


SAFETY DATA SHEET		PR/EHD/OH/F-313	 بترو رابغ Petro Rabigh
PRODUCT NAME : LINEAR LOW DENSITY POLYETHYLENE			
SDS Reference No. SDS-03-0008	REV NO. 1.8	February 6, 2020	Page 1 of 12

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product Identifier	
Product Description:	Linear Low Density Polyethylene (LLDPE)
Grade Name:	FS150A, FS153S, FS250B, FS253S, FS350A, F2111, F2111BS, F2122, F2122BS, F2231
REACH Registration Number:	Not applicable
CAS Number:	25087-34-7
EC Number:	Not available
Chemical formula:	(CH ₂ -CH ₂) _x

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

IDENTIFIED USES:
Thermoplastic resin extruded or moulded by manufacturers into articles or goods such as collation shrink, liners, heavy duty sacks, refuse, tunnel films, mulching films, etc.
MOST COMMON TECHNICAL FUNCTION OF SUBSTANCE (WHAT IT DOES):
Not provided
USES BY CONSUMERS ADVISED AGAINST:
Do not use substance for purposes other than indicated in the manufacturer's information. During such use the user may be exposed to unforeseen hazards.

1.3 Manufacturer or supplier's details

Manufacturer	Rabigh Refining and Petrochemical Company
Address	Plant: PO Box 101, Rabigh 21911, Kingdom of Saudi Arabia Tel: +966 12 425 0390 Free Number: 800 440 9000
E-mail of person responsible for this SDS	stephane.dallaire@petrorabigh.com

1.4 Emergency telephone number

Emergency telephone numbers (24-hour)	Asia Pacific (except China):	CareChem 24 +65 3158 1074
	China (Off-land)	CareChem 24 +86 512 8090 3042
	US, Canada Outside above area	ChemTrec 1-800-424-9300 +703-527-3887
	Europe, America, Middle East, Africa (Europe & English Speaking):	CareChem 24 +44 (0) 1235 239 670
	Middle East & Africa (Arabic speaking):	CareChem 24 +44 (0) 1235 239 671


SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

2.2.1 Classification and labeling in Annex of Directive 67/548/EEC:
This product is not classified as dangerous according to EU Directive 67/548/EEC.

Risk Phrases:
 This product has been classified for the European Union according to Annex VI of this Directive. It is a preparation containing polymers and additives. Although it may contain components that may be classified, the substance does not present a danger to human health by inhalation, ingestion, or contact with the eyes and skin or to the aquatic environment in the form in which it is placed on the market. Based on Article 12 of Directive 1999/45/EC such preparations do not require labelling.

Conform to Regulation (EC) No. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), Annex II -Europe

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2.2.2 Classification according to Regulation (EC) No. 1272/2008:
This product is not classified as dangerous according to Regulation (EC) No 1272/2008.

Labeling

Signal word: Not applicable
 Hazard pictograms: Not applicable
 Hazard statements: Not applicable
 Precautionary statements: Not applicable
 Safety statements: Not applicable

According to Directive 1999/45/EC, this substance is NOT dangerous.

2.3 Other hazards		
Substance meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII:	None	
Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII:	None	
Other hazards which do not result in classification:	Emergency overview:	CAUTION! Powder or fine particles and heat-released air emissions may be irritating to the eyes, skin and respiratory tract. Accumulated fine dust may form explosive air-dust mixtures. Spilled
	Inhalation:	Inhalation of fine particles may cause respiratory irritation. Thermal processing fumes may cause irritation, pulmonary oedema and a possible asthma-like response. Some additives may include crystalline silica and/or talc. These additives are inextricably bound or coated in the Polyethylene; this appears to prevent any toxic reaction to the lungs.
	Eyes:	Contact with powder or fines may cause mechanical irritation. Contact with hot or molten material may cause severe injury, including possible blindness.
	Skin:	Contact with powder or fines may cause mechanical irritation, which is increased by rubbing or if skin is dry. Contact with hot or molten material may cause severe thermal burns. Some additives may include crystalline silica and/or talc. These additives are inextricably bound or coated in the Polyethylene; this appears to prevent any toxic reaction to the skin.
	Ingestions:	Ingestion of powder or fines may produce mild gastrointestinal irritation and disturbances.


