File No: LTD/1274

December 2006

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in Fireguard Plus

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Director
NICNAS

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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
Duromer Products Pty Ltd (ABN: 64 001 125 088)
16 Leeds Street
Rhodes NSW 2138

NOTIFICATION CATEGORY
Limited: Polymer with NAMW ≥ 1000 (more than 1 tonne per year).

EXEMPT INFORMATION (SECTION 75 OF THE ACT)
Disclosure of the following would put the notifier at a competitive disadvantage in the market place:
Chemical Name(s)
Other Name(s)
CAS Number
Molecular Formula
Structural Formula
Means of Identification
Number Average Molecular Weight
Weight-average Molecular Weight
Weight Percentage of polymer species with MW < 1000 and MW < 500
Reactive Functional Groups
Charge Density
Polymer Constituents
Residual Monomers and Impurities
Import volumes

VARIATION OF DATA REQUIREMENTS (SECTION 24 OF THE ACT)

Melting point and Boiling point	-	Not applicable (decomposes before melting)
Flash Point	-	Not applicable (the notified polymer is not in liquid form)
Vapour pressure	-	No vapour pressure detectable
Partition coefficient	-	The notified polymer is insoluble in water.
Hydrolysis as a function of pH	-	The notified polymer contains no hydrolysable groups.

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)
None

NOTIFICATION IN OTHER COUNTRIES
None

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
Polymer in Fireguard Plus

MOLECULAR WEIGHT

Number Average Molecular Weight (Mn)	>1,000 g/mol
Weight Average Molecular Weight (Mw)	>1,000 g/mol
% of Low MW Species < 1000	<20%
% of Low MW Species < 500	<5%

3. COMPOSITION

DEGREE OF PURITY
90-100% (for the pure notified polymer)

HAZARDOUS IMPURITIES/RESIDUAL MONOMERS
None

NON HAZARDOUS IMPURITIES/RESIDUAL MONOMERS (>1% by weight)
None

ADDITIVES/ADJUVANTS A major component in the formulation of the imported product:

Chemical Name	Polyphosphoric acids, ammonium salts		
CAS No.	68333-79-9	*Weight %*	>60%

DEGRADATION PRODUCTS
Ammonia and nitrous gases may be released upon thermal decomposition.

LOSS OF MONOMERS, OTHER REACTANTS, ADDITIVES, IMPURITIES
Loss of monomers is not expected, as the notified polymer will be physically contained within a plastic matrix.

4. INTRODUCTION AND USE INFORMATION

MODE OF INTRODUCTION OF NOTIFIED CHEMICAL (100%) OVER NEXT 5 YEARS
The notified polymer will be imported as a powder (<25% notified polymer) for the local manufacture of resin systems.

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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	<100	<100	<100	<100	<100

USE
The notified polymer will be used as a flame retardant in formulations of resin systems. These resins will be used by customers for the manufacture of plastic articles, such as plastic pipes. Plastic articles will contain <10% notified polymer.

5. PROCESS AND RELEASE INFORMATION

5.1. Distribution, Transport and Storage

PORT OF ENTRY
The notified polymer will be imported through Sydney by wharf.

IDENTITY OF MANUFACTURER/RECIPIENTS
The notified polymer will be imported to the notifier's site (Rhodes, NSW), and formulated into resin systems that will be sold to plastic injection moulding companies (potential customers in NSW).

TRANSPORTATION AND PACKAGING
The notified polymer as a component of powder in 25 kg polyethylene-lined paper bags will be transported from the wharf by road to the notifier's site and stored. Here, the notified polymer will be formulated into plastic pellets, and packed in 25 kg capacity woven laminated plastic bags. The pellets will be transported by road to customer plastic manufacturing sites.

STORAGE FACILITIES & STORAGE REQUIREMENTS
The notified polymer will be stored at the notifier's site in closed containers or in bags.

5.2. Operation Description

The imported powder containing the notified polymer, in polyethylene-lined paper bags, will be stored in a dry and well-ventilated area at the notifier's site until used.

Formulation of master batch pellets

The notified polymer will be formulated with other raw materials to form compounded plastic pellets: the master batch. This is a continuous process, formulating 200-300 kg of plastic pellets per hour.

