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

FULL PUBLIC REPORT

Polymer in Setalux 1192 SS-60 and Setalux 1192 SS-60 YA

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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Polymer in Setalux 1192 SS-60 and Setalux 1192 SS-60 YA
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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)

Amtrade International Pty Ltd of Level2, 570 St Kilda Rd, Vic, 3004

NOTIFICATION CATEGORY

Synthetic 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 formula

Structural formula

Molecular Weight

Polymer constituents

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

The polymer has been notified with TSCA in the USA and DSL in Canada. In Europe no notification is required as the polymer is based on EINECS monomers.

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

Setalux 1192 SS-60 and Setalux 1192 SS-60 YA

Both of the above products contain 60% notified polymer in solvent butylacetate

3. COMPOSITION

PLC CRITERIA JUSTIFICATION

<i>Criterion</i>	<i>Criterion met (yes/no/not applicable)</i>
Meets Molecular Weight Requirements	Yes
Meets Functional Group Equivalent Weight (FGEW) Requirements	Yes
Low Charge Density	Yes
Approved Elements Only	Yes
No Substantial Degradability	Yes
Not Water Absorbing	Yes
Low Concentrations of Residual Monomers	Yes
Not a Hazard Substance or Dangerous Good	Yes

The notified polymer meets the PLC criteria.

4. 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(notified polymer)</i>	30	30	30	30	30

USE

The imported products, Setalux 1192 SS60 and Setalux 1192 SS60 YA may be used for varnishes, clearcoats, primers, solid colour lacquers for spot-, panel-, and car repair and industrial top coats.

5. PROCESS AND RELEASE INFORMATION

5.1. Operation Description

The notifier is yet to obtain a customer(s), hence the reformulation site and end-use applicators have not been identified. The occupational health and safety information provided by the notifier was based on a similar product, Setalux 1753, PLC393.

Transport and Storage

Products containing the notified polymer at a concentration of 60%, will be imported into Australia in 200 kg steel drums and transported to the reformulation site where they will be stored in a bunded warehouse. Some of the workers may also be involved in the distribution of the final paint products containing the notified polymer to the end users.

Reformulation

The notified polymer is transferred to a 1000L stainless steel mixing tank using a pump and flexible hosing. Solvent may be used to flush out the drums. Other compounds are then added to the tank and mixed for 30 minutes at room temperature. The resulting mixture containing approximately 40% of the notified polymer is then piped to 20 L steel pails in an automated process. Solvent used to clean the mixing tank and pipelines will be fed back into the process where possible.

End-Use Customers –Automotive Paint Applications

The product containing the notified polymer is mixed in special containers with an isocyanate adduct and thinner prior to application. The resulting mixture, which is strained into a spray gun, contains approximately 20% notified polymer.

Spraying is typically conducted in a controlled environment in combination spray/oven booths complying with Australian standards and regulatory requirements. Excess spray is either collected by water curtains or a dry filter medium. The coating is then either air dried or oven baked at a temperature of 60°C to form a stable inert film. The spray guns would typically be cleaned with solvent in an area of good ventilation.

6. EXPOSURE INFORMATION

6.1. Summary of Environmental Exposure

Transport and Storage

The imported product and paint products will be stored in bunded areas.

Reformulation

- The notifier, Amtrade International Pty Ltd, has yet to obtain a customer(s), hence the reformulation site and end-use applications have not been identified specifically.
- During reformulation the product will be recovered as much as possible and it is estimated that typically less than 1% of the notified polymer would be lost.

End-Use Customers –Automotive Paint Applications

- The typical loss of paint product through overspray will be about 30%. Overspray would typically be collected either by a water curtain or a dry filter medium. Filters from spray booths and /or sludge from treatment of water curtain liquid and spray gun washings would be disposed of to landfill or a liquid waste treatment facility for incineration via licensed contractors.
- It is estimated that approximately 2.5% of the paint product would remain in the can as residue, which will cure before disposal of to land fill by licensed waste contractors.
- Once applied to the automotive parts as a component of a finishing coat, the notified polymer becomes trapped/inert within the dried matrix of the finishing coat and is unavailable for release. Leaching of the polymer from landfill is unlikely due to the inert nature of the cured paint.

The likelihood of the notified polymer entering the sewer system or natural waterways is considered negligible.

