1	2	3	4	5	6	7
PET	HDPE	PVC	LDPE	PP	PS	OTHER
POLYETHYLENE TEREPHTHALATE	HIGH-DENSITY POLYETHYLENE	POLYVINYL CHLORIDE	LOW-DENSITY POLYETHYLENE	POLYPROPYLENE	POLYSTYRENE	OTHER
WATER BOTTLES; JARS; CAPS	SHAMPOO BOTTLES; GROCEY BAGS	CLEANING PRODUCTS; SHEETINGS	BREAD BAGS; PLASTIC FILMS	YOGURT CUPS; STRAWS; HANGERS	TAKE-AWAY AND HARD PACKAGING; TOYS	BABY BOTTLES; NYLON; CDS
						

Extrusion

NETCO EXTRUDED PLASTICS

Safety Data Sheet

Acrylonitrile-Butadiene-Styrene Copolymer **(ABS)**

According to EU 2015/830 (REACH) and 1272/2008 (CLP)

Product name: **ABS** Version 1 Revision Date: June 1,2015

Section 1. Identification of the substance/ mixture and of the company/ undertaking

1.1 Product identifier

Product name: **R03003**

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: Mixture used for the production of molded plastic articles

1.3 Details of the supplier of the Safety Data Sheet

Supplier: Netco Extruded Plastics
Address: 30 Tower Street
Hudson, MA 01749
USA
Telephone: 877-638-2621

1.4 Emergency telephone number

Emergency telephone : 877-638-2621

Section 2. Hazards identification

2.1 Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC: Not classified as hazardous (polymeric state)

Classification according to Regulation (EC) N° 1272/2008 (CLP): Not classified as hazardous (polymeric state)

2.2 Label elements

Not labelled as hazardous

2.3 Other hazards

vPvB/PBT assessment: not available

Section 3. Composition/information on ingredients

3.1 Composition of the substance/ preparation

Substance or Preparation Substance
Content

CAS	Name	Content
9003-56-9	Acrylonitrile-Butadiene-Styrene Copolymer	>98%
-		≤ 2%

Impurities Contributing to Hazard None

3.2 Additional information:

Reach Info:

	Pre-registration No.	Registration No.
Acrylonitrile	05-2117149456-38-0000	01-2119474195-34-0045
Styrene	05-2117149462-45-0000	01-2119457861-32-0006 01-2119457861-32-0007 01-2119457861-32-0057 01-2119457861-32-0065 01-2119457961-32-0081
Buta-1,3-diene	05-2117149467-35-0000	01-2119471988-16-0044

3.3 For full text of R- and H-phrases: see section 16

Section 4. First-aid measures

4.1 Description of first aid measures

General notes: Remove affected persons from the danger area, at the same time ensuring your own safety. Remove all contaminated clothing immediately

Following inhalation: In case of gases evolving from melted resin, move subject to fresh air. Treat symptomatically

Following skin contact: In case of pellets or powder, wash with water. In case of smelt, wash affected skin area and clothing with plenty of (soap and) water. Seek medical advice

Following eye contact: In case of pellets or powder, flush with plenty of water for at least 15 minutes. Seek medical advice if any dust particles still remain.
In case of gases evolving from melted resin of high temperature, flush with plenty of water for at least 15 minutes. Seek medical advice if necessary

Following ingestion: Induce vomiting. Rinse mouth with water. Seek medical advice if necessary

Self-protection of the first aider: -

4.2 Most important symptoms & effects both acute & delayed

Dust: Skin irritation, eye irritations and redness

4.3 Indication of any immediate medical attention and special treatment needed: -

Treat symptomatically.
(Decontamination, vital functions)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing agents: Water, foam, dry chemical powder

For safety reasons unsuitable extinguishing agents: -

5.2 Special hazards arising from the substance or mixture: -

5.3 Advice for firefighters

Protective equipment: Self-contained breathing apparatus

Further measures: -

5.4 Additional information: -

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment & emergency procedures

Pellets or powder remained on ground may cause slipping
Wear protective equipment
Ensure adequate ventilation
Keep away from ignition sources
Keep unprotected persons away

6.2 Environmental precautions

Gather pellets and powder thoroughly to avoid birds or fishes taking from draining water.
Do not allow product to reach sewage system or water bodies. Inform respective authorities in case product reaches water, sewage system or soil

6.3 Methods and material for containment and cleaning up

Recovery if not contaminated or disposal

6.4 Reference to other sections

See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment.

Section 7. Handling and storage

7.1 Precautions for safe handling S. 7.1 4, the quality

Protective measures: -

Measures to prevent fire: Prevent from fire around handling area

Measures to prevent aerosol and dust generation: maintain good housekeeping standards to prevent accumulation of dust. To avoid dust explosion resulting from the existence of powder, electrostatics eliminators and grounding should be fixed to such equipment as air transferring pipes, bag filters and hoppers. Use electrically conductive filters for bag filters.

Measures to protect the environment: -

Advice on general occupational hygiene: -

For safety reasons unsuitable extinguishing agents: -

5.2 Special hazards arising from the substance or mixture: -

5.3 Advice for firefighters

Protective equipment: Self-contained breathing apparatus

Further measures: -

5.4 Additional information: -

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment & emergency procedures

Pellets or powder remained on ground may cause slipping
Wear protective equipment
Ensure adequate ventilation
Keep away from ignition sources
Keep unprotected persons away

6.2 Environmental precautions

Gather pellets and powder thoroughly to avoid birds or fishes taking from draining water.
Do not allow product to reach sewage system or water bodies. Inform respective authorities in case product reaches water, sewage system or soil

6.3 Methods and material for containment and cleaning up

Recovery if not contaminated or disposal

6.4 Reference to other sections

See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment.