1. The powder containing the notified polymer is manually weighed and added to a hopper, which feeds into a mixer. The mixer is sealed during mixing.
2. After mixing, the mixer opens directly into the extruder below through a sealed tube. In the extruder, the raw materials are melted and mixed at 200ºC.
3. The melted mixture will be extruded through die holes in long spaghetti-like strings. These are passed through a cooling water bath into a pelletiser and classifier, which will cut the strings into master batch pellets (approximately 5 mm width). The pellets will be transferred to a storage hopper until they are tested and bagged.
4. A quality control technician will scoop a portion of the master batch pellets into a sample container for testing. The quality of the pellets will be tested against a battery of quality control tests using standard laboratory procedures.
5. A packaging operator will bag the master batch pellets, ready for distribution to customers by road. The finished pellets (containing <10% notified polymer) will be sold to the plastics manufacturing industry.

Manufacture of plastic products

At the customers' sites, the master batch pellets are transferred into the feeding hopper on the injection-moulding machine (either by vacuum or manually tipped). The mixed pellets are then fed into the barrel of the machine by gravity, where they are heated until melted. The melted pellets are moulded to form the shape of the intended plastic article, and cooled within the closed mould. The plastic product either is removed from its mould manually, or is automatically ejected into a suitable receptacle.

5.3. Occupational Exposure

Number and Category of Workers

Category of Worker	*Number*	*Exposure Duration*	*Exposure Frequency*
Transport and storage	2-5	1-10 hours/day	20 days/year
Formulation of master batch pellets			
Production Process Operators	4-8	8 hours/day	75 days/year
Laboratory technicians	2	8 hours/day	75 days/year
Cleaning of equipment	5	8 hour/day	10 days/year
Manufacturing of plastic articles			
Production Process Operators	12	8 hours/day	50 days/year
End users	>1000	6-8 hours/day	300 days/year

Exposure Details

Transport and storage

Transport and warehouse workers will be exposed to the notified polymer only in the event of a spill or if packaging is accidentally breached.

Formulation of master batch pellets

All of the workers involved in the production of master batch pellets are expected to wear personal protective equipment (PPE) including safety glasses, gloves, dust mask and overalls.

- Dermal and inhalation exposure may occur when opening bags, and during weighing and addition of the powder to the hopper.
- The blending and extrusion processes are fully enclosed and automated; therefore, exposure to the notified polymer during these stages would be limited. The extruder loading area is also fitted with local exhaust ventilation.
- The laboratory technician is expected to wear protective clothing such as laboratory coat, safety glasses and gloves.

- Cleaning workers may also experience dermal exposure to the notified polymer. These workers are likely to wear PPE including safety glasses, gloves and overalls to minimize any exposure.

Manufacture of plastic products
As the notified polymer is contained within the master batch plastic pellets, any exposure to the notified polymer during the production process is unlikely to be significant. Likewise, exposure to the notified polymer in plastic products is unlikely to occur after manufacturing, since the notified polymer is encapsulated within the finished plastic articles.
Plastic manufacturing processes are automated, within purpose-built facilities fitted with vacuum extraction equipment, to minimise release of fugitive particulate material. Dust containing the notified polymer is not anticipated but if present above 10 mg/m^3, particulate respirators with full head covering and eye protection is expected to be used. Other PPE proposed includes eye protection, chemical impermeable gloves and work clothing.

5.4. Release

RELEASE OF CHEMICAL AT SITE
The notified polymer will not be manufactured or repackaged in Australia. Only reformulation into master batch pellets is proposed to be performed at the notifier's site. It is expected that approximately 1% of the imported notified polymer will be lost as various wastes during production, up to 1,000 kg per annum at maximum import volume.

- Release to the environment may occur at the notifier's site in the unlikely event of an accident during transport, or if the packaging is damaged. It is anticipated that because of spills, a loss of 0.5% of the notified polymer may occur (≤500 kg per annum total).
- It is estimated that the loss of the notified polymer as residues in empty import bags will be up to 0.2% of the import volume (≤200 kg per annum total).
- Some of the notified polymer will be released during cleaning, and this waste will be collected and sent to landfill.
- Additionally, some notified polymer would be released during maintenance of pipes and ducts of extrusion equipment. This waste is expected to be in an inert solid state, with the notified polymer bound within the polymer matrix. It is expected that this material will be disposed of into landfill.
- There will be no release of the notified polymer to the sewer.