6.2. Summary of Occupational Exposure

Category of worker	Exposed to	Number	Exposure Time
Transport & Storage	Notified Polymer up to 60% in concentration	10-12	2-3hrs/day, up to 50 days/yr
Reformulation	Notified polymer up to 60% in concentration	10-12	2-4hrs/day, 50 days/yr
Automotive Repair Shop	Notified polymer up to approximately 40% in concentration	1000	4 hrs/day, 200 days/yr

Transport and Storage

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

Reformulation

- The MSDS recommends that chemical safety goggles, overalls and neoprene or nitrile rubber gloves are worn when handling the chemical.
 - The formulation areas will typically be fitted out with local and general ventilation.
- occur during certain formulation processes, exposure to significant amounts of the notified polymer is limited because of the engineering controls and personal protective equipment worn by workers.

End-Use Customers –Automotive Paint Applications

- Applicators will be required to wear appropriate respiratory protection in accordance with Australian/New Zealand Standard AS/NSZ 1715, chemical goggles/face shields to prevent eye contact and impermeable gloves and impervious overalls to prevent skin contact.
- The use of the paint containing the notified polymer is expected to be in accordance with the NOHSC *National Guidance Material for Spray Painting*.
- The spray booths are designed to ensure rapid removal of aerosol particles and solvent vapours reducing loss through over spray. They will conform to AS/NZS/4114.1 and AS/NZS/4114.2.
- After application and once dried, the paint containing the notified polymer is cured into an inert matrix and is hence unavailable to exposure.

Therefore, under normal conditions, end user exposure to the notified polymer is expected to be minimal due to the use of appropriate engineering controls and personal protective equipment.

6.3. Summary of Public Exposure

The notified polymer will not be sold to the public except in the form of finished articles. After application and once dried, the paint containing the notified polymer is cured into an inert matrix and is hence unavailable to exposure.

7. PHYSICAL AND CHEMICAL PROPERTIES

The physical and chemical data were supplied for either the notified polymer or the imported product Setalux 1192 SS60 (approximately 60% notified polymer/40% butyl acetate).

Property	Notified Polymer	Setalux 1192 SS60
Appearance at 20°C and 101.3 kPa		Almost colourless, viscous liquid
Melting Point/Glass Transition Temp		<20°C
Density		1.03 kg/m ³
Water Solubility	<1mg/L	
Reactivity	Stable under normal environmental conditions	
Degradation Products	Hazardous decomposition will not occur at room temperature	

Additional Information

Flammability

The Flash point of Setalux 1192 SS-60 is 24°C (due to solvent). Hence, it is classified as a Class 3, Packing Group III flammable liquid.

Autoignition temperature

The solvent, butylacetate has an autoignition temperature of 370°C

Explosive Properties

The notified polymer and imported product are not expected to have explosive properties.

8. HUMAN HEALTH IMPLICATIONS

8.1. Toxicology

No toxicological data were submitted.:

8.2. Human Health Hazard Assessment

The notified polymer meets the PLC criteria and can therefore be considered to be of low hazard. The notified polymer is made from hazardous monomers, at least two of which are skin sensitisers. All of the residual monomer concentrations are below concentration cut-offs in accordance with the NOHSC List of Designated Hazardous Substances and the Approved Criteria for Classifying Hazardous Substances, however, the sum of the residual monomers that are sensitisers is greater than 1%. There is no additive formula for sensitisers in the Approved Criteria, however, the MSDS has an R43 classification for the product

One of the skin sensitisers, methyl methacrylate has a NOHSC Exposure Standard for Atmospheric Contaminants of 50ppm (TWA) and 100ppm(STEL).

The notified polymer may be included in formulations that are classified as hazardous to health in accordance with the NOHSC Approved Criteria for Classifying Hazardous Substances.

9. ENVIRONMENTAL HAZARDS

9.1. Ecotoxicology

No toxicological data were submitted.

9.2. Environmental Hazard Assessment

No ecotoxicological data were provided by the notifier, so the hazard of the polymer to organisms in the environment is unclear.

10. RISK ASSESSMENT

10.1. Environment

Minimal environmental exposure is expected at the end use once the paint is dried to form a hard and durable paint matrix from which the polymer is not expected to be released to the environment.

