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NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in Setalux 1753 XS-65, Setalux 1753 XS-65 YA, Setalux 1753 XX-65, Setalux 1753 SS-70

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 and Heritage.

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Director
Chemicals Notification and Assessment

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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
Amtrade International Pty Ltd of St. Kilda Road, Melbourne VIC 3004

EXEMPT INFORMATION (SECTION 75 OF THE ACT)
Data items and details claimed exempt from publication:

- Chemical Name
- Molecular and Structural Formulae
- Spectral Data
- Molecular Weight details
- Monomer and % residue composition
- Import volumes
- 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
USA-TSCA, 1995; CANADA-DSL,1994

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
Setalux 1753 XS-65, Setalux XS-65 YA, Setalux 1753 XX-65, Setalux1753 SS-70

3. COMPOSITION

PLC CRITERIA JUSTIFICATION

Functional Group	Category	Equivalent Weight (FGEW)
Hydroxyl group	Low Concern	
Carboxylic Acid group	Low Concern	

Charge Density	The notified polymer has low charge density.
Elemental Criteria	The notified polymer contains only approved elements.
Degradability	The notified polymer is not biodegradable.
Water Absorbing	The notified polymer is not a water-absorbing polymer.
Residual Monomers	All residual monomers are below the relevant cut-off.
Hazard Category	The notified polymer is not classified as a hazardous substance.

The notified polymer meets the PLC criteria.

4. INTRODUCTION AND USE INFORMATION

MAXIMUM INTRODUCTION VOLUME OF NOTIFIED CHEMICAL (100%) OVER NEXT 5 YEARS

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	30-100	30-100	30-100	30-100	30-100

USE

The notified polymer will be formulated to a solvent borne clear coat base for automotive finish. The formulation is used in Part A of a 2-component clear coating. The final concentration of notified polymer in the clear coat is approximately 40%.

5. OPERATION DESCRIPTION

Coatings Manufacture

The notified polymer will be formulated into automotive paint, one part of a 2-part paint formulation. The notified polymer is poured from 200 L drums into a 1000 L capacity stainless steel vats. Other compounds are added, which are then mixed at room temperature. Batch ingredients are then piped to 20 L steel cans.

Coatings Use

Paint applicators will use the finished paint products for repairing vehicle bodies. Part A, containing the notified polymer, Part B and thinner are mixed in a room in special containers prior to application by spray gun (either gravity feed or suction feed types). The coating is then either air-dried or oven baked (>60 °C) to form a stable inert film.

6. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa	Almost colourless viscous liquid.
Melting Point/Glass Transition Temp	< -20°C (derived from the solvents)
Density	1020 kg/m^3
Water Solubility	Not determined, but expected to have very low water solubility based on the low solubility of the components which would further decrease when polymerised.
Particle Size	Not determined as the polymer is in solution.
Hydrolysis as a function of pH	The notified polymer is not soluble and is unlikely to hydrolyse at ambient conditions.
Degradation Products	Will not degrade at room temperature. Not expected to undergo photo- or thermal degradation or depolymerisation.
Loss of monomers, other reactants, additives impurities	No loss will occur once the notified polymer is trapped within the matrix of the paint.

7. HUMAN HEALTH IMPLICATIONS

7.1 Toxicological Investigations

No toxicological data were submitted.

Human Health Hazard Assessment

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

7.2 Occupational Health and Safety

7.2.1 Occupational Exposure

Nature of work	*Number of workers exposed*	*Maximum duration of exposure* (hours/day)	(days/year)
Transport & Storage	10-12	2	10
Formulation	10-12	2	50
Spray painting	500	4	200

Notified polymer containing up to 70% w/w will be handled at the formulation site, while the customers will handle coatings containing the notified polymer at concentrations up to 40% w/w.

7.2.2 Exposure Assessment

The notified polymer will be imported as viscous solutions in different solvents in 200L capacity steel drums and the finished product will be transferred in to 20L steel cans for distribution.

During transport and storage, workers are unlikely to be exposed to the notified polymer except when packaging is accidentally breached.

Dermal, ocular and inhalation exposure to the notified polymer may occur during formulation, filling and spray painting processes. Exposure to significant amounts of the notified polymer is limited because of the engineering controls and personal protective equipment worn by workers.

After application and once dried, the notified polymer becomes trapped/inert within the dried matrix of the clear coat and is hence unavailable for exposure.

7.3 Public Exposure

The notified polymer is intended only for use in industry, and will not be available to the public. Members of the public will not come into contact with the notified polymer as the notified polymer is in a cured inert matrix.

8. ENVIRONMENTAL IMPLICATIONS

8.1 Ecotoxicological Investigations

No toxicological data were submitted.

8.2 Environmental Contamination

Exposure Assessment

TRANSPORTATION AND PACKAGING

The notified polymer will be imported as viscous solutions in different solvents (~70% w/w) in 200 L capacity steel drums. It will be transported by road from the port to a licensed chemical storage facility with engineering controls (eg. bunding) to safeguard against environmental release from spills. Following formulation, the product will be distributed in 20 L steel cans by road to customers including paint applicators throughout Australia for repairing of vehicle bodies. Environmental release is unlikely during importation, storage and transportation, and spillage during a transport accident is the most likely reason for environmental release. Individual container capacity and container specifications would limit the extent of release.