Section 7. Handling and storage

7.1 Precautions for safe handling S. 7.1.4, the quality

Protective measures: -

Measures to prevent fire: Prevent from fire around handling area

Measures to prevent aerosol and dust generation: maintain good housekeeping standards to prevent accumulation of dust. To avoid dust explosion resulting from the existence of powder, electrostatics eliminators and grounding should be fixed to such equipment as air transferring pipes, bag filters and hoppers. Use electrically conductive filters for bag filters.

Measures to protect the environment: -

Advice on general occupational hygiene: -

pH	Not applicable
Melting point / freezing point	not determined
Initial boiling point and boiling range	Not applicable
Flash point	404 °C
Evaporation rate	Not applicable
Flammability (solid, gas)	Not available
Upper/lower flammability or explosive limits	45 g/m³ (open cup, powder)
Vapour pressure	Not applicable
Vapour density	Not applicable
Relative density (H2O=1)	1.03 - 1.10 g/cm³
Bulk density	Not available
Solubility(ies)	Not soluble
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	466 °C
Decomposition temperature	> 300 °C
Viscosity	Not applicable
Explosive properties	Not explosive but dust ⚠
Oxidizing properties	Not oxidizing

9.2 Other safety information: -

Section 10. Stability and reactivity

10.1 Reactivity: Non-reactive under normal handling and storage conditions

10.2 Chemical stability: Stable under normal handling and storage conditions

10.3 Possible hazardous reaction: -

10.4 Conditions to avoid: Avoid excessive heat, flames and all sources of ignition

10.5 Incompatible materials: not applicable

10.6 Hazardous decomposition products: not applicable

Section 11. Toxicological information

11.1 Information on toxicological effects

Toxicological effects:
- Acute toxicity (oral): Lack of data.
- Acute toxicity (dermal): Lack of data.
- Acute toxicity (inhalative): Lack of data.
- Skin corrosion/irritation: Lack of data. May cause irritations.

- Eye damage/irritation: Lack of data. May cause irritations.
- Sensitisation to the respiratory tract: Lack of data. Not to be expected
- Skin sensitisation: Lack of data. Not to be expected
- Germ cell mutagenicity/Genotoxicity: Lack of data. Not to be expected
- Carcinogenicity: Lack of data. Not to be expected
- Reproductive toxicity: Lack of data. Not to be expected
- Effects on or via lactation: Lack of data.
- Specific target organ toxicity (single exposure): Lack of data.
- Dusts: Irritating to eyes, respiratory system and skin.
- Specific target organ toxicity (repeated exposure): Lack of data.

Other information

Styrene:
- Harmful if inhaled. Causes damage to organs through prolonged or repeated exposure.
- lung damages
- May be fatal if swallowed and enters airways.
- Causes serious eye irritation. Causes skin irritation.

Acrylonitrile:
- Toxic by inhalation, in contact with skin and if swallowed.
- May cause cancer. Suspected of damaging the unborn child.
- Causes skin irritation. May cause an allergic skin reaction. Causes serious eye
- damage.

1,3-Butadiene:
- May cause cancer. May cause genetic defects.

Symptoms
- Dust:Can cause skin, eye and respiratory tract irritation.
- The melted product can cause severe burns.
- Thermal treatment, Processing:
- Irritating to eyes, respiratory system and skin.
- In case of ingestion: Swallowing may cause gastrointestinal irritation and pain of guts.

Section 12. Ecological information

12.1 Toxicity

Method	Results	Reference
Short-term aquatic toxicity		
Based on available data on the constituents the classification criteria are not met LC(50)mixture = 5.78 mg/l (additivity and summation method, toxicity information available for 92,5 % of the mixture)		
Long-term aquatic toxicity		
Based on available data on the constituents the classification criteria are met and the mixture is therefore classified as Aquatic Chronic 1 NOECmixture = 0.0079 mg/l (additivity and summation method, toxicity information available for 78 % of the mixture)		

12.2 Persistence and degradability

Further details:
- Biodegradation: Product is not readily biodegradable.
- The product is likely to persist in the environment.

Effects in sewage plants:
- In sewage treatment plants it may be separated mechanically.

12.3 Bioaccumulative potential

To avoid bioaccumulation plastics should not be disposed in the sea or in other water environments.

12.4 Mobility in soil

no data available

12.5 Results PBT & vPvB assessment

According to the revised Annex XIII of regulation (EC) 1907/2006 and (EC) 253/2011: No information available on the product as such

12.5 Other adverse effects:

General information: Do not allow to enter into ground-water, surface water or drains.

12.7 Additional information: -

Section 13. Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal: Dispose in accordance with the current local regulations.
Waste codes according to European Waste Catalogue: -
Waste treatment-relevant information: Inadequate incineration may generate toxic gases such as CO, HCN, AN and SM
Sewage disposal-relevant information: -
Other disposal recommendations: -

Section 14. Transport information

ADR/RID

14.1 UN number
Not applicable

14.2 UN proper shipping name
Proper Shipping Name: NOT REGULATED

14.3 Transport hazard class(es)
Not applicable

14.4 Packing Group
Not applicable

14.5 Environmental hazards
Not considered environmentally hazardous based on available data

14.6 Special precautions for user
Special Provisions: no data available
Hazard identification No:no data available

ADNR / ADN
14.1 UN number
Not applicable
14.2 UN proper shipping name
Proper Shipping Name: NOT REGULATED
14.3 Transport hazard class(es)
Not applicable
14.4 Packing Group
Not applicable
14.5 Environmental hazards
Not considered environmentally hazardous based on available data
14.6 Special precautions for user
no data available

