Grene
ENVIRONMENTAL FRIENDLY PLASTIC BY ASRENE

Chandra Asri Petrochemical

Degradable High Density Polyethylene

Technical Data Sheet (TDS)

SF5008E — Degradable Film

Product Description:

Grene® SF5008E is an environmentally degradable HDPE resin which is supplied in natural pellet form and suitable for extrusion of a wide variety of degradable film applications requiring high physical strength with 2 years of typical shelf life.

Product Characteristics:

- Hexene copolymer
- High physical strength
- Thin film process-ability
- Typical shelf life: 2 years
- Same practice as conventional resin

Applications:

- Blown film
- Shopping bags and grocery bags
- Garbage bags
- Disposal bags
- Agriculture bags

Physical Properties	Test Method*	Unit	Value
Density	ASTM D 1505	g/cm^3	0.950
Melt Index (190 ^oC/2.16 kg)	ASTM D 1238	g/10 min	0.05
Melt Index (190 ^oC/21.6 kg)	ASTM D 1238	g/10 min	15
Flexural Modulus	ASTM D 790	MPa	1,100
Melting Point	ASTM D 3418	^oC	132
Brittleness Temperature	ASTM D 746	^oC	< -70
ESCR [F_{50}]	ASTM D 1693	Hrs	> 500

Film Properties (@20 micron, BUR = 3.8 : 1)		Test Method*	Unit	Value
Dart Drop Impact, F_{50}		ASTM D 1709	g	130
Elmendorf Tear Strength	MD/TD**	ASTM D 1922	kgf/cm	7/150
Film Impact Strength		ASTM D 3420	kgf.cm/mm	350
Young's Modulus	MD/TD**	ASTM D 882	MPa	850/1,050
Tensile Strength @Break	MD/TD**	ASTM D 882	MPa	100/55
Elongation @Break	MD/TD**	ASTM D 882	%	500/700

*Polyethylene tested per ASTM D 1928

**MD: Machine Direction; TD: Transverse Direction

Conversion: 1 MPa = 10.2 kgf/cm^2
1 kJ/m^2 = 0.01 $kgf.cm/mm^2$

Recommended Processing Conditions:

Melt Temperature……180-220 °C

Blow-up Ratio…...……3-5 °C

Product Available Form:

Natural pellet

Packaging:

25 kg in FFS PE-bag

Safety:

- The product is not classified as a hazardous material.
- Please refer to our Safety Data Sheet (SDS) for details on various aspects of safety, recovery and disposal of the product.

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Environment:

- This material degrades when subjected to sunlight, ultraviolet (UV), heat and mechanical stress.
- It can degrade when disposed in landfill without detriment to the environment.
- In landfill sites, **Grene® SF5008E** does not degrade to produce voids, does not emit dangerous degradation gases and does not contribute to groundwater pollution.

Storage:

- Product(s) should be stored in dry and dust free location at temperature below 50 °C and protected from direct sunlight and/or heat, well-ventilated area, away from incompatible materials, food and drink, as this may lead to quality deterioration, which results in odor generation and color changes and can have negative effects on the physical properties of this product.
- Keep packaging tightly closed and sealed until ready for use. Packaging that has been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled packaging. Use appropriate containment to avoid environmental contamination.
- The storage area should be stable and not be slopped.
- Please refer to our Safety Data Sheet (SDS) for detail storage and handling of the product.

Regulatory:

- This material complies with recommendations and statutory regulations regarding packaging materials intended to come in contact with foodstuff, such as:
  - FDA Regulation 21 CFR177.1520
  - Commission Regulation EU No.10/2011
  - BPOM Regulation No.HK 03.1.23.07.11.6664 on 2011
  - Halal Certificate The Indonesian Council of Ulama
  - SNI No. 7808:2012
- Please refer to our Regulatory Data Sheet (RDS) for details on various aspects of regulatory of the product.

Product Stewardship:

PT. Chandra Asri Petrochemical, Tbk. (CAP) has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our Product Stewardship philosophy by which we assess the safety, health and environmental information on our products and then take appropriate steps to protect employee, public health and environment. The success of our Product Stewardship program rests with each and every individual involved with CAP products –from the initial concept and research, to manufacture, storage, sale, use and disposal of each product.

Disclaimer:

The nominal properties reported herein are typical on the product of CAP but do not reflect normal testing variance and therefore should not to be construed as specifications.

CAP reserves the right to make any improvement or amendments to the composition of any grade or product without alteration to the product code.

This document reports accurate and reliable information to the best of our knowledge on the products manufactured by CAP. Since CAP cannot anticipate or control the conditions under which this information and its product may be used, each user should review the information in the specific context of the intended application. CAP will not be responsible for damages of any nature resulting from the use of or reliance upon the information.

This technical datasheet is effective as from **July 2016** and supersedes all data previously published.

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