SECTION 3: Composition/information on ingredients

3.1 Classification of the substance or mixture					
COMPONENTS	% (BY Weight)	CAS#	EINECS#	HAZARD SYMBOL	RISK PHRASES
Ethylene-butene Copolymers	> 99	25087-34-7	-	-	-
Additives	<1	-	-	-	-

3.2 Mixtures	
There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.	

SECTION 4: First aid measures

4.1 Description of first aid measures	
Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell.
Inhalation	Remove victim to fresh air wearing self contained breathing apparatus, and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

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Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do NOT induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation, where aspiration may cause pulmonary edema and pneumonitis.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact	No information
Inhalation	No information
Skin contact	No information
Ingestion	No information

Over-exposure signs/symptoms

Eye contact	No specific data.
Inhalation	No specific data.
Skin contact	No specific data.
Ingestion	No specific data

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. No mouth-to-mouth resuscitation. Do not induce vomiting, use gastric lavage only.
Specific treatments	No specific treatment

SECTION 5: Firefighting measures

5.1 Extinguishing media


Suitable extinguishing media	Water fog or water spray. In the case of small fires, dry chemical or carbon dioxide or foam can be used.
Unsuitable extinguishing media	Do not use high pressure or full jet water stream, high pressure, direct water streams as it may scatter and spread fire. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers

5.2 Special hazards arising from the substance of mixture

Hazards from the substance or mixture	Solid resins support combustion but do not meet combustible definition. Product will burn at high temperatures but is not considered flammable. Under fire conditions, product will readily burn and emit irritating smoke. A high concentration of airborne powders or dust may form explosive mixtures with air. Risk of dust-air explosion is increased if flammable vapours are also present. May accumulate hazardous static charge.
Hazardous thermal decomposition products	Decomposition products under fire conditions or upon heating the substance may emit various oligomers, waxes, and oxygenated hydrocarbons as well as carbon oxides and small amounts of organic vapors (e.g., aldehydes, acrolein). Inhalation of these decomposition products may be hazardous to health.

5.3 Advice for firefighters

Special protective actions for fire-fighting	Position upwind. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. If possible, move containers, stop flow of product. Continue water spray from protected position until container stays cool. Prevent water used in emergency cases from entering sewers and drainage systems.
Specific protective equipment for fire-fighting	Fire-fighters shall wear self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

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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 unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mists. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. Alert stand-by
For emergency responders	Consider the risk of potentially explosive atmospheres. Eliminate ignition sources. If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. Wear self contained breathing apparatus when entering area unless atmosphere is proved by monitoring to be safe. Ensure adequate ventilation.

6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Small spill	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill	Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

6.4 Reference to other sections

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

SECTION 7: Handling and storage


The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- 7.1.1. Recommendations shall be specified to:**
- (a) keep away from ignition sources, flames, static discharges;
 - (b) allow safe handling of the substance such as containment and measures to prevent fire as well as aerosol and dust generation;
 - (c) prevent handling of incompatible substances or mixtures;
 - (d) reduce the release of the substance or mixture to the environment, such as avoiding spills or keeping away from drains;
 - (e) use only properly specified equipment and materials which are suitable for this product.
 - (f) ensure equipment is adequately earthed, and use of only non-sparking tools
- 7.1.2. Advice on general occupational hygiene shall be provided, such as:**
- (a) not to eat, drink, and smoke in work areas;
 - (b) wash hands after use; and
 - (c) remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

- (a) store in accordance with local regulations;
- (b) store in original container outdoors and protected from direct sunlight, or in well-ventilated areas, away from incompatible materials (see section 10) and food and drink;
- (c) storage area must be clearly identified, well illuminated, clear of obstruction and accessible only to trained and authorized personnel;
- (d) avoid accumulation of dust by frequent cleaning and suitable construction storage and handling facility;
- (e) keep container tightly closed, earthed (grounded) and sealed until ready for use;
- (f) containers that have been opened must be carefully resealed and kept upright to prevent leakage;
- (g) do not store in unlabelled containers;
- (h) do NOT enter filled bulk containers and attempt to walk over the substance, due to risk of slipped and possible suffocation;
- (i) use a fall arrest system when working near open bulk containers; and
- (j) use appropriate containment to avoid environmental contamination.