IMDG
14.1 UN number
Not applicable
14.2 UN proper shipping name
Proper Shipping Name: NOT REGULATED
14.3 Transport hazard class(es)
Not applicable
14.4 Packing Group
Not applicable
14.5 Environmental hazards
Not considered environmentally hazardous based on available data
14.6 Special precautions for user
EMS Number: Not applicable
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

ICAO/IATA
14.1 UN number
Not applicable
14.2 UN proper shipping name
Proper Shipping Name: NOT REGULATED
14.3 Transport hazard class(es)
Not applicable
14.4 Packing Group
Not applicable
14.5 Environmental hazards
Not considered environmentally hazardous based on available data
14.6 Special precautions for user
no data available

Section 15. Regulatory information

Further details:
- Biodegradation: Product is not readily biodegradable.
- The product is likely to persist in the environment.

Effects in sewage plants:
- In sewage treatment plants it may be separated mechanically.

12.3 Bioaccumulative potential

To avoid bioaccumulation plastics should not be disposed in the sea or in other water environments.

12.4 Mobility in soil

no data available

12.5 Results PBT & vPvB assessment

According to the revised Annex XIII of regulation (EC) 1907/2006 and (EC) 253/2011: No information available on the product as such

12.5 Other adverse effects:

General information: Do not allow to enter into ground-water, surface water or drains.

12.7 Additional information: -

Section 13. Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal: Dispose in accordance with the current local regulations.
Waste codes according to European Waste Catalogue: -
Waste treatment-relevant information: Inadequate incineration may generate toxic gases such as CO, HCN, AN and SM
Sewage disposal-relevant information: -
Other disposal recommendations: -

Section 14. Transport information

ADR/RID

14.1 UN number
Not applicable

14.2 UN proper shipping name
Proper Shipping Name: NOT REGULATED

14.3 Transport hazard class(es)
Not applicable

14.4 Packing Group
Not applicable

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6.2.2 Modelled emissions

The modelling assessment included emissions from the four air pollution control system stacks only. As outlined in section 5.4, three of the control systems will be for the control of VOCs, with one for the control of particulate matter from the deep processing area. The locations of the stacks are shown in Figure 5.4.

Given the above, modelling is carried out for the following parameters:

- Particulate matter, including PM_{10} and $PM_{2.5}$ (from one stack) - it is assumed that 100% of the particulate matter emission is $PM_{2.5}$ (which is an extremely conservative assumption). On this basis, total particulate emissions are equal to PM_{10} emissions, which are equal to $PM_{2.5}$ emissions.
- Individual VOCs, including benzene, toluene and styrene (from three stacks)

As there are no TVOC criteria available for assessment, TVOC emissions are not modelled, and VOC impacts are instead assessed by modelling of key individual VOCs (benzene, toluene, styrene).

6.2.3 Assessment criteria

Assessment criteria used for the project was from the NSW EPA's Approved Methods, with the exception of $PM_{2.5}$ which was sourced from the Air NEPM air quality objectives, which represent the most recent and stringent standards for protection of the air quality environment.

The adopted air quality assessment criteria are summarised in Table 6.5.

1 micron = 0.001 mm

Table 6.5 Air quality impact assessment criteria

Pollutant	Averaging period	Statistic	Impact location	Impact type	Assessment Criteria (µg/m³)	
					EPA	Air NEPM
PM_{10}	24 hour	Maximum	Sensitive receptor	Cumulative	50	50
	Annual	Maximum	Sensitive receptor	Cumulative	25	25
$PM_{2.5}$	24 hour	Maximum	Sensitive receptor	Cumulative	25	20
	Annual	Maximum	Sensitive receptor	Cumulative	8	7
Benzene	1 hour	99.9th percentile	At or beyond site boundary	Incremental	29	-
Styrene*	1 hour	99.9th percentile	Sensitive receptor	Incremental	120	-
Toluene*	1 hour	99.9th percentile	Sensitive receptor	Incremental	360	-

Note: criteria for styrene and toluene are sourced from Table 7.4.a of the Approved Methods – 'Impact assessment criteria for individual odourous air pollutants (Victorian Government Gazette 2001). These criteria are for the protection against odour impacts.

fine particles suspended in the air : 10 micro meter

6.2.4 Predicted impacts

The predicted impacts were assessed at nearby sensitive receptors for the primary production of the facility. The predicted concentrations were assessed against the assessment criteria provided in Table 6.5.

Recommendations to further reduce the risk of air quality impacts at sensitive receptor locations due to processing operations are discussed in Section 7.2.

Predicted incremental concentrations

The predicted impacts (impacts from facility operations only) for PM and VOC are presented in Table 6.6 and Table 6.7 respectively. There are no predicted incremental exceedances of the assessment criteria. The "worst-case" predicted impacts for all pollutants occur at the commercial receptor R001, the Australian BioResources Facility. Impacts for particulate matter have also been presented for the worst affect residential receptor. However, the results show that the maximum impacts at both receptors are significantly below the EPA criteria.

Contour plots showing incremental $PM_{2.5}$, PM_{10} and benzene dispersion are provided in Figure 6.1, Figure 6.2 and Figure 6.3. Concentrations of styrene and toluene do not exceed 20% of the criteria level and as such contour plots have not been provided.

