File No PLC/747

February 2008

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

VALOX IQ, XENOY IQ

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:

Director
NICNAS

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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
Sabic Innovative Plastics Australia Pty Ltd (ABN 92 005 837 454)
175 Hammond Rd.
Dandenong VIC 3175

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, Manufacture/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)
No

NOTIFICATION IN OTHER COUNTRIES
U.S., EU, Japan, Canada, and Korea

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
VALOX IQ
XENOY IQ

MOLECULAR WEIGHT (MW)
Number Average Molecular Weight (Mn) >10000 Da

REACTIVE FUNCTIONAL GROUPS
The notified polymer contains only low concern functional groups.

3. PLC CRITERIA JUSTIFICATION

Criterion	Criterion met
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	Greyish white pellets
Melting Point	This product does not exhibit a sharp melting point but softens gradually over a wide range of temperatures.
Density	>1 (relative to water)
Water Solubility	Estimated to be <0.5% based on the solubility of accepted analogues 1 and 2, which is consistent with the molecular weight and largely hydrophobic structure.
Reactivity	Stable under normal environmental conditions. The notified polymer contains hydrolysable functionality, however, hydrolysis is not expected to occur within the environmental pH range of 4-9.
Degradation Products	Combustion products are carbon dioxide, carbon monoxide, hydrocarbon fragments.

5. INTRODUCTION AND USE INFORMATION

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

Year	1	2	3	4	5
Tonnes	10-100	300-1000	300-1000	1000-3000	1000-3000

Mode of Introduction
Pellets of the notified polymer will be imported into Australia in 20 to 25kg bags or 600 to 1000kg tote bags/boxes.

Use
The notified polymer will be used for production of moulded or extruded articles or used as a component of auto, heating, ventilation, air conditioning and electrical parts. The function is for heat, chemical and impact resistance. It is also used for food contact as a moisture, gas barrier, and heat resistance, such as cooking utensils (spoons and ladles etc.), interior and exterior parts of kitchen appliances (coffee makers, toasters etc.). Approximately 60% of the notified polymer will be used to make parts for industrial and/or consumer goods, 30% to make parts for automotive/transportation applications, and 10% for food contact uses.

Following importation, the pellets will be processed in industrial facilities to produce stock shapes, films and articles, and may also be used for injection or compression moulding to make finished articles.

6. HUMAN HEALTH IMPLICATIONS

Hazard Characterisation
The notified polymer meets the PLC criteria and can therefore be considered to be of low hazard.

No toxicological data on the notified polymer were submitted. Summary toxicological data on analogue 3 were provided. However, the analogue is not accepted due to significant differences in chemical structures.

The notified polymer contains a hazardous impurity. However, its concentration is significantly lower than the concentration cut-off level.

Occupational Health and Safety Risk Assessment
Workers may be exposed to the pellets when bagging or dumping them into an extruder, and when retrieving them or bagging them from the extruder. However, the pellets of the notified polymer are not likely to be broken down and generate dusts based on its structure. In addition, exposure to significant amounts of the notified polymer is limited because of the engineering controls, such as continuous supply of fresh air to the

workplace and removal of processing fumes through exhaust systems, and personal protective equipment worn by workers. After extruding, 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 limited 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 cooking utensils and kitchen appliances. Blooming/Leaching of the notified polymer from the articles is not expected.

As there will be limited exposure of the public to the products containing the notified polymer, the risk to the public from exposure to the notified polymer is considered to be negligible.

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
Release to the environment during shipping, transport and warehousing will only occur through accidental spills or leaks from bags. Spills will be taken up mechanically and re-used where possible. Other waste will be sent to a licensed waste landfill site.

It is expected that <1% of the notified polymer will be lost to spills and a further <2% will remain as residue in import containers. A further 2% waste will be generated from trimming of components. Total waste is expected to be less than 5% per annum. All waste and "empty" import containers will be disposed of as inert solid waste to a licensed waste landfill site. The vast majority of the notified polymer (>95%) will be bound within the polymer matrix of the moulded components and will share the fate of these components. The majority of the components will go to landfill.

The notified polymer is expected to be hydrolytically stable and to not be readily biodegradable. Due to its hydrophobic nature, it is expected that the notified polymer in landfill will associate with sediments and organic phases of soil and sediments, and slowly degrade to simple carbon compounds and water vapour.

No aquatic exposure is anticipated during manufacture of plastic components and end use of the notified polymer. It is envisaged that <5% waste would be generated from the moulding process. These wastes would be collected by licensed waste contractors and be disposed of in approved landfills as inert solid waste. In landfill, the solid wastes will not be mobile and will degrade slowly and not pose a significant environmental risk.

8. CONCLUSIONS AND RECOMMENDATIONS

Human health risk assessment
Under the conditions of the occupational settings described and when used in the proposed manner, the notified polymer is not expected to pose an unreasonable risk to workers and the public based on this assessment.

Environmental risk assessment
The chemical is not considered to pose a risk to the environment based on its reported use pattern.

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

- The notified polymer should be disposed of to landfill.
- Spills and/or accidental release of the notified polymer should be handled by physical 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 chemical 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 chemical, have post-assessment regulatory obligations to notify NICNAS when any of these circumstances change. These obligations apply even when the notified chemical 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;
- the notified polymer is introduced in powder form.

or

(2) Under Section 64(2) of the Act; if
- the function or use of the chemical has changed from production of moulded or extruded articles/parts for automotive, heating, ventilation, and electrical appliances and for food contact products, or is likely to change significantly;
- the amount of chemical being introduced has increased from 3000 tonnes per year, or is likely to increase significantly;
- if the chemical 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.