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7.3 Specific end use(s)	
Recommendations	Outdoor storage of product in bags requires protection from ultra-violet sunlight by use of a UV stabilized bag or alternate means.
Industrial sector specific solutions	No information is available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters


Occupational exposure limits				
Product / Ingredient name	Exposure limit values			
Substance	Form	Exposure Limit (8-hour)	STEL	Reference
Polyethylene	Dust: Inhalable	TWA: 10 mg/m ³ VLA-ED: 10 mg/m ³ TLV:10 mg/m ³	- - -	Belgium, Portugal, Ireland, UK Spain ACGIH (2011) Belgium Portugal (related to nuisance dust; provided no asbestos and crystalline silica<1.0%) ACGIH (2011) Ireland, UK (related to nuisance dust) Spain (related to nuisance dust; provided no asbestos and crystalline silica<1.0%)
	Alveolar Respirable	TWA: 3 mg/m ³ TWA: 3 mg/m ³ TLV: 3 mg/m ³ TWA: 4 mg/m ³ VLA-ED: 3 mg/m ³	- - - - -	
Crystalline silica (Quartz) (if present)	Dust: Respirable Alveolar	TLV:0.025 ppm MAK: 0.3 mg/m ³ TWA: 0.1 mg/m ³ TWA: 0.05 mg/m ³ TWA: 0.025 mg/m ³ VLA-ED: 0.1 mg/m ³ LLV: 0.1 mg/m ³ TWA: 0.3 mg/m ³ TWA: 0.1 mg/m ³	TLV-STEL:2.5 ppm	ACGIH (2011) Austria Denmark Finland Portugal Spain Sweden UK France & Belgium

Recommended monitoring procedures

Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

Derived no effect levels

Product / Ingredient name	Type	Exposure	Value	Population	Effects
Polyethylene	DNEL	Short term, Inhalation	No information available	Worker	Local
	DNEL	Long term Inhalation	No information available	Worker	Local

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Predicted no effect concentrations				
Product / Ingredient name	Type	Compartment Detail	Value	Method Detail
Polyethylene	PNEC	Fresh water	not available	-
	PNEC	Marine	not available	-
	PNEC	Intermittent release	not available	-
	PNEC	Fresh water sediment	not available	-

8.2 Exposure controls

Appropriate engineering controls	If user operations generate dust, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
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Individual protection measures

Hygiene measures:	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection:	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Recommended: safety glasses with side-shields. Wear safety goggles in circumstances where eye contact may occur (e.g. acc. to EN 166).
Skin protection Hand protection:	Wear thermal insulating gloves (e.g. acc. to EN 420, EN 388, EN 374-2, EN 374-3) whenever molten material is present.
Body protection:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved. It is necessary to wear protective clothes (e.g. acc. to EN 465), heat resistant gloves and other protection equipment. Protective clothing should be regularly inspected and maintained. and should be approved by a specialist before handling this product.
Other skin protection:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection:	In the absence of effective engineering measures, and if during operations the exposure to large amounts of product dust is inevitable, then suitable respiratory protective equipment, such as A2 filtering mask or analogous should be applied (e.g. acc. to EN 14387). When working in vessel internals or other confined spaces do not use filtering masks but the special self-contained protective equipment. Respiratory protection equipment should be selected and used in accordance with the manufacturer's instructions and requirements established by the law.
Environmental exposure controls:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, dust bags, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance Physical state:	
Form:	Solid, pellets, or powder
Color:	Clear to white
Odour:	Minimal; sweet
Odour threshold :	Not available
pH:	Not applicable
Melting point/freezing point range:	116°C – 127°C
Boiling point	Not applicable
Relative density (Water=1)	0.912 – 0.941
Vapour Pressure:	Not available
Evaporation rate (n-Butyl acetate=1):	Not applicable
Vapour density (Air=1)	Not applicable
Water solubility:	Insoluble


