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

FULL PUBLIC REPORT

Polymer in Daotan VTW 6462

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 environmental risk assessment is conducted by the Department of the Environment and Water Resources.

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**Polymer in DAOTAN® VTW 6462****1. APPLICANT AND NOTIFICATION DETAILS**

APPLICANT(S)

Cytec Australia Holdings Pty Limited
Suite1, Level1, 21 Solent Circuit,
Baulkham Hills NSW, 2153

NOTIFICATION CATEGORY

Polymer of Low Concern

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, Import Volume, and customer details

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

None

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

DAOTAN® VTW 6462/36WA
DAOTAN® VTW 6463/36WA,
DAOTAN® VTW 6471/37WA,
DAOTAN® TW 6464/36WA

MOLECULAR WEIGHT (MW)

Number Average Molecular Weight (NAMW) >10000

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	Colourless to light yellow viscous opaque liquid*
Boiling Point	60 - 100 °C*
Density	~1.06 kg/m ³ at 20°C*
Water Solubility	~100 mg/L The water soluble portion was estimated by serial dilution of the commercial product (a 40% dispersion in water) in water until a transparent solution was obtained as determined by light transmission in a visible light spectrophotometer.
Dissociation Constant	The notified polymer contains functionalities which will be ionised over the environmental pH range (4–9).
Reactivity	The notified polymer contains hydrolysable functionalities, but hydrolysis is expected to be slow in the environmental pH range.
Degradation Products	None under normal conditions of use.

*For ~40% dispersion of notified polymer in water

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>	30-100	30-100	30-100	30-100	30-100

Mode of Introduction and Disposal

The notified polymer will be imported into Australia as a ~40% dispersion in water in 200 kg drums.

Excess paint not used and waste from cleaning spray equipment are transferred into hazardous waste containers located in the mixing room which is supplied with local and general ventilation.

Use

Component of automotive paints and industrial coatings.

The notified polymer will be formulated into finished automotive paints and industrial coatings at the customer's site, prior to distribution to spray-painting and smash repair companies who will apply the paint by spray painting. The finished automotive paint will contain up to ~30% notified polymer and be packaged in 1L and 4L cans.

The finished product will be loaded into spray equipment to spray vehicles or industrial equipment within an automated, enclosed spray booth, which could be a downdraft, partial downdraft or a cross-draft type of booth.

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 a polymer of low hazard.

Occupational Health and Safety Risk Assessment

Transport and storage workers could be only exposed to the notified polymer in the event of an accident as the notified polymer will be imported in sealed drums.

Dermal, ocular and inhalation exposure may occur during formulation process such as manual weighing and transferring the polymer to the mixing vessels. However worker exposure to significant amounts of the notified polymer is limited due to the workplace practices, engineering equipment and use of personal protective equipment.

Dermal, ocular and inhalation exposure may occur during spray application of the paint containing the notified polymer. The risk of exposure, however, will be reduced as the spray paint is applied in a ventilated spray booth by workers using appropriate personal protective equipment. After application and once dried, the paint containing the notified polymer is cured into an inert matrix and the polymer is hence unavailable to exposure.

Overall, the OHS risk presented by the notified polymer is not expected to be unacceptable, based on the low expected exposure to workers and the anticipated low intrinsic hazard of the polymer.

Public Health Risk Assessment

The notified polymer is intended only for use in industry and as such public exposure to the notified chemical is not expected.

The public could come into contact with the automotive car parts or equipment coated with paints containing the notified polymer. However the notified polymer, during paint spray application, is trapped within a cured film and is not bioavailable. Therefore, the risk to public health from exposure to the notified polymer is not considered to be unacceptable

7. ENVIRONMENTAL IMPLICATIONS

Hazard Characterisation

No ecotoxicological data were submitted. Some classes of anionic polymers are moderately toxic to algae. The mode of toxic action is over-chelation of nutrient elements needed for growth. The highest toxicity is when the acid is on alternating carbons of the polymer backbone. This does not apply to the notified polymer and it is not expected to be a toxic hazard to algae.

Environmental Risk Assessment

The notified polymer may be released in small amounts (< 3%) during formulation as spills, container residues and waste material. These releases will be collected for disposal to landfill or by thermal decomposition, with waste material reduced to an insoluble polymeric mass before landfill disposal. Losses from overspray during spray application are estimated at 30%. These are typically intercepted using spray booth filters and water scrubbers, and disposed of by licensed waste disposal contractors according to local, State and national regulations (typically to landfill). The notified polymer within cured coatings on articles will be disposed of to landfill where it will be immobile and very slowly degraded. The use pattern for the notified polymer and associated environmental controls are likely to preclude aquatic exposure. The lack of significant aquatic exposure pathways and the presumed low ecotoxicological hazard of the notified polymer indicate minimal risk to the environment.

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 expected to pose a risk to the environment.

Recommendations

CONTROL MEASURES

Occupational Health and Safety

- Spray application should be carried out in accordance with the Safe Work Australia *National Guidance Materials for Spray Painting* [NOHSC (1999)]

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

- Do not allow material or contaminated packaging to enter drains, sewers, or water courses.

Disposal

- The notified polymer should be disposed of by authorised landfill.

Emergency procedures

- 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 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 industrial coatings, 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;
 - the method of reformulation of the notified polymer in Australia has changed, or is likely to change, in a way that may result in an increased risk of an adverse effect of the notified polymer on occupational health and safety, public health, or the environment;

- 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 (and products containing 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.