOSIL® XM 25	No	< 10 tonnes per annum	A component of elastomeric sealants, adhesives and coatings

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 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.

Storage

- Store and handle in accordance with Work Health & Safety Regulations or Occupational Health & Safety Regulations.

Emergency Procedures

- Refer to section 6 of the GENIOSIL XM 25 Safety Data Sheet.
- 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 elastomeric sealants, adhesives and coatings, 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.

Safety Data Sheet

The SDS of the notified polymer was provided by the applicant. The accuracy of the information on the SDS remains the responsibility of the applicant.

ASSESSMENT DETAILS

1. APPLICANT AND NOTIFICATION DETAILS

Applicant(s)

Wacker Chemie AG (ABN: 11 607 113 062)
1/35 Dunlop Road
MULGRAVE VIC 3170

Notification Category

Self Assessment: Polymer of Low Concern

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, Import Volume, and Site of Reformulation.

Previous Notification in Australia by Applicant(s)

None

Notification in Other Countries

China; 2016; Simplified notification for Polymers
USA, 2016, PMN
Canada, 2016, Schedule 9

2. IDENTITY OF POLYMER

Marketing Name(s)

GENIOSIL® XM 25

Molecular Weight

Number Average Molecular Weight (Mn) is > 1,000 g/mol

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	Colourless to yellowish liquid
Melting Point/Glass Transition Temp	< 0°C (estimate)
Density	1006 kg/m ³ at 20 °C
Water Solubility	6.08 g/L at 20 °C
Reactivity	Uncured Polymer reacts with water to form small amounts of Methanol
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	< 1	< 2	< 5	< 10	< 10

Mode of Introduction

The notified polymer will be introduced in 200 kg steel drums by sea freight for reformulation.

Reformulation/manufacture processes

The notified polymer will be manufactured in Germany and reformulated either in or outside Australia. During reformulation the notified polymer will be mixed with other ingredients to obtain elastomeric sealants, which are typically highly viscous pastes and which are filled into cartridges and sausages ready for use in sealing applications. These formulations will typically include up to 5% of the notified polymer.

Use

The notified polymer will be used as a reactive plasticiser additive in elastomeric sealants, adhesives, and coatings for metal, plastics, wood, masonry and glass. The notified polymer does not migrate out of cured formulations.

A small percentage may be used in DIY (Do It Yourself) formulations distributed by the notifier customers for use in construction projects as adhesives, sealants, and coatings.

6. HUMAN HEALTH IMPLICATIONS

Exposure Assessment

OCCUPATIONAL EXPOSURE

Reformulation Workers

Dermal and ocular exposure to the notified polymer may occur during manual handling, mixing operations equipment maintenance and cleaning. Reformulation process are expected to be fully enclosed and automated, and hence exposure to the notified polymer is not expected. Exposure to methanol vapours formed from the notified polymer through contact with moisture in the air may also occur. Workers are expected to wear appropriate PPE as advised in the SDS and good ventilation in place is advised for.

End Users

Dermal and ocular exposure to the notified polymer at < 5% concentration may occur when applying sealants and adhesives containing the notified polymer. In addition, users may have potential for exposure to methanol released from the notified polymer during the curing process. Workers are expected to wear appropriate PPE and use safe work practices to minimise exposure. Once the adhesive and sealant is cured, the notified polymer will be incorporated by reaction into the matrix and will not be available for exposure.

PUBLIC EXPOSURE

The notified polymer will be available to the general public in DIY adhesive and sealant in small cartridge applicators up to 300 mL.

Users may make skin contact with products containing the notified polymer. However, exposure is expected to be of low frequency and small scale. Once the adhesive and sealant is cured, the notified

polymer will be incorporated into the matrix and will not be available for exposure. The notified polymer will release a small amount of methanol as it moisture cures, so good ventilation will be needed (as advised in the SDS). Also for DIY users protective gloves, skin covering clothing, plus common workplace hygiene is advised.

7. HUMAN HEALTH RISK ASSESSMENT

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

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.

8. ENVIRONMENTAL RISK ASSESSMENT

Exposure Assessment

ENVIRONMENTAL RELEASE

The notified polymer will be imported into Australia either in finished adhesives/sealants, or in aqueous dispersions for reformulation into the finished products. The reformulation process will involve blending the dispersion containing the notified polymer with other ingredients, followed by automatic filling of the finished products into cartridges and sausages ready for use in sealing applications. Any waste generated from the reformulation process and accidental spills during reformulation, transport, storage and use are expected to be collected and disposed of in accordance with local government regulations.

The finished adhesives/sealants will be used primarily by professional workers and to a lesser extent by DIY users. Environmental exposure from the worst-case scenario for incorrect disposal has been calculated, as follows. Up to 5% of the import volume may be incorrectly disposed of to the sewers, drains, or ground from waste and washing of application equipment by DIY users. Assuming the releases occur nationwide over the entire year and there is no removal of the notified polymer during wastewater treatment, the predicted environmental concentration (PEC) is estimated to be 0.28 µg/L $[(10 \text{ tonnes per annum} \times 0.05) \div (24.386 \text{ million person} \times 200 \text{ L/day} \times 365 \text{ days per annum})]$. Thus, release of the notified polymer from this assessed use pattern is not expected to lead to ecotoxicologically significant concentrations in the aquatic environment. Empty containers containing residual notified polymer are expected to be disposed of in accordance with local government regulations.

ENVIRONMENTAL FATE

Following the application, the notified polymer is expected to share the fate of the articles to which it has been applied, either subjected to metal reclamation or being disposed of to landfill at the end of their useful lives. During metal reclamation, the notified polymer will thermally decompose to form water vapour and oxides of carbon, nitrogen and silicon. In landfill, the notified polymer will be present as cured solids and will be neither bioavailable nor mobile. Based on its low water solubility, if entering sewage, the notified polymer is expected to associate with sludge and be removed at sewage treatment plants. Waste sludge containing the notified polymer will be sent to landfill for disposal or agricultural land for remediation. The notified polymer is expected to have low mobility in landfill and soil due to its low water solubility. The notified polymer is not expected to bioaccumulate due to its high molecular weight. The notified polymer in landfill and soil is expected to eventually degrade via biotic and abiotic processes to form water and oxides of carbon, nitrogen and silicon.

Environmental Hazard Characterisation

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

Environmental Risk Assessment

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