It is estimated that less than 1% of the notified polymer would be lost during reformulation and cleaning of equipment. Waste due to spillage is expected to be low; it is estimated that 2.5% of the product would remain in the can as residue, which will cure before being disposed of to landfill by licensed contractors. Leaching of the polymer from landfill is unlikely due to the inert nature of the cured paint.

The major release to the environment is likely to occur during application by spraying of the final paint product. Loss due to overspray would not be expected to exceed 30%, which would typically be collected either by a water curtain or a dry filter medium. Therefore, the notified polymer will end up as waste either on filters or as sludge to be disposed of to an appropriate licensed waste disposal facility. It is expected that no waste would enter the sewer system or contaminate waterways.

Other sources of waste include the washing of spray guns, where it is estimated that less than 0.5% of the notified polymer would end up in a closed system solvent reservoir. A licensed contractor would remove the liquid waste/sludge from the reservoir and once separated from solvent the notified polymer would be disposed of to a licensed waste facility for incineration or landfilling. Therefore the likelihood of the polymer entering the sewer system is considered negligible.

10.2. Occupational health and safety

Due to the residual monomer content, the notifier has classified the notified polymer as a possible skin sensitiser. Although not classified as such, there is also the possibility that the notified polymer could cause sensitisation by inhalation. Sensitisation may result from repeat exposure to low levels during reformulation and end use operations. The 50ppm exposure level for methyl methacrylate may not provide adequate protection for some sensitised individuals

Reformulation

Exposure and hence the risk of sensitisation is expected to be reduced by the use of automated transfer systems, the use of PPE and adequate ventilation.

End-Use Customers –Automotive Paint Applications

The risk of exposure is most likely during the mixing of the paint and its transfer to the spray gun. This is reduced by the use of PPE. Spraying is expected to be carried out in carefully controlled environments and therefore this, as well as the use of PPE and the lower concentration of the notified polymer (20%) present is expected to reduce the risk of sensitisation.

Monitoring of worker health should be carried out, and sensitised individuals moved to alternative working environments

10.3. Public health

The notified polymer is intended for use by professional spray painters in auto repair workshops/automotive manufacturing plants only, and will not be sold to the public. Following application, the notified polymer is cured into an inert matrix and will not be bioavailable. Therefore, the risk to public from exposure to the notified polymer is considered low.

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

11.1. Environmental risk assessment

No aquatic exposure is anticipated during manufacture and normal use of the polymer. It is expected that practically all of this waste generated through the use of the notified polymer would be disposed of in approved landfills as an inert solid waste. In landfill, the solid wastes should be contained and not pose a significant hazard to the environment.

11.2. Human health risk assessment

11.2.1. Occupational health and safety

There is moderate concern to occupational health and safety under the conditions of the occupational settings described.

11.2.2 Public health

There is negligible concern to public health based on its reported use pattern.

12. MATERIAL SAFETY DATA SHEET

Material Safety Data Sheet

The notifier has provided MSDS as part of the notification statement. The accuracy of the information on the MSDS remains the responsibility of the applicant.

13. RECOMMENDATIONS

REGULATORY CONTROLS

Hazard Classification and Labelling

- Use the following health hazard classification and risk phrase for the notified polymer
 - R43: May cause sensitisation by skin contact.

Health Surveillance

- As the notified polymer contains residual monomers that are skin sensitisers, employers should carry out health surveillance for any worker who has been identified in the workplace risk assessment as having a significant risk to sensitisation.

CONTROL MEASURES

Occupational Health and Safety

- Employers should implement the following engineering controls to minimise occupational exposure to the notified chemical during reformulation.
 - An automatic transfer system.
- The use of the product containing the polymer should be in accordance with the NOHSC *National Guidance Material for Spray Painting*, where appropriate
- Employers should implement the following safe work practices to minimise occupational exposure during handling of the notified chemical as introduced and in spray paint products:
 - Avoid skin contact
- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to the notified polymer as introduced and in spray paint products:
 - Protective eyewear, chemical resistant industrial clothing and footwear and impermeable gloves; where engineering controls and work practices do not reduce vapour and particulate exposure to safe levels, an air fed respirator should also be used.
 - 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 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.

Disposal

- The notified polymer should be disposed of in accordance with the methods described in the MSDS, including by licensed waste contractor and in accordance with local jurisdiction waste management guidelines.

Emergency procedures

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

13.1. 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.