RELEASE OF CHEMICAL FROM USE
Release during the manufacturing of plastic articles
It is estimated that approximately 1% of the notified polymer will be lost as waste during production of moulded plastic products, which equates to up to 1,000 kg per annum at maximum import volume.

- Residues remaining in master batch bags are expected to be minimal (~0.1% or ~100 kg per annum).
- Spilled pellets will typically be collected with a broom and bagged; these may be melted and reprocessed, or disposed of to landfill as normal industrial waste via a waste contractor.
- There is potential for some release of the notified polymer, bound within plastic material, during routine maintenance of pipes and ducts in extrusion equipment.

Release from plastic articles
Pellets containing the notified polymer are to be used in the manufacture of plastic articles with wide distribution throughout the community. Long-term release of the polymer as result of discarding old consumer products would be very diffuse.

- Blooming of the notified polymer from plastic articles is unlikely due to the notified polymer's high molecular weight but is possible from lower MW species. Any traces of notified polymer that are released in this way would likely be removed through cleaning processes and therefore would be possibly released to landfill or in wastewater to sewer.
- While recycling of the plastic in discarded articles is theoretically possible, this is not anticipated to take place on a large scale. Consequently, the majority of old plastic articles will be discarded at the end of their useful lives, and any notified polymer in these articles is therefore likely to be disposed of to landfill.

5.5. Disposal

The majority of all wastes of the notified polymer will be disposed of to landfill. This includes residues from empty import bags and master batch bags, cleaning wastes from machinery, spillage and final

disposal of plastic articles. A small proportion of plastic articles containing the notified polymer will be recycled, using a process very similar to the original production process.

5.6. Public Exposure

The powders containing the notified polymer will not be available for sale to the public. The public will be potentially exposed to the notified polymer in finished plastic articles, but it will be physically contained within the plastic matrix of these articles and thus not readily bioavailable.

6. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20ºC and 101.3 kPa Fine white powder

Melting Point/Freezing Point Not determined

Remarks The notified polymer decomposes before melting at >280ºC. Test report not available.

Boiling Point Not determined

Remarks The notified polymer decomposes before melting at >280ºC. Test report not available.

Density 1260–1280 kg/m^3 (pure chemical)
470 kg/m^3 (bulk density of imported powder)

Remarks Test report not available.

Vapour Pressure Not determined

Remarks The notified polymer is expected to have a very low vapour pressure due to its high molecular weight but low MW fractions will be more volatile.

Water Solubility 1.0 g/L (0.1% w/v)

METHOD In a 150 mL precipitate glass, approximately 5.0 g of sample was weighed. 50 mL of distilled water was added, and the glass was agitated in a thermostatic bath at 25 ºC for 1 hour. The glass was centrifuged, and 10 mL of the supernatant was removed to a tared watch glass. This was dried at 100-110ºC for 2 hours. The watch glass was then weighed to give the weight of dissolved sample and the solubility (g/100 mL) was calculated.

Remarks It is noted that the product contains small quantities of sodium chloride and other soluble residues (0.07 and 0.1% w/v based on the notified polymer from two sources) in spite of the intense washing process during production. Low MW oligomers or any ionised species will also be more soluble.

Hydrolysis as a Function of pH Not determined

Remarks The notified polymer is unlikely to hydrolyse, as it contains no readily hydrolysable structural features.

Partition Coefficient (n-octanol/water) Not determined

Remarks This is unclear, and will depend on the species. Those with higher MW may favour the octanol phase, but lower MW may be more soluble in water. Based on the pKa of the most appropriate analogue, the notified polymer may be partially ionised (cationic) at the lower end (~pH 4) of the environmental pH range of 4-9. Thus, it is likely to partition to the aqueous phase at lower pH.

Adsorption/Desorption Not determined

Remarks Again this will depend on the water solubility of the species present. The notified polymer may be partially cationic at ~pH 4 and thus it has the potential to adsorb to soils and become immobile.

Dissociation Constant Not determined

Remarks Based on the pKa of analogues, the notified polymer may be partially ionised (cationic) at the lower end (~pH 4) of the environmental pH range of 4-9.

