

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

POLYMER OF LOW CONCERN PUBLIC REPORT

Polymer in AERO 8860GI GCA depressant

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**

March 2013

Table of Contents

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

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/1121	Cytec Australia Holdings Pty Ltd	Polymer in AERO 8860GL GCA depressant	No	≤ 200 tonnes per annum	Processing aid in mineral flotation

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 MSDS 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

- The notified polymer should be disposed to landfill.

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 Processing aid in mineral flotation, 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 MSDS of 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

Cytec Australia Holdings Pty Ltd (ABN: 45 081 148 629)
Suite 1, level 1, 21 Solent Circuit,
BAULKHAM HILLS NSW 2153

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, use details, and import volume.

2. IDENTITY OF POLYMER

Marketing Name(s)

AERO 8860GL GCA Depressant (contains the notified polymer at $\leq 40\%$ concentration)

Molecular Weight

Number Average Molecular Weight (Mn) is $> 1,000$ Da

Impurities

The notified polymer contains hazardous residual reactants that are present below the cut-off concentration for classification.

3. PLC CRITERIA JUSTIFICATION

Criterion

Molecular Weight Requirements

Criterion met

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	Yellow liquid*
Melting Point/Glass Transition Temp	Not determined
Density	1130-1150 kg/m ³ at 20 °C*
Water Solubility	Not determined. Expected to be water soluble based on the presence of hydrophilic functional groups in the chemical structure and use in aqueous systems.
Dissociation Constant	Not determined. The notified polymer is a salt and expected to be ionised under environmental conditions.
Reactivity	Stable under normal environmental conditions
Degradation Products	None under normal conditions of use

* For imported product AERO 8860GL GCA depressant containing $\leq 40\%$ notified polymer.

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	100-200	100-200	100-200	100-200	100-200

Use

The notified polymer will not be manufactured in Australia. The notified polymer will be imported into Australia at a concentration of $\leq 40\%$. Products containing the notified polymer may be reformulated in Australia before use.

The notified polymer will be used as a processing aid in mineral (nickel) flotation..

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 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. Anionic polymers are generally of low toxicity to fish and daphnia, however they are known to be moderately toxic to algae. The mode of toxic action is over-chelation of nutrient elements needed by algae for growth. The highest toxicity is when the acid is on alternating carbons of the polymer backbone which is unlikely to apply to the notified polymer due to the addition of non-chelating functionality.

The notified polymer will be imported into Australia as an aqueous solution at a concentration of $\leq 40\%$ and used as a processing aid in mineral flotation. Accidental spills/leaks during importation and

reformulation are expected to be collected and disposed of in accordance with local waste regulations. No significant release of the notified polymer to the environment is expected during handling and storage as the areas where the notified polymer is handled or stored are designed to minimise the release. Residual notified polymer in empty import containers will be rinsed with water. The rinsing water is expected to be reused for mineral flotation. Empty containers are expected to be disposed of to landfill.

During mineral flotation processes, the notified polymer will be thoroughly mixed with ore slurry in flotation cells. Mineral flotation activities take place in a closed loop system. No release of the notified polymer to the sewer system is expected during its use. Most of the notified polymer is expected to bind to unwanted particles and sink to the bottom of the cells as flotation tailings. The flotation tailings will be treated to separate the solids and recycle the water for further use. After treatment, the solid slurry will be transferred to storage dams where the solids are allowed to settle. The settled sediment may be mixed with soil and buried on site. Water from the storage dam is expected to be evaporated. The sediment remaining after evaporation may undergo high temperature smelting to recover metals. Some of the notified polymer may be released to ground water when water used for mineral flotation leaches from the dams. However, this release is expected to be limited.

Due to its high water solubility, the notified polymer may be mobile in soils although mobility is likely to be limited based on its molecular size. Furthermore, due to its high molecular weight, it is unlikely to cross biological membranes to bioaccumulate. The notified polymer is expected to degrade through biotic and abiotic processes in soil, or by thermal decomposition during smelting, to form water, oxides of carbon and nitrogen and inorganic salts. 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.