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Partition coefficient; n-octanol/water (log value):	Not available
Flash point:	Not flammable
Softening point:	Not provided
Upper/lower flammability:	Not applicable
Viscosity:	Not applicable
Explosive properties:	Fine dust and powder may form explosive mixtures with air.
Explosive limits:	Not provided
Self-ignition temperature	349°C
Decomposition temperature:	Not provided
Oxidising properties:	Not available
Stability in organic solvents and identity or relevant degradation products	Not available
Dissociation constant	Not applicable
Granulometry	Not applicable


9.2 Other properties
No additional information.

SECTION 10: Stability and reactivity
10.1 Reactivity
No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability
This product is stable under normal use conditions for shock, vibration, temperature or pressure.
10.3 Possibility of hazardous reactions
Under normal conditions of storage and use, hazardous reactions or polymerization will not occur.
10.4 Conditions to avoid
Avoid creating airborne dust or powder. These may form explosive mixtures with air. Risk of dust-air explosions is increased if flammable vapours are also present.
10.5. Incompatible materials
Strong oxidizing agents, organic solvents, ether, gasolinf, lubricating oils, chlorinated hydrocarbons and aromatic hydrocarbons.. For material computability see latest version of ISO 11114.
10.6 Hazardous decomposition products
Under heating or fires, Polyethylene may emit various oligomers, waxes and oxygenated hydrocarbons as well as carbon oxides and small amounts of other organic vapours and fumes (e.g., aldehydes, acrolein). Inhalation of such decomposition products may be hazardous to human health and safety.

SECTION 11: Toxicological information
11.1 Information on toxicological effects
Acute Toxicity
Conclusion/summary: Material is considered essentially inert and non-toxic. Exposure to elevated levels of dusts or heated vapours or fumes may cause sikh, eyes and respiratory tract irritation and possibly pulmonary oedema. Contact with molten material can cause severe thermal burns. The material is expected to present a lesser degree of hazards since the hazardous components are incorporated in a polymer matrix. Acute oral toxicity: Low toxicity; no data are provided. Acute inhalation toxicity: High concentrations may cause pulmonary oedema; no data are provided.
Repeated dose Toxicity; oral
Conclusion/summary: No relevant human information is available.

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<u>Repeated dose Toxicity: inhalation</u>			
Conclusion/summary:		No relevant human information is available. Crystalline silica (if present) is classified by IARC as A1 carcinogen (human carcinogen). However, it is considered bound into the polymer matrix which should prevent any toxic reaction to the respiratory tract system.	
<u>Repeated dose Toxicity: dermal</u>			
Conclusion/summary:		This information is not available.	
<u>Repeated dose Toxicity: other routes</u>			
Conclusion/summary:		This information is not available.	
<u>Irritation: skin</u>			
Conclusion/Summary:		Prolonged or repeated contact with dust may casue skin mechanical irritation.	
<u>Irritation: eyes</u>			
Conclusion/Summary:		Prolonged or repeated contact with dust may casue eye mechanical irritation.	
<u>Irritation: respiratory tract</u>			
Conclusion/Summary:		Excessive dust levels can irritate the respiratory tract.	
<u>Sensitisation: skin</u>			
Conclusion/Summary:		The material is not considered a skin sensitizer.	
<u>Sensitisation: respiratory tract</u>			
Conclusion/Summary:		No human data are available indicating a concern for respiratory sensitisation.	
<u>Mutagenicity:</u>			
Conclusion/summary:		No human information is available.	
<u>Carcinogenicity:</u>			
Conclusion/summary:		The material is not classified as carcinogen. However,crystalline silica (if present) is human carcinogen.	
<u>Reproduction Toxicity</u>			
<u>Effects on fertility:</u>			
Conclusion/summary:		No relevant human information is available.	
<u>Toxicity of reproduction</u>			
<u>Developmental toxicity:</u>			
Conclusion/summary:		No relevant human information is available.	
<u>Teratogenicity:</u>			
Conclusion/Summary:		No relevant human or non-human information is available.	
<u>Specific target organ toxicity (single exposure):</u>			
Conclusion/summary:		No relevant human or non-human information is available.	
<u>Specific target organ toxicity (repeated exposure)</u>			
Product / Ingredient name	Category	Route of exposure	Target organs
Polyethylene	5	Inhalation and oral	Respiratory tract, lungs.
<u>Aspiration hazards:</u>			
Hazards:		Not applicable	
Information on the likely routes of exposure:		No relevant human or non-human information is available	
<u>Potential acute health effects:</u>			
Eye contact:		Slightly and not specific.	
Inhalation:		Excessive exposure to the material may be harmful and irritating to the respiratory tract by inhalation	
Skin contact:		Mechanical irritation	
Ingestion:		May produce mild gastrointestinal irritation and disturbances.	

