

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in 2-5563 Intermediate AF Formulation Aid

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

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:

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**Director
NICNAS**

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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/1276	Dow Corning Australia Pty Ltd and IMCD Australia Limited	Polymer in 2-5563 Intermediate AF Formulation Aid and AC-8066 Antifoam	No	≤ 7 tonnes per annum	Component of metal working fluid and laundry detergent

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.
- Spray applications should be carried out in accordance with the Safe Work Australia Code of Practice for *Spray Painting and Powder Coating* (Safe Work Australia, 2012) or relevant State or Territory Code of Practice.
- 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 component of metal working fluid and laundry detergent, 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

Dow Corning Australia Pty Ltd (ABN: 36 008 444 166)
Level 20
201 Sussex Street
SYDNEY NSW 2000

IMCD Australia Limited (ABN: 44 000 005 578)
1st Floor
372 Wellington Road
MULGRAVE VIC 3170

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, importer, use details and import volume.

2. IDENTITY OF POLYMER

Marketing Name(s)

Polymer in 2-5563 Intermediate AF Formulation Aid
Polymer in AC-8066 Antifoam

Molecular Weight

Number Average Molecular Weight (Mn) is > 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	Liquid
Melting Point/Glass Transition Temp	Not determined. Liquid at room temperature
Density	1,000 kg/m ³ at 20 °C
Water Solubility	Not determined. The notified polymer is expected to be water dispersible based on the presence of hydrophilic functionality and its use in aqueous products.
Dissociation Constant	Not determined. The notified polymer is not expected to dissociate under environmental conditions.
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	1 - 5	1 - 5	1 - 5	1 - 5	4 - 7

Use

The notified polymer will not be manufactured in Australia and will be imported (at a concentration of < 20%) for use in metalworking and laundry detergent products. Products for metalworking use will be blended with other products at the customer site prior to use (end-use products will contain the notified polymer at a concentration of < 20%). Laundry detergent products will be reformulated in Australia using automated processes. End-use domestic products will contain the notified polymer at $\leq 0.05\%$ concentration.

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.

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

7. ENVIRONMENTAL RISK ASSESSMENT

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

The majority of the notified polymer is expected to be released to sewer during use as a component of laundry detergent. Empty product containers containing notified polymer residue are expected to be disposed of to landfill. A predicted environmental concentration in rivers (PEC_{river}) for a worst case scenario can be calculated on the assumptions that 100% of the total annual import volume is released to sewer nationwide. The PEC_{river} is $0.42 \mu\text{g/L}$ if the daily chemical release ($7,000 \text{ kg}/365 = 19.2 \text{ kg}$) is diluted by the daily effluent production ($200 \text{ L/person/day} \times 22.613 \text{ million people} = 4,523 \text{ ML}$). This PEC is below the EC50 for algae of the most toxic polymers ($EC50 > 1 \text{ mg/L}$). It can be expected that 90% of the notified polymer will be removed by sorption to sludge during sewage treatment plant (STP) processes due to the high molecular weight of the notified polymer.

The notified polymer will not bioaccumulate due to its high molecular weight and it is not expected to be present in surface waters at ecotoxicologically significant concentrations. Over time it is expected to disperse and degrade in the environment, ultimately forming water and oxides of carbon and silica.

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.