Particle Size Mean diameter = 9.73 µm

METHOD Particle Size Distribution

Remarks

Diameter at 10%	1.16 µm
Diameter at 50%	9.77 µm
Diameter at 98%	24.13 µm

All of the particles in the powdered notified chemical are of inhalable sizes (<100 µm), and about half are of respirable size (<10 µm). Test report not available.

Flash Point Test not conducted on a solid.

Flammability Limits Ignition temperature 485ºC (for swirled dust).

Remarks Test report not available.

Autoignition Temperature >360ºC

Remarks Not self-igniting. The above value is the flammability of deposited dust, where no burning is observed at 360ºC. Test report not available.

Explosive Properties The notified polymer is not explosive by shock, friction or thermal sensitivity. Dust explosions may be possible (lower explosion limit: 50 g/m^3).

Remarks Test report(s) not available.

Reactivity Stable to water (insoluble), and air temperatures below 280ºC.

Remarks Test report(s) not available.

7. TOXICOLOGICAL INVESTIGATIONS

No toxicity data were submitted

8. ENVIRONMENT

8.1. Environmental fate

No environmental fate data were submitted.

8.2. Ecotoxicological investigations

No ecotoxicity data were submitted.

9. RISK ASSESSMENT

9.1. Environment

9.1.1. Environment – exposure assessment

It is expected that up to 2,000 kg of the notified polymer per annum will be lost as wastes in the production of pellets and in the manufacture of plastic products. The majority of the wastes will be disposed of to landfill. It is unlikely that the notified polymer will leach into the water compartment due to its expected low water solubility. Some of this waste would be cured product in which case the notified polymer will be incorporated into an inert matrix and will be unavailable to the environment. The proposed use and disposal pattern for the notified polymer suggests that direct release to the aquatic compartment is likely to be very low and therefore no predicted environmental concentration (PEC) has been estimated for the notified polymer.

At the end of their useful lives, articles containing the notified polymer would be disposed of to landfill or recycled.

Based on its high molecular weight (NAMW >1,000 Da) and the very low aquatic exposure, the notified polymer is unlikely to cross biological membranes and have the potential for bioaccumulation.

9.1.2. Environment – effects assessment

Although the notified polymer may be partially cationic at the lower end of the environmental pH range of 4-9 and thus toxic to aquatic organisms, its very limited exposure to the aquatic compartment is unlikely to cause significant environmental toxicity to aquatic organisms.

9.1.3. Environment – risk characterisation

The notified polymer does not pose a significant risk to the environment based on its reported use pattern because the majority of the polymer will be contained in a cured polymeric matrix which will eventually be disposed of to landfill in the final products at the end of their useful lives. Slow abiotic or biotic processes are expected to be largely responsible for the eventual degradation of the notified polymer in landfill.

There is unlikely to be any release of the polymer into the aquatic environment under the proposed use pattern and thus the aquatic risk is expected to be very low.

Given the above, the overall environmental risk is expected to be low.

9.2. Human health

9.2.1. Occupational health and safety – exposure assessment

Transport and storage

Transport and storage workers will be exposed to the notified polymer only in the event of a spill or if packaging is accidentally breached. Such exposure would most likely be dermal.

Formulation of master batch pellets

Workers involved with the formulation of master batch pellets could potentially be exposed to the notified polymer both as a component of imported powder (at <25%), and as a component of

plastic master batch pellets (at <10%). All of the workers involved in the production of master batch pellets are expected to wear PPE including safety glasses, gloves, dust mask and overalls.

- *Production process operators* will potentially experience the highest levels of exposure to the notified polymer. Significant dermal, ocular and inhalation exposure may occur when opening bags, and during weighing and transfer of the powder containing the notified polymer to the hopper of the mixer. The EASE model predicts a maximum likely atmospheric particulate concentration of 5 mg/m^3 during weighing and addition of powder to the mixer, but a maximum of 1 mg/m^3 is more likely given that low dust techniques will typically be used and direct handling should be limited (typically no more than 15 minutes for each batch). Weighing and addition should also be performed under LEV.
- *Laboratory technicians* collect samples of master batch pellets into a sample container for testing. Any potential exposure would be low, and be to the notified polymer that is bound within the plastic matrix of the master batch pellets. In addition, the laboratory technician would wear protective clothing such as laboratory coat, safety glasses and gloves.
- *Cleaning workers* may also experience dermal exposure to the notified polymer during the cleaning of equipment. This exposure will be either to residual powder containing the notified polymer or to the notified polymer bound within residual plastic or pellets, and thus is likely to be a low level exposure. These workers will probably wear PPE including safety glasses, gloves and overalls to minimise any exposure.