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Symptoms related to the physical, chemical and toxicological characteristics:				
Eye contact:	Slight but not specific irritation			
Inhalation:	Irritation			
Skin contact:	Irritation			
Ingestion:	Irritation and stomach disturbances			
Delayed and immediate effects and also chronic effects from short and long term exposure:				
Short-term exposure				
Potential immediate effects:	No relevant human or non-human information is available.			
Potential delayed effects:	No relevant human or non-human information is available.			
Long-term exposure				
Potential immediate effects:	No relevant human or non-human information is available			
Potential delayed effects:	No relevant human or non-human information is available			
Potential chronic health effects				
Product / Ingredient name	Result	Target	Dose	Duration
Polyethylene	DNEL; Acute-inhalation, local effects	workers	-	-
	DNEL; long term-inhalation, local effects	workers	-	-
	DNEL; Acute-inhalation, local effects	general population	-	-
	DNEL; long term -inhalation, local effects	general population	-	-
Conclusion/summary:				
General:	Polyethylene is irritating to skin and respiratory tract by inhalation. Harmful if swallowed.			
Carcinogenicity:	Not classified.			
Mutagenicity:	No relevant human or non-human information is available.			
Teratogenicity:	No human or non-human information is available.			
Developmental effects:	No human information is available.			
Fertility effects:	No known significant effects or critical hazards.			
Other information:	Not available			

SECTION 12: Ecological information

12.1 Toxicity				
Acute Toxicity				
Polyethylene is an essentially biological inert solid and considered to be non-toxic to the aquatic environment. It is stable and does not decompose in landfills or in aquatic systems.				
Product / Ingredient name	Result	Species/Medium	Exposure	
Polyethylene	LC50: Not provided	for freshwater fish:	-	
	LC50: Not provided	LC50 for marine water fish	-	
	EC50/LC50: Not provided	freshwater invertebrates	-	
	EC50/LC50: Not provided	freshwater algae	-	
	EC50/LC50: Not provided	freshwater invertebrates	-	
	EC50 (96 h): Not provided	algae and aquatic plants	-	
	EC10/LC1/NOEC: Not provided	aquatic micro-organisms	-	
Calculation of Predicted No Effect Concentration (PNEC):				
Product / Ingredient name	PNEC	Species/Medium	Assessment factor	Remarks
Polyethylene	Not provided	aqua: freshwater	-	-

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	Not provided	aqua: marine water	-	-
	Not provided	aqua: (intermittent releases)	-	-
	Not provided	sediment (freshwater)	-	-
	Not provided	Sediment (marine water)	-	-
	Not provided	soil	-	-
	Not provided	STP	-	-

Conclusion/summary: No information of other organisms is available.

12.2 Persistence and degradability

Essentially biologically inert and does not readily degrade. Under optimal oxidation conditions, >99% of Polyethylene will remain intact after exposure to microbial actions. Product will slowly change (embrittle) in the presence of sunlight, but will not fully breakdown. Product buried in landfill has been found to be stable over time. No toxic degradation products to aquatic and soil environment are known to be produced. Products of thermal decompositions disperse in the atmosphere.