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Table 6.6 ***Predicted incremental particulate concentrations***

Receptor	PM_{10}		$PM_{2.5}$	
	24- hour max	Annual average	24- hour max	Annual average
Assessment criteria (µg/m³)	**50**	**25**	**20**	**7**
Maximum impact (µg/m³) at commercial receptor	14	2.2	14	2.2
Maximum impact (µg/m³) at residential receptor	7	0.58	7	0.58
Compliance	Yes	Yes	Yes	Yes
As noted above, it is conservatively assumed that total PM = PM_{10} = $PM_{2.5}$				

Table 6.7 ***Predicted incremental VOC concentrations***

Receptor	Benzene	Toluene	Styrene
	1-hour 99.9th percentile	1-hour 99.9th percentile	1-hour 99.9th percentile
Assessment criteria (µg/m³)	**29**	**360**	**120**
Maximum ground level concentration (µg/m³)	9.1	-	-
Maximum impact (µg/m³) at commercial receptor	6.2	39	39
Maximum impact (µg/m³) at residential receptor	2.7	17	17
Compliance	Yes	Yes	Yes

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8. Evaluation and conclusion

Plasrefine Recycling proposes to construct and operate a plastics recycling facility in Moss Vale. The proposal consists of two main buildings for waste receival, recycling and reprocessing and finished product storage, a wastewater treatment plant and ancillary infrastructure including an office building, workshop, truck, staff and visitor parking, internal roadways, weighbridges, water management and fire management.

Potential impacts associated with dust emissions during construction of the proposal were assessed using a risk assessment based on the UK IAQM guidance. The impact from all construction activities for nuisance, health impacts and impacts to ecological receptors was found to be low. Recommendations for dust management during construction have been provided in section 7.1 to further reduce the risk of dust impacts from construction of the proposal.

Potential air quality impacts from the operation of the proposal are associated with emissions of air from the main processing building (Building 1), the deep processing building (Building 2) and the wastewater treatment plant. Assessment of potential impacts was by Level 2 air quality impact assessment

The primary pollutants generated during the operation of the proposal are expected to be:

- Particulate matter from mechanical processing of plastics (e.g. crushing, cutting, profiling)
- Particulate matter, volatile organic compounds and odour from heating of plastics
- Odour from the wastewater treatment plant

The proposed emission control system includes localised capture of emissions from individual processing units, with emissions ventilated to a total of four emission control systems. Three emission control systems would be for the primary purpose of VOC treatment, and would include a pneumatic cyclone spray tower, an electrostatic degreasing device, and activated carbon adsorption prior to treated air being discharged from a stack. The fourth system would be for the treatment of particulate matter from the deep processing operations and would include fabric filters.

A review of sensitive receptor locations found that the nearest receptor is greater than 200 m from the closest point of the processing buildings and approximately 450 m from the wastewater treatment plant. Winds causing the nearest sensitive receptors to be located downwind of the proposal operations would be infrequent.

Air quality dispersion modelling for Building 1 and 2 operations was undertaken using AERMOD version 9.5.0. AERMOD is the approved dispersion model recommended by the US EPA and is recognised by EPA Victoria as a suitable and advanced dispersion model that improves upon Ausplume. Ausplume is listed in the NSW EPA Approved Methods. AERMOD is not explicitly mentioned in the Approved Methods but has been approved for use by the NSW EPA in numerous air quality dispersion assessments.

There are no predicted incremental exceedances of the assessment criteria. The worst-case impacts for all pollutants occurs at the commercial receptor R001, the Australian BioResources Facility. Impacts for particulate matter have also been presented for the worst affect residential receptor. However, the results show that the maximum impacts at both receptors are significantly below the EPA criteria.

The potential for cumulative particulate matter impacts was assessed through contemporaneous assessment of 24-hour average $PM_{2.5}$ concentrations, using background data sourced from the Bargo DPIE AQMS for the years 2017 and 2018. The contemporaneous assessment found the potential for a small number of exceedances of the updated NEPM 2021 objective (20 $\mu g/m^3$), 2.5 exceedances per year and one exceedance per year for the most affected commercial and residential receptors respectively. Assessment of these exceedance dates showed that the cumulative impact was primarily driven by elevated background concentrations, making up an average of 82% of the impact for the 5 exceedances at the nearest commercial receptor.

The model has conservatively assumed that the proposal will be emitting at the highest permitted concentration and highest design flow rate for all hours of the year, which is not considered to be likely. Given this conservative assumption, and based on the analysis of exceedance dates, the risk of the proposal contributing significantly to cumulative impacts at the nearest receptors is concluded to be low. Further, the existing level of control for particulate matter emissions represents best available technology, including all material processing occurring within enclosed buildings with air being treated by a pollution control system prior to release to the atmosphere by an elevated stack.

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7.5 Plastics recycling and reprocessing operations

7.5.1 Feedstock quantities and characteristics

Feedstock types, volumes and composition

The proposal would have capacity to receive up to 120,000 tonnes per year of mixed plastic waste feedstock. At full scale operation, this is expected to comprise about 100,000 tonnes of mixed plastics and up to 20,000 tonnes of polyvinyl chloride (PVC) and plastic films.

The facility would have the capability to process the following plastic types received as mixed plastic:

- Polyethylene terephthalate (PET) bottles
- High-density polyethylene (HDPE) bottles
- Polypropylene (PP) bottles
- Acrylonitrile butadiene styrene (ABS)
- Low-density polyethylene (LDPE) films
- Unplasticized polyvinyl chloride (UPVC) pipes

The mixed plastics and plastic film is expected to be received and stored in bales.

Further information on the expected feedstock quantities and composition is provided in chapter 9.

Excluded wastes

Putrescible waste, liquid waste, clinical waste, hazardous waste, asbestos and other chemical waste would not be accepted at the facility.

7.5.2 Plastics recycling and reprocessing process overview

Figure 7.6 provides a high-level overview of the proposed plastics recycling and reprocessing process.

