

TECHNICAL DATA SHEET

Type:	Random Copolymer
Product Name:	ESENTTIA 45R60CD

Characteristics: High melt flow rate controlled rheology polypropylene random copolymer with very good optical properties and easy mold filling, fast cycle time, good impact resistance, with clarifying and mold release additives.

Recommended for: High clarity and good impact resistance injection molding housewares, thin walled injection molding package and general purpose applications where clarity is important.

Property	English Units	SI Units	ASTM Test
Melt Flow Index (230°C - 2,16 kg)	45,00 g/10 min	45,00 g/10 min	D-1238 B
Tensile yield strength (50 mm/min)	3.800 psi	26,2 MPa	D-638
Tensile yield elongation (50 mm/min)	13,5 %	13,5 %	D-638
Flexural modulus 1% secant (1,3 mm/min)	145.000 psi	999,7 MPa	D-790-1A
Notched Izod Impact strength (23°C/73°F)	0,95 ft-lb/in	50,7 J/m	D-256-A
Gardner impact strength (23 °C/73 °F)	300 in-lb	33,9 J	D-5420 A

@ Specimen Type I 3.2 mm thick injected according to ASTM D 4101 09. The values of properties registered above represent reference values and should be taken as a guide and not be interpreted as product specifications. Only the properties and values included in the Certificate of Analysis (CoA) are considered as a guarantee of the product. The values of Technical Data Sheet can be adjusted over time, ESENTTIA S.A. shall not be under a duty to notify you of any changes of them, therefore, we suggest you periodically request an update of the technical documentation that applies to our products, through any of the service channels described at end of this document.

IMPORTANT: Due to many factors that can affect the transformation processes and applications intended of our products by the customer, this information does not exempt the customers from carrying out its internal analyzes and tests, previously to acquire our products; neither does it imply any manifestation of legal responsibility for certain properties and use for a specific purpose. When our products are processed in conjunction with third-party materials, the customer will be responsible for obtaining all necessary information related to those materials and ensure that this combination is suitable for the desired purpose. Compliance with property rights and laws in force is the responsibility of those to whom we supply our products. ESENTTIA S.A. declines all responsibility derived directly or indirectly from the use of this information. ESENTTIA S.A. states not to know any defect in the product that affects the performance for its common uses. In any other situation, ESENTTIA S.A. will not be responsible for any hidden defect of the product. For storage conditions and product handling, please refer to our Product Use Manual, which is attached to the electronic invoice or you can consult it through the service channels described at the end of this document.

LIMITATIONS FOR MEDICAL APPLICATIONS: ESENTTIA S.A. does not endorse or claim the suitability of this product for specific medical applications. Manufacturers of medical devices or pharmaceutical products have the responsibility to determine that the ESENTTIA's products are safe, legal, and technically suitable for the intended use and has the responsibility to conduct the appropriate tests to determine suitability in the application, assuming all risk and liability arising from the use of the information and/or handling of any product. ESENTTIA DOES NOT MAKE ANY GUARANTEE OR WARRANTIES, EXPRESS OR IMPLIED, AS TO THE SUITABILITY OF ANY ESENTTIA'S PRODUCT FOR USE IN MEDICAL APPLICATIONS. For more information please contact us through the service channels described at the end of this document.

ESENTTIA products do not contain additives or other substances that can induce oxy-degradation of the polymer. The use of these additives with ESENTTIA products implies the immediate loss of the performance guarantee described in the Certificate of Analysis.

NOTE: For products used in food contact applications, you must request regulatory compliance information through any of the customer service channels described at the end of this document.

CUSTOMER SERVICE CHANNELS: website www.esenttia.co sign in with your username and password option Technical Assistance, phone-line (+57)(60)(1) 5960210, or sending your request to the email servicioalcliente@esenttia.co

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