Manufacturing of plastic articles

Production process operators will use the master batch pellets to manufacture plastic articles. These workers may be exposed very low levels of the notified polymer in master batch pellets as they are transferred into the feeding hopper on the injection-moulding machine. Exposure may also occur to the notified polymer in finished plastic products as they are removed from moulds. Proposed PPE includes eye protection, chemical impermeable gloves and work clothing. Overall, the exposure of manufacturing workers to the notified polymer is likely to be very low.

9.2.2. Public health – exposure assessment

The public will only be exposed to low concentrations (<10%) of notified polymer bound within plastic articles (therefore not bioavailable). Any exposure is therefore considered unlikely.

9.2.3. Human health - effects assessment

General

No toxicity data were submitted for the notified polymer. However, some assessment can be carried out based on the known properties of the notified polymer. The notified polymer is unlikely to be significantly absorbed by the dermal route, due to its high molecular weight and expected water insolubility.

- The presence of lower molecular weight species in the mass distribution are likely to have different characteristics and could potentially be absorbed to cause limited toxicity. However, there is only a low level of species with MW <500 Da (<5%).
- The water solubility of the ionised species of the notified polymer is unknown. A proportion of the notified polymer may be ionised at the lower end of the probable physiological pH range (5-9). Ionisation of the notified polymer is likely to increase its water solubility. No data has been provided in regards to the aqueous solubility of the notified polymer under low pH conditions.

Therefore, the notified polymer is unlikely to distribute systemically at significant levels, so any adverse effects are likely to be localised to the site of exposure. Such effects could potentially manifest as local irritation arising from small amounts of ionised notified polymer molecules.

Inhalation

The notified polymer is imported as a component of a powder whose particle sizes are all of inhalable diameters (<100 μm). In addition, a large proportion of particles (~50%) are of respirable sizes (<10 μm). Thus, the potential for bronchial and alveolar deposition of the powder containing the notified chemical exists, following exposure of workers to airborne dusts. Due to the notified polymer's molecular weight and its expected lack of water solubility, systemically toxic levels are unlikely to be reached from absorption from the lungs. No metabolism should occur. Thus, any inhaled particles that deposit in the lung will not be cleared

by dissolution and absorption. Instead, particles containing the notified polymer that are deposited in the larger airways of the lungs will likely be cleared by mucociliary action.

If high-level deposition of particles occurred in the deep lung (eg alveolae), lung toxicity is possible, as the lungs may be unable to dislodge the particles. Poorly water-soluble substances and particle sizes below 1 μm indicate a potential for accumulation in the lung (EC 2003). Respirable dusts of higher molecular weight (>70,000 Da), water-insoluble polymers are a concern as a cause of irreversible lung damage when inhaled (US EPA New Chemicals Program). This occurs because of "lung overloading" and impaired clearance by the lungs. There is insufficient data presenting evidence of any similar effect for respirable dusts of lower molecular weight insoluble polymers such as the notified polymer. Inhaled particulates are known to interfere with cell function in the airways, causing inflammatory-like reactions (Rylander, 1997). Therefore, bronchial or pulmonary irritation is possible following inhalation exposure to particles containing the notified polymer. The potential of the notified polymer to induce respiratory sensitisation is unknown.

Dermal
The notified polymer may be partially ionised on human skin (pH 5.4-5.9). However, given the molecular weight of the notified polymer and its formulation in particles, the notified polymer is unlikely to be percutaneously absorbed following dermal exposure. Local effects such as acute skin irritation, or sensitisation through repeated dermal exposure, are possible but not expected.

Ocular
The notified polymer is unlikely to cause chemical irritation or corrosion to an exposed eye. However, ocular exposure to particles of the powder containing the notified polymer could cause transient irritation through mechanical abrasion.