After unloading the incoming mixed plastic waste feedstock, it would undergo a series of mechanical, manual and optical screening and sorting processes to separate the plastics into different types and colours. The first process would be to separate the bales of plastic.

Mixed plastics would first be sorted by colour. The sorted materials would then undergo crushing (flaking), washing and batch mixing. Depending on the plastic type and intended end use, some of the flakes would either be pelletised (via extrusion granulation) or milled into powder. The resulting flakes, pellets or powder would be either processed further on-site to produce advanced plastic products (deep processing) or transported off-site for direct sale.

The following sections provides further detail on each of the key proposed recycling and reprocessing processes.

REDWOOD PLASTICS
INNOVATIVE SOLUTIONS IN PLASTIC

MSDS
MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

PRODUCT NAME: Low Density Polyethylene (LDPE)

PHONE NUMBERS:
PRODUCT INFORMATION: 1-800-667-0999
CHEMTREC: 1-800-424-9300

II. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS NUMBER	WEIGHT %
Polyethylene	9002-88-4	> 99

III. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Translucent solid with waxy color

PERCENT VOLATILES: N/A

MELTING POINT: N/A

SOLUBILITY IN WATER: Insoluble

SPECIFIC GRAVITY: 0.94 - 97

IV. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: None Known

MATERIALS TO AVOID: Strong oxidizing agents

V. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION: Local ventilation in dusty conditions, or if thermal decomposition occurs

PROTECTIVE EQUIPMENT

SKIN: Gloves and protective garments when handling molten material

EYE: Glasses with side shields in dusty conditions

RESPIRATOR: NIOSH approved dust respirator recommended. If material is being burned wear an organic respirator

LDPE

REDWOOD PLASTICS
INNOVATIVE SOLUTIONS IN PLASTIC

V. EXPOSURE CONTROLS/PERSONAL PROTECTION - continued

EXPOSURE GUIDELINES:

INGREDIENT	AGENCY	VALUE
Polyethylene	ACGIH	10 mg/m^3 (total dust)
	OSHA	15 mg/m^3 (total dust)
		5 mg/m^3 (respirable dust)

VI. HEALTH HAZARDS IDENTIFICATION

MEDICAL RESTRICTIONS: None Known

CHRONIC/CARCINOGENICITY: NO

VII. FIRST AID MEASURES

SKIN: If molten material comes in contact with the skin, cool under running water. Do not attempt to remove the molten material from the skin. Get medical attention.

EYES: Seek medical attention if constant irritation occurs.

INHALATION: Seek medical attention if constant irritation occurs.

VIII. FIRE FIGHTING MEASURES

AUTOIGNITION TEMPERATURE: N/A

HAZARDOUS PRODUCTS OF COMBUSTION: Carbon dioxide, carbon monoxide and aldehydes

EXTINGUISHING MEDIA: Water, Foam, Carbon Dioxide, Dry Chemical

SPECIAL FIRE FIGHTING INSTRUCTIONS/PRECAUTIONS:
Soak thoroughly with water to cool and prevent re-ignition. The smoke can contain polymer fragments of varying composition, in addition to unidentified toxic and /or irritating compounds.

IX. ACCIDENTAL RELEASE MEASURES

SPILL OR RELEASE: Sweep up for disposal or reuse

X. HANDLING AND STORAGE

HANDLING: Wash with soap and water

STORAGE: Store in a sprinkler protected warehouse. If a heat source is present keep the area well ventilated

Material Safety Data Sheet

According to EU Reg. 1907/2006 & 830/2015

Last review: JULY 2017

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1 Product identifier

Product Name	PoliPET
Product Identification Name	PoliPET 76W, PoliPET 80GP, PoliPET 84SD, PoliPET 84F PoliPET ECO 84SD, PoliPET ECO 84F
Name REACH	Polyethylene Terephthalate (copolymer)
CAS number	25038-59-9
EC number	N/A
REACH number	N/A
Molecular Formula	$(C_{10}H_8O_4)_n$
Synonyms	Poly(oxy-1,2-ethanedioloxycarbonyl-1,4phenylenecarbonyl)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Polyethylene terephthalate (PET) is an intermediate plastic used for food and non-food contact packaging, bottles and other relevant applications, by (not exhaustive methods): molding and extrusion processes. Do not use in medical applications involving permanent implantation in the human body.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier Polisan Hellas S.A
Industrial & Commercial Company of Pet Resin Production & Preforms
Head Office: B' Industrial Area of Volos, 37 500 Volos, Greece
Tel. HO: +30 24250 22250

1.4 Emergency telephone number

For emergency health, safety and environmental information, telephone:
+30 24250 22250

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of substance and mixture

Polyethylene terephthalate (PET) is a polymer not classified as a hazardous substance according to Regulation (EC) No 1272/2008 (CLP). PET is not categorized as persistent, bio-accumulative or toxic (PBT). PET is not very persistent or very bio-accumulative (vPvB), as defined in REACH (Annex XIII) and is not included in the candidate list of substances of very high concern (SVHC).

In accordance with Regulation (EC) No 1907/2006 (REACH), there is no obligation to provide a material safety data sheet (MSDS) for PET products.

This Safety Data Sheet is provided only to ensure that, as a supplier (manufacturer of PET), we communicate safety information to the supply chain to facilitate safe use, handling, storage and transportation of PET products. Possible hazards of this product are associated mainly with its processing.

Resin particles, like other inert materials, are mechanically irritating to eyes. Molten polymer will adhere to the skin and can cause severe burn.

2.2 Label elements

Labeling not required according to Regulation (EC) 1272/2008 (CLP).

2.3 Other hazards

Polyethylene terephthalate (PET) is not categorized as persistent, bio-accumulative or toxic (PBT) according to Regulation (EC) 1907/2006, Annex XIII.

