File No PLC/1256

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

POLYMER OF LOW CONCERN PUBLIC REPORT

FL-17 / chemical in Halad 568LM / Halad 569LXM / Halad 568M Cement Additive / Halad 569XM Cement Additive

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:

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

June 2015

Table of Contents

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/1256	Cintox Australia Pty Ltd Halliburton Australia Pty Ltd	FL-17 / chemical in Halad 568LM / Halad 569LXM / Halad 568M Cement Additive/ Halad 569XM Cement Additive	No	≤ 100 tonnes per annum	Additive in cement for oil and gas well casings

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

- 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 additive in cement for oil and gas well casings, 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 notified polymer and products containing the notified polymer were 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
Cintox Australia Pty Ltd (ABN: 63 122 874 613)
Suite 1, Level 2, 38-40 George Street
PARRAMATTA NSW 2150

Halliburton Australia Pty Ltd (ABN: 73 009 000 775)
Level 17, 444 Queen Street
BRISBANE QLD 4000

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 and import volume.

2. IDENTITY OF POLYMER

Marketing Name(s)
FL-17
Halad 568LM
Halad 569LXM
Halad 568M Cement Additive
Halad 569XM Cement Additive

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

3. PLC CRITERIA JUSTIFICATION

Criterion	*Criterion met*
Molecular Weight Requirements	Yes
Functional Group Equivalent Weight (FGEW) Requirements	Not applicable
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	Brown powder
Melting Point/Glass Transition Temp	Imported in solution
Density	1,470 kg/m^3
Water Solubility	240 g/L at 25 °C (Study report not provided)
Dissociation Constant	pKa = 1.2 ± 0.4 (based on monomer)
Particle Size	< 710µm*
Reactivity	Stable under normal environmental conditions
Degradation Products	None under normal conditions of use

* The notified polymer will be imported in liquid products only.

5. INTRODUCTION AND USE INFORMATION

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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes (Cintox)	≤ 100	≤ 100	≤ 100	≤ 100	≤ 100
Tonnes (Halliburton)	≤ 100	≤ 100	≤ 100	≤ 100	≤ 100

Use
The notified polymer will be used as a fluid loss additive in cement for oil and gas well casings. There will be no manufacture or reformulation of the notified polymer; however, it will be blended with other components before being pumped downhole between the outside of the steel pipe and the rock formation. The final concentration of the notified polymer in cement slurry will be ≤ 2%.

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. Polymers with a potential cationic density may have adverse effects on aquatic life. However, given that limited release to the environment is expected from the proposed use pattern, the notified polymer is not expected to reach ecotoxicologically significant concentrations in the environment.

The notified polymer will be imported as a component of finished cement additives for use in oil and gas well casings, and will not be reformulated in Australia. Therefore, no environmental release is expected from manufacturing or reformulation in Australia. The release of the notified polymer to the environment during import, storage, and transport is also unlikely. Spills or accidental release of the products containing the notified polymer are expected to be contained by standard control measures.

The notified polymer will be used in cementing processes in well formation operations. The cement additives containing the notified polymer will be mixed into the cement slurry at the site of application, then pumped directly into drilling wells to form cement casings. Once cured, the notified polymer will be irreversibly bound to the cement matrix and share the fate of the cement. It was indicated by the notifier that container residues are expected to be rinsed from import containers, and rinsate added to cement slurries. Empty containers will be disposed of to landfill in accordance with local government regulations.

Based on its high molecular weight and chemical structure, the notified polymer is not expected to be readily biodegradable. Due to its high molecular weight and high water solubility, the notified polymer is not expected to cross biological membranes and is, therefore, not expected to bioaccumulate. The notified polymer will share the fate of the cement into which it is bound, and is not expected to be bioavailable or mobile. In landfill, the notified polymer is expected to eventually degrade by biotic and abiotic processes to form water and oxides of carbon and nitrogen.

Therefore, based on its assumed low hazard, the notified polymer is not considered to pose an unreasonable risk to the environment.