9.2.4. Occupational health and safety – risk characterisation

Of main concern to the health of workers is the risk from inhalation exposure to the notified polymer, especially given the lack of inhalation toxicology data and the known adverse health effects of inhaled insoluble particulates. When the amount of handling and the import volume is taken into account, a medium risk to worker safety is presented from the notified polymer.

The primary site for generation of airborne dusts is during the handling of the imported powders containing the notified polymer, especially during opening of bags, weighing of powder and transfer of the powder to the hopper. The EASE model predicts maximal atmospheric particulate concentrations of 2-5 mg/m^3 during weighing and addition of powder to the mixer, but levels are likely to be considerably lower (<1 mg/m^3) where dust control measures are used. The Australian recommended exposure standard for nuisance dust is 10 mg/m^3 (NOHSC, 1995) but a recommended exposure limit of 3 mg/m^3 has been suggested (ACGIH, 2006) for "respirable particulates (not otherwise regulated)".

Appropriate control measures to mitigate inhalation exposure to respirable particles containing the notified polymer should be implemented. Such controls include an approved dust respirator and/or appropriate engineering controls (eg local exhaust ventilation) where airborne dusts of the notified polymer are concentrated. Dust masks have been proposed, which may be sufficient protection against dusts containing the notified polymer when weighing out and adding powder to a mixer, and would be especially important to mitigate the effects of large accidental spills involving dust generation (such as accidental spillage of the contents of a 25 kg bag containing the notified polymer).

The workers who will be potentially exposed to powders containing the notified polymer are mainly master batch pellet production process operators, and these workers face the greatest potential risk of adverse health effects arising from exposure to the notified polymer. Given appropriate PPE and the fact that the imported product contains <25% notified polymer, any risk from dermal and ocular exposure should be negligible.

Other categories of workers will only be exposed to the notified polymer bound within a plastic matrix (eg the master batch pellets or plastic articles), and therefore experience a negligible risk.

The notifier has indicated that the potential of the notified polymer to bloom from the plastic matrix is low. Likewise, a negligible risk also applies to end-users of plastic articles containing the notified polymer.

9.2.5. Public health – risk characterisation

Due to anticipated low levels of exposure, the notified polymer is unlikely to pose any significant risk to public health.

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

10.1. Hazard classification

Based on the available data the notified polymer cannot be classified 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

The notified polymer is not considered to pose a risk 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 when the notified polymer is used as a component of plastic articles.

11. MATERIAL SAFETY DATA SHEET

11.1. Material Safety Data Sheet

The MSDS of the product containing the notified polymer provided by the notifier was in accordance with the NOHSC *National Code of Practice for the Preparation of Material Safety Data Sheets* (NOHSC, 2003). It is published here as a matter of public record. The accuracy of the information on the MSDS remains the responsibility of the applicant.

11.2. Label

The label for the product containing the notified polymer provided by the notifier was in accordance with the NOHSC *National Code of Practice for the Labelling of Workplace Substances* (NOHSC, 1994). The accuracy of the information on the label remains the responsibility of the applicant.

12. RECOMMENDATIONS

CONTROL MEASURES

Occupational Health and Safety

- Employers should implement the following engineering controls to minimise occupational exposure to powders containing the notified polymer during handling:
  - *Adequate general ventilation and local exhaust ventilation at sites where powders are handled.*

- Employers should implement the following safe work practices to minimise occupational exposure during the handling of powders containing the notified polymer:
  - *Avoid the formation of airborne dusts*

- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to powders containing the notified polymer:
  - *safety glasses, gloves and overalls*
  - *dust mask (adequate for respirable dusts)*

- Employers should ensure that the following personal protective equipment is used by workers to minimise occupational exposure to plastic pellets or articles containing the notified polymer:
  - *gloves and overalls*

- 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

- Wastes of the notified polymer should be disposed of to landfill.

Emergency procedures

- Spills/release of powders containing the notified polymer should be collected by vacuum and bagged or placed in a sealed container.

- Spills/release of plastic pellets containing the notified polymer should be collected with a broom and bagged.

12.1. 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 Section 64(1) of the Act; if
  - The polymer has a number-average molecular weight of less than 1000.
  - Toxicological data for the notified polymer becomes available to the notifier.

or

(2) Under Section 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.

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