Hazards of this product may be associated with its processing: spilled pellets create a slipping hazard. Molten plastic can cause severe thermal burns. Fumes produced during the thermal processing of polymer melt may cause eye, skin and respiratory tract irritation. Treat in the same way as other thermal burns and wood smoke inhalation.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance: Mono-constituent substance **Mixtures:** Not applicable

Product name	CAS No	Content	REACH No	Classification according to Reg. (EC) 1272/2008 (CLP)
Polyethylene terephthalate (PET)	25038-59-9	100%	N/A	Not classified as hazardous

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: remove to fresh air and keep at rest in a position comfortable for breathing, in case of accidental inhalation of dust or fumes from overheating of combustion or melted substance. Drink water to clean the mouth and blow the nose to remove dust. Get medical attention if evidence of breathing problems or symptoms occur.

Skin contact: Cool skin rapidly with cold water after contact with molten polymer. Do not try to peel molten polymer from the skin. Put a sterile bandage on the wound and get medical advice.

Eye contact: Immediately flush eyes with plenty of clean water or eye wash solution, removing any contact lenses. Hold eyes open while flushing. If irritation occurs, get medical attention.

Ingestion: No toxicity hazard. This substance is biologically inactive. Wash out mouth with water. If material has been swallowed and the exposed person is conscious, provide small quantities of potable water to drink. If symptoms occur, get medical attention.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Not known significant effects or critical hazards. Particles / dust are mechanically irritating to eyes. Molten polymer will adhere to the skin and can cause severe burn. If necessary treat symptomatically.

4.3 Indication of any immediate medical attention and special treatment method

Treat Symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable: In case of fire use water spray/aerosol, dry chemical, powder extinguishers, water/foam, CO2, A or B class fire extinguishers.

Not Suitable: Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture: No specific fire or explosion hazard. Low fire hazard. Only powdered material may form flammable / explosive dust-air-clouds mixture. High voltage static electricity build-up and discharge must be avoided when significant quantities of powdered material are present. During a fire, smoke

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may contain the original material in addition to combustion products of varying composition, which may be toxic and/or irritating.

Hazardous thermal decomposition products: Decomposition /combustion products may include and are not limited to carbon monoxide and carbon dioxide. In case of fire use breathing apparatus.

5.3 Advice for fire-fighters

Special protective actions for fire-fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident, if there is a fire (solid polymer burns only with difficulty). No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters: Fire-fighters must wear suitable personal protective equipment (clothing, helmet, protective boots, gloves conforming to EU standard EN 469), and self-contained breathing apparatus (SCBA).

Fire-fighting measures: Use self-contained apparatus if respirable dust and/or fumes/vapors occur. Use water spray to cool and disperse vapors and protect personnel.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unprotected personnel from approaching or entering. Do not touch or walk through spilled material. Wear suitable personal protective equipment.

For emergency responders: If specialized clothing is required to deal with spillage, consider information in Section 8 and information "For non-emergency personnel".

6.2 Environmental precautions

No special environmental precautions required. Avoid dispersion of spilled material. Clean up spills immediately. why if not toxic

6.3 Methods and materials for containment and cleaning up

Small spill: Vacuum or sweep spilled material and place in a designated, labeled waste container. Disposal handling must comply with the relevant environmental protection and waste disposal legislation and local authority requirements.

Large spill: Prevent entry into sewers, watercourses and confined areas. Vacuum or sweep spilled material and place in a designated, labeled waste container. Disposal handling must comply with the relevant environmental protection and waste disposal legislation and local authority requirements.

6.4 Reference to other

See Section 1 for emergency contact information.
See Section 8 for information on suitable personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Wear suitable personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is stored, handled and processed. Wash hands and face before eating, drinking and smoking. Remove any contaminated clothing and personal protective equipment before entering eating area. Provide exhaust ventilation at places where dust is formed. Take precautionary measures against static discharges, where dust is formed.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations.
Store in original containers. Keep containers tightly closed in a dry, cool and well ventilated area, away from incompatible materials (see Section 10). Protect from direct sunlight, UV light, high temperatures and rain. Containers that have been opened should be carefully resealed after use and kept upright to prevent leakage. Do not store in unlabeled containers.

7.3 Specific end use(s)

Recommendations: Do not use in medical applications involving permanent implantation in the human body.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limits: No exposure limit value established (in case of dust, <10mg/m3 TLV-TWA 8h - 5mg/m3 respirable dust).
During processing of PET small amount of acetaldehyde, AA (CAS 75-07-0) is generated. Customers are advised to check exposure to workers and apply current workplace exposure limits. There are workplace exposure limits for aldehydes and the customer should ensure they use the measures appropriate to their workplace.
Derived effect levels: Not applicable
Predicted effect concentrations: Not applicable

8.2 Exposure controls

Individual protection measures
Hygiene measures: Wash hands and face before eating, drinking and smoking and at the end of workday. Remove any contaminated clothing and personal protective equipment before entering eating area.
Eye/face protection: Safety approved eyewear should be used as a good industrial practice and when a risk assessment indicates this as mandatory to avoid any possible exposure to material particles or dust. Full-face protection should be used when material is handled hot mass.
Hand protection: Approved protective gloves/clothing should be used as a good industrial practice. Thermal isolating gloves should be used when material is handled hot mass.
Body protection: Wear work clothing. Protective/thermal insulating gloves as above.
Other skin protection: Suitable approved protective footwear.
Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. Dust protection mask or self-contained breathing apparatus. Do not breathe fumes evolved. Use an approved air-purifying respirator when vapors are generated at increased temperatures or when dust or mist is present. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process.
Appropriate engineering controls: Use of local exhaust ventilation system (or other engineering controls), efficient to maintain airborne contaminants levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.
Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. Loose PET pellets produce a slipping hazard.