Product / Ingredient name	Aquatic half-life	Photolysis	Potential
Polyethylene	not available	not available	not available

Conclusion/summary: No information is available

12.3 Bioaccumulative potential

Polyethylene dust, powder and pellets are possibly accumulative in living organisms (birds and aquatic life) causing injury and possible death due to starvation.

Product / Ingredient name	LogP _{ow}	BCF	Biodegradability
Polyethylene	not available	not available	Readily biodegradable

Conclusion/summary: No information is available

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc})	not available
Mobility	If released into watercourses, most polyethylene pellets float. Pellets are persistent in aquatic and terrestrial systems. Product should be recovered from water and land following spills. The material has not been found to migrate through soils.

12.5 Results of PBT and vPvB assessment

PBT:	P: not available B: not available T: not available the substance does not fulfill the PBT criteria
vPvB:	vP: Not available. vB: Not available. the substance does not fulfill the vPvB criteria.

12.6 Other adverse effects


No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).


13.1 Waste treatment methods

Product:	
Methods of disposal:	The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of non-recyclable products via a licensed waste disposal contractor. Disposal of this product, articles and any part thereof should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
Hazardous waste:	The classification of the product does not meet the criteria for a hazardous waste according to Directive 75/442/EEC.
Packaging:	
Methods of disposal:	The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
Special precautions:	This material and articles must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. If necessary, incinerate with waste heat recovery. Do NOT resort to UNCONTROLLED INCINERATION. Open burning of plastics at landfills is NOT acceptable.

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SECTION 14: Transport information				
	ADR	RID	IMDG	IATA/ICAO
14.1 UN number	Not regulated	Not regulated	Not regulated	Not regulated
14.2 UN proper shipping name	Not regulated	Not regulated	Not regulated	Not regulated
14.3 Transport hazard class(es)	Not regulated	Not regulated	Not regulated	Not regulated
14.4 Packing group	Not regulated	Not regulated	Not regulated	Not regulated
14.5 Environmental hazards	Not regulated	Not regulated	Not regulated	Not regulated
14.6 Special precautions for user	None	None	None	None
14.7 Additional information	None	None	None	None

SECTION 15: Regulatory information	
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	
EU Regulation (EC) No. 1907/2006 (REACH)	
Annex XIV - List of substances subject to authorization	
Substances of very high concern	
None.	
Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: Not applicable	
Other EU regulations	
Europe inventory:	The product is not classified according to Regulation (EC) No. 1272/2008 of the European Parliament and of the Council on Classification, Labelling and Packaging of Substances and Mixtures (CLP).
International regulations	
Chemical Weapons Convention List Schedule I Chemical:	Not listed
Chemical Weapons Convention List Schedule II Chemicals:	Not listed
Chemical Weapons Convention List Schedule III Chemicals:	Not listed
15.2 Chemical Safety Assessment	
This product contains substances for which Chemical Safety Assessments may still be required.	

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SECTION 16: Other information	
Indicates information that has changed from previously issued version.	
Abbreviations and acronyms:	ATE = Acute Toxicity Estimate CLP = Classification, Labeling and Packaging Regulation [Regulation (EC) No.1272/2008] DNEL = Derived No Effect Level PNEC = Predicted No Effect Concentration RRN = REACH Registration Number DNEL=Derived No Effect Level DMEL=Derived Minimum Effect Level DMEL=Derived Minimum Effect Level NOAEL= No Observable Adverse Effect Level N= Dangerous for the environmen
Full text of classifications[DSD/DPD]	None
Revision	1.8
Date of revision	2/6/2020
Date of previous issue	4/21/2019 (Revision 1.7)
DISCLAIMER:	The information is based on our current and best knowledge and is intended to describe the product for the purpose of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. Petro Rabigh makes no warranty of any kind, expressed or implied, regarding the accuracy of these data. Petro Rabigh assumes no responsibility for injury from the use of the product described herein.