Release

RELEASE OF CHEMICAL AT SITE

Coatings Production Sites

There is a low potential for spillage of the notified polymer to occur during paint manufacture and the notifier estimates a very small amount of the notified polymer may be generated as waste as a result of minor spills, which will be cured prior to disposal. The process is typically undertaken in a closed system, and spills are controlled by bunding within the plant.

It is estimated that up to 2% of the imported product may remain in emptied 200 L drums, which are typically cleaned and recycled, sent to metal recyclers, or less often sent to landfills for disposal or incinerated. Drum washings may be flocculated and sent to landfill by licensed waste disposal contractors.

RELEASE OF CHEMICAL FROM USE

Coatings Use

There is a low potential for spillage of the notified polymer during stirring and pumping into trays prior to application. Good work practices will minimise the probability of spillage occurring. Spills will be contained within bunded areas.

Cleaning of plant and equipment may potentially generate up to 2-5% per annum of the notified polymer. Spraying is conducted under controlled environmental conditions in combination spray/oven booths complying with Australian Standards. Excess spray is either collected by water curtains or a dry filter medium. Overspray from the spray equipment, containing up to 30% per annum of the notified polymer, will be contained within spray booths in filter systems. This waste will be collected by licensed waste disposal contractors and sent to landfills for disposal. The notified polymer is not volatile and losses to the atmosphere are expected to be limited. It is estimated that 2.5% of the product would remain in cans as residue, which will be cured prior to being disposed of to commercial waste by licensed waste disposal contractors.

Disposal

The MSDS recommends that waste material be disposed of with approval of local authorities, and to avoid contaminating sewer, soils, surface waters and groundwater. The notifier indicates that the majority of wastes generated during manufacture and industrial application (eg. overspray) will be disposed of through licensed waste contractors to landfills. The notifier recommends that the lids of emptied paint cans are left off to allow residues remaining in paint cans to cure prior to disposal.

Painted metal surfaces will eventually be recycled for steel reclamation or be sent to landfill at the end of their lifecycle. During reclamation, the notified polymer would be destroyed in furnaces and converted to water vapour and oxides of carbon and nitrogen.

9. RISK ASSESSMENT

9.1. Environment

No environmental exposure is expected at end use once the paint has dried to form a hard and durable paint matrix and as such is not likely to be released to the environment. The majority of the waste generated during coatings manufacture, and use, and spills and residues will be sent to landfills for disposal. In landfill, the notified polymer in solid wastes is expected to be immobile, and eventually degrade through biotic and abiotic processes. Consequently, it should not pose a significant risk to the environment. Spills of notified polymer to land are expected to bind to soil and are not expected to be mobile or affect groundwater due to very low water solubility. Spills of notified polymer to waters are not expected to dissolve, and the product is expected to disperse. The notified polymer is expected to settle to sediment due to the lack of water solubility.

9.2 Occupational health and safety

The OHS risk presented by the notified polymer is expected to be low given the low hazard associated with the notified polymer, and the level of engineering controls during coating manufacture and application. Local ventilation is used during application and the product will be handled by professional spray painters.

9.3 Public health

The notified polymer is intended for use by professional spray painters in automotive coating only, and will not be sold to the public. Following application, the notified polymer will become trapped within a matrix and will not be bioavailable. Therefore, the health risk to public from exposure to the notified polymer is considered low.

10. CONCLUSIONS – ASSESSMENT LEVEL OF CONCERN FOR THE ENVIRONMENT AND HUMANS

10.1. Hazard classification

Based on the available data the notified polymer is not classified as hazardous under the NOHSC Approved Criteria for Classifying Hazardous Substances.

10.2. Environmental risk assessment

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

10.3. Human health risk assessment

10.3.1. Occupational health and safety

There is Low Concern to occupational health and safety under the conditions of the occupational settings described.

10.3.2. Public health

There is Negligible Concern to public health based on its reported use pattern.

11. 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.

- Service personnel should wear safety coveralls, impermeable gloves, goggles and shoes and adequate ventilation/respiratory protection should be ensured during handling of the paints containing the notified polymer.

- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous Substances*, workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

- The use of the product containing the polymer should be in accordance with the NOHSC *National Guidance Material for Spray Painting* where appropriate.

Disposal

- The notified polymer should be disposed of to landfill in accordance with the methods described in the Material Safety Data Sheet, including by licensed waste contractor and in accordance with local jurisdiction waste management guidance.

Emergency procedures

- Spills/release of the notified polymer should be handled by containing and absorbing with sand and soil. The waste can then be collected and sealed in appropriately labelled drums for disposal or re-use.

Secondary notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

(1) Under subsection 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 subsection 64(2) of the Act:
  - if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.

No additional secondary notification conditions are stipulated.