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Bio plastic

Polypropylene (PP) Copolymer

MATERIAL SAFETY DATA SHEET
Polypropylene (PP)

1. SUBSTANCE/PREPARATION & COMPANY/UNDERTAKING IDENTIFICATION

Chemical Name & Synonyms	: Polypropylene (PP) Copolymer
Trade Name	: OPALENE-PP
Chemical Family	: Polyolefin
C.A.S. No.	: **9010-79-1**
Manufacturer's Name	: ONGC Petro additions Limited
Address	: Polymer Marketing Group: 1st Floor, Omkara Complex, Sai Chowkdi,
	Manjalpur, Vadodara-390011, Gujarat, India
Telephone No.	: +91 265 6192600
Fax No.	: +91 265 6192666
Corporate Site	: **www.opalindia.in**

2. COMPOSITION & INFORMATION ON INGREDIENTS

CHEMICAL NAME	CONTENT (Normal)*	CAS NUMBER	EXPOSURE LIMITS IN AIR		
			ACGIH TLV-TWA	ACGIH TLV-STEL	IDLH
Polypropylene Co-Polymer	>= 99 wt%	9010-79-1	10 mg/m^3 (inhalable fraction)	NA	NA
Proprietary additives	< 1 wt%	Mixture	NA	NA	NA
Hazardous Components	None	NA	NA	NA	NA
* For different grades of PP, minor changes may be there.					

3. HAZARDS IDENTIFICATION

- Physio-chemical properties : No hazards resulting from material as supplied.
- Properties affecting health : No hazards resulting from material as supplied.
- Environmental properties : No hazards resulting from material as supplied.

Classification System

- This material is not hazardous by OHSA hazard communication definition.
- Dust may form explosive mixtures with air.
- At process Temperature irritating fumes may be produced.
- The preparation does not meet the criteria for classification in accordance with Directive 1999/45/EC and Directive 1272/2008/EC

4. FIRST AID MEASURES

GENERAL INFORMATION
At room temperature the product is neither an irritant nor gives off hazardous vapours. The measures listed below apply to critical situations (Fire, incorrect process conditions).

- **Skin Contact**
  If molten material contacts the skin it may cause thermal burns, immediately flush with large amounts of cold water to cool the affected skin and polymer. Do not attempt to peel the polymer from skin. Obtain immediately emergency medical attention if burn is deep or extensive.
- **Eye Contact**
  Dust, fines and process vapours may irritate the eyes. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek medical attention if discomfort persists.
- **Inhalation**
  Dust and process vapours may irritate the nose, throat and respiratory tract. If symptoms are experienced, move victim to fresh air. Obtain medical attention if breathing difficulty persists.
- **Ingestion**
  Adverse health effects due to ingestion are not anticipated. Do not induce vomiting. If symptoms develop, obtain medical attention.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media	As appropriate for surrounding fire. Extinguish preferably with foam, carbon Dioxide, water/water mist or dry chemical.
Unsuitable Extinguishing Media	Do not use high volume water jet or waterspray.
Fire Fighting Protective Equipment	A self-contained breathing apparatus and suitable protective clothing, eye protection etc should be used in fire conditions.
Hazardous Decomposition Product	Combustion or thermal decomposition will evolve toxic and irritant vapours.
Unusual Fire & Explosion hazards	Polymer dust particles in the atmosphere are combustible and may be explosive. CO, olefinic and paraffinic compound, trace amount of organic acids, ketones, aldehydes and alcohols may be formed during combustion.
Other	Can melt and burn in a fire. Molten material tends to flow or drip and will propagate fire.

6. ACCIDENTAL RELEASE MEASURES

high speed roller doors will be used

- **Personal Precautions :**
  - Avoid generating dust. Potential dust explosion hazard. Use only non-sparking tools.
  - Material creates dangerous slipping hazard on hard surfaces.
  - Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation wear suitable respiratory equipment.
- **Environmental Precautions :**
  - Avoid release to environment. Do not allow to enter drains, sewers or watercourses
- **Methods of cleaning up**
  - Take up mechanically and collect in suitable container for disposal.
  - Good housekeeping must be maintained to avoid potential slipping problem.
  - Keep walking surface free of spilled material to avoid slipping hazard.

Appendix 3

Industries that may fall within SEPP 33

INDUSTRIES THAT MAY BE POTENTIALLY HAZARDOUS

Industry	Sources of Hazard	Possible Impacts
Aluminium dross processing	Emissions	Exposure to toxic hydrogen fluoride gas
Chemical, including resins, fertilisers and pesticides	Raw materials, Products, Process conditions	Fire, explosion, toxic exposure
Coal handling	Coal dust	Dust explosion
Food processing	Refrigerant leaks(Ammonia)	Toxic and explosive gas
Grain handling	Grain dust	Dust explosion
Industrial gas processing, storage and handling	Toxic, flammable or pressurised gases	Fire, explosion, toxic exposure
LPG storage and handling facilities	Gas leaks	Fire, explosion
Metal foundries	Water trapped in scrap	Steam explosion with spray of molten metal
Oil and gas extraction and processing	Pressurised gas in wells, processing conditions	Fire, explosion
Paint and surface coatings	Solvents	Fire, explosion, emissions of toxic gases
Petrochemical	Various petrochemicals, Process conditions	Fire, explosion, exposure to toxic gases & liquids
Petrol stations	Liquid fuel leaks/spills	Fire, explosion
Petroleum refining	Liquid Fuels, Gas, Process conditions	Fire, explosion
Pool chemicals	Mixing of incompatible chemicals	Fire, toxic gas release
Pulp and paper manufacture	Processing chemicals	Toxic exposure, environmental damage
Smelting (e.g. Copper, Aluminium, Zinc)	Emissions	Sulphur dioxide, acid mist emissions
Starch	Dust	Dust explosions
Vegetable oil extraction and processing	Oil, Seedcake, Spent bleaching earth, Solvent	Spontaneous combustion, Fire, explosion
Waste lubricating oil recycling	Dissolved fuels.	Fire, explosion
Water/Sewage treatment	Chemical spills, Mixing of incompatibles	Exposure to toxic liquids and gases

