

File No PLC/794

October 2008

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

FULL PUBLIC REPORT

Eastman Tritan Copolyester EX300

This Assessment has been compiled 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) is administered by the 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 Department of the Environment, Water, Heritage and the Arts.

For the purposes of subsection 78(1) of the Act, this Full Public Report may be inspected at our NICNAS office by appointment only at 334-336 Illawarra Road, Marrickville NSW 2204.

This Full 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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FULL PUBLIC REPORT**Eastman Tritan Copolyester EX300****1. APPLICANT AND NOTIFICATION DETAILS**

APPLICANT(S)

Eastman Chemical Limited (ABN: 72 001 313 417)
C/- PricewaterhouseCoopers
Level 1 Darling Park, Tower 2
201 Sussex Street
Sydney NSW 2000

NOTIFICATION CATEGORY

Polymer of Low Concern

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, Import Volume

VARIATION OF DATA REQUIREMENTS (SECTION 24 OF THE ACT)

No variation to the schedule of data requirements is claimed.

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)

None

NOTIFICATION IN OTHER COUNTRIES

Environment Canada (2008)

United States Environmental Protection Agency: Premanufacture Notification (PMN)

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

Eastman Tritan™ Copolyester EX300
Developmental Copolyester 29345
Eastman Tritan™ Copolyester M108

MOLECULAR WEIGHT (MW)

Number Average Molecular Weight (Mn) >1000 Da

REACTIVE FUNCTIONAL GROUPS

The notified polymer contains only low concern functional groups.

3. PLC CRITERIA JUSTIFICATION*Criterion*

Molecular Weight Requirements
Functional Group Equivalent Weight (FGEW) Requirements
Low Charge Density
Approved Elements Only
Stable Under Normal Conditions of Use
Not Water Absorbing
Not a Hazard Substance or Dangerous Good

Criterion met

Yes
Yes
Yes
Yes
Yes
Yes
Yes

The notified polymer meets the PLC criteria.

4. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa:	Solid pellets
Melting Point/Glass Transition Temp	260-282°C (processing melt temperature)
Density	1800 kg/m ³
Water Solubility	The water solubility was not tested, but is expected to be very low as the notified polymer contains no hydrophilic functionality.
Dissociation Constant	The dissociation constant was not tested as the water solubility is expected to be very low. Dissociation is unlikely to occur under normal environmental conditions (pH 4–9) as the notified polymer contains no readily dissociable functionality.
Particle Size	Not determined. The notified polymer is in pellet form visible to the eye. Dust formation is not expected.
Reactivity	The notified polymer is not expected to be reactive under normal environmental conditions. Material reacts with strong oxidising agents. Hazardous polymerisation will not occur.
Degradation Products	Not expected. The notified polymer contains hydrolysable functionality, but hydrolysis is unlikely to occur under ambient abiotic conditions in the environmental pH range of 4–9.

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>
<i>Tonnes</i>	≤ 600	≤ 600	≤ 600	≤ 600	≤ 600

Use

The notified polymer will be used in the production of plastic parts and extruded sheeting for commercial applications such as plastic face masks. No reformulation occurs in Australia.

At the plastic moulding site, pellets of the notified polymer will be fed into an extruder via a hopper for processing of plastic sheeting, or fed into injection moulding machines for processing of plastic parts. It will then be melted and extruded/moulded to form the plastic parts or sheeting. The process is fully automated and carried out under exhaust ventilation.

Mode of Introduction and Disposal

The notified polymer will be imported at neat concentration by sea in polyethylene lined containers such as 20 kg, 136 kg fibre drums, 545 kg boxes or 850 kg bags. It will then be transported by road to a number of plastic moulding industry warehouses for end use directly.

6. HUMAN HEALTH IMPLICATIONS

Hazard Characterisation

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

Occupational Health and Safety Risk Assessment

Dermal exposure to the pellets of the notified polymer may occur. However, exposure to significant amounts of the notified polymer is limited because of the fully automated processes, and the engineering controls and personal protective equipment worn by workers. The notified polymer will be bound within the finished articles and thus exposure is unlikely.

Overall, the OHS risk presented by the notified polymer is expected to be low, based on the minimal exposure to workers and the low intrinsic hazard of the polymer.

Public Health Risk Assessment

The notified polymer will not be sold to the public except in the form of finished articles. There is potential for extensive public exposure to articles such as plastic facemasks comprised wholly of the notified polymer. However, the risk to public health will be negligible because the notified polymer is of low hazard, and will be bound within a matrix.

7. ENVIRONMENTAL IMPLICATIONS**Hazard Characterisation**

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

Environmental Risk Assessment

The risk of the notified polymer to the environment is expected to be very low as the notified polymer is of low hazard, based on its structure, and will be retained within landfill following disposal of moulded articles and minor production wastes. No aquatic exposure is expected from processing into moulded articles or from use and disposal of those articles.

8. CONCLUSIONS AND RECOMMENDATIONS**Human health risk assessment**

Under the conditions of the occupational settings described, the notified polymer is not considered to pose an unacceptable risk to the health of workers.

When used in the proposed manner, the notified polymer is not considered to pose an unacceptable risk to public health.

Environmental risk assessment

Based on the reported use pattern, the notified polymer is not considered to pose a risk to the environment.

Recommendations**CONTROL MEASURES****Occupational Health and Safety**

- 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 *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.

Environment**Disposal**

- The notified polymer should be disposed of to landfill.

Emergency procedures

- Spills and/or accidental release of the notified polymer should be handled by containment, collection and subsequent safe disposal.

Regulatory Obligations

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 use in the production of plastic parts and extruded sheeting for commercial applications, or is likely to change significantly;
 - the amount of notified polymer being introduced has increased from 600 tonnes per annum, or is likely to increase, significantly;
 - if 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 chemical 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 provided by the notifier was reviewed by NICNAS. The accuracy of the information on the MSDS remains the responsibility of the applicant.