2 Permitted without consent

Environmental protection works; Home-based child care; Home occupations

3 Permitted with consent

Animal boarding or training establishments; Attached dwellings; Boat building and repair facilities; Business premises; Centre-based child care facilities; Community facilities; Depots, Function centres; Garden centres; Hardware and building supplies; Hostels; Hotel or motel accommodation; Industrial retail outlets; Industrial training facilities; Information and education facilities; Landscaping material supplies; Light industries; Local distribution premises; Markets; Mortuaries; Multi dwelling housing; Neighbourhood shops; Office premises; Oyster aquaculture; Passenger transport facilities; Places of public worship; Plant nurseries; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Research stations; Residential flat buildings; Respite day care centres; Rural supplies; Service stations; Shop top housing; Specialised retail premises; Storage premises; Take away food and drink premises; Tank-based aquaculture; Timber yards; Vehicle body repair workshops; Vehicle repair stations; Vehicle sales or hire premises; Veterinary hospitals; Warehouse or distribution centres; Wholesale supplies; Any other development not specified in item 2 or 4

4 Prohibited

Agriculture; Air transport facilities; Amusement centres; Camping grounds; Caravan parks; Cellar door premises; Cemeteries; Correctional centres; Crematoria; Eco-tourist facilities; Electricity generating works; Exhibition homes; Exhibition villages; Extractive industries; Farm buildings; Farm stay accommodation; Forestry; Freight transport facilities; Heavy industrial storage establishments; Home occupations (sex services); Industries; Open cut mining Residential accommodation; Restricted premises; Roadside stalls; Rural industries; Sewage treatment plants; Sex services premises; Transport depots Waste or resource management facilities; Water recreation structures; Water supply systems; Wharf or boating facilities

Zone E4 General Industrial

1 Objectives of zone

- To provide a range of industrial, warehouse, logistics and related land uses
- To ensure the efficient and viable use of land for industrial uses.

- To minimise any adverse effect of industry on other land uses.
- To encourage employment opportunities.
- To enable limited non-industrial land uses that provide facilities and services to meet the needs of businesses and workers.
- To allow non-industrial land uses, including certain commercial activities, that, because of the type, scale or nature of the use, are appropriately located in the zone and will not impact the viability of business and commercial centres in Wingecarribee.
- To ensure new development and land uses incorporate measures that take into account the spatial context and mitigate potential impacts on neighbourhood amenity and character and the efficient operation of the local and regional road system.

2 Permitted without consent

Environmental protection works; Home-based child care; Home occupations

3 Permitted with consent

Depots; Freight transport facilities; Garden centres; General industries; Goods repair and reuse premises; Hardware and building supplies; Industrial retail outlets; Industrial training facilities; Landscaping material supplies; Light industries; Local distribution premises; Neighbourhood shops; Oyster aquaculture; Plant nurseries; Rural supplies; Specialised retail premises; Take away food and drink premises; Tank-based aquaculture; Timber yards; Vehicle sales or hire premises; Warehouse or distribution centres; Any other development not specified in item 2 or 4

4 Prohibited

Agriculture; Air transport facilities; Airstrips; Amusement centres; Business premises; Camping grounds; Cemeteries; Correctional centres; Crematoria; Eco-tourist facilities; Exhibition homes; Exhibition villages; Farm buildings; Forestry; Health services facilities; Heavy industrial storage establishments; Highway service centres; Home occupations (sex services); Industries; Open cut mining; Residential accommodation; Restricted premises; Retail premises; Schools; Sex services premises; Tourist and visitor accommodation; Water recreation structures; Wharf or boating facilities

Zone E5 Heavy Industrial

1 Objectives of zone

- To provide areas for industries that need to be separated from other land uses.
- To ensure the efficient and viable use of land for industrial uses.
- To minimise any adverse effect of industry on other land uses.
- To encourage employment opportunities.

2 Permitted without consent

Environmental protection works

3 Permitted with consent

Data centres; Depots; Freight transport facilities; General industries; Hazardous storage establishments; Heavy industries; Industrial training facilities; Offensive storage establishments; Oyster aquaculture; Tank-based aquaculture; Warehouse or distribution centres; Any other development not specified in item 2 or 4

4 Prohibited

Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Camping grounds; Car parks; Caravan parks; Cemeteries; Centre-based child care facilities; Commercial premises; Community facilities; Correctional centres; Crematoria; Eco-tourist facilities; Educational establishments; Entertainment facilities; Exhibition homes; Exhibition villages; Farm buildings; Forestry; Function centres; Health services facilities; Highway service centres; Home-based child care; Home businesses; Home industries; Home occupations; Home occupations (sex services); Industrial retail outlets; Information and education facilities; Local distribution premises; Mortuaries; Open cut mining; Passenger transport facilities; Places of public worship; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Residential accommodation; Respite day care centres; Restricted premises; Self-storage units; Service stations; Sex services premises; Tourist and visitor accommodation; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Water recreation structures; Wharf or boating facilities

Zone MU1 Mixed Use