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SS –79: 5205B HIGH DENSITY POLYETHYLENE STANDARD SPECIFICATION

1) **PRODUCT DESCRIPTION:** High density polyethylene homopolymer with basic stabilization. Ethylene is the only monomer used for producing the above grade; there are not used plasticizers or coloured masterbatches. The product has natural color

2) **APPLICATIONS:** Blow moulding for small dimensions hollow articles ,i.e. cans and containers up to 10 l.

3) **PROPERTIES:**

PROPERTIES	MU	LIMITS	TEST METHOD
ASPECT:	-	Granules in form of cylinder or parallelepiped with a max height of 6 mm, uniform color without extraneous matter.	VISUAL
CONTAMINATION(5)	%	max 0.15	VISUAL/GRAVIMETRIC
PHYSICAL			
Melt flow index (4) (190 °C/ 2.16 kg)	g/10min	0.15-0.350	ASTM D 1238
Melt flow index (4) (190 °C/ 5 kg)	g/10min	0.650-1.9	ASTM D 1238
Density(23 °C)(2,4)	g/cm^3	0.940-0.960	ISO 1183
Ash content(4)	%	max 0.08	ASTM D5630
Residual solvent content(4)	%	max 0.08	SR EN 13628/1
MECANICHAL			
Yield Strength(1,4) (23 °C, v=50mm/min)	MPa	min. 23	ISO 527/1,2
Yield Stress (1,4) (23 °C, v=50mm/min)	%	min. 9	ISO 527/1,2
IZOD impact strength(1,4) (23 °C, slotted specimen)	KJ/m^2	min. 25	ISO 180/A
THERMICAL			
ESCR (F50/50^{0}C/IGEPAL CA630 solution 10%)(2,4)	hours	min. 30	ASTM D1693
VICAT Softening temperature(2,3) (A - 50^{0}C/h-10N)	^{0}C	min. 115	ISO 306/A

Note:

1) The medium value of the mechanical properties is measured on standard samples made by injection process (ISO 3167/ ISO 294) conditioned according with ISO 291 requirements.
2) The average value for physical / thermal properties is measured on standard samples obtained by compression molding according with ASTM D4703C and conditioned according to ISO 291 requirements
3) Periodical tests.
4) Tests on lots.
5) Contamination: granules which do not comply with the appearance conditions, colored, expanded, unmelted, oxidizes, long and cluster granules

ADDITIONAL INFORMATIONS:

- The monomers and additives used to produce this product are accepted to be used in accordance with the requirements of Regulation 10/2011/EC, relating to plastic materials and articles intended to come into contact with foodstuffs.
- Processing information:
  - Recommended melt temperature: 180-230^{0}C;
  - Thermical profile recommended for blow molding: 190-230^{0}C depending on the type of equipment.

4) **QUALITY CONTROL**: Control is done on lots.
-Each lot will have max 150 tons. The lot will contain product of the same grade.
-During test operation, the product must comply all the parameters depicted in this standard specification.
-In case of litigation, the control of the quality will be done in the presence of the client representative, using the samples kept for those cases. The samples will be taken in accordance with the sampling procedure.

NOTE: All tests will be performed using the supplier's testing machines.

5) **SAMPLING PROCEDURE**:

- Sampling will be done continuously during the lot formation.
- The initial samples will be mixed in order to homogenize it and the quantity of sample will be reduced by the "quarter method" to around 2 kg.
- The bags containing the samples are sealed and labeled.

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NOTE: One sample is analyzed in the laboratory of the supplier, and the other will be kept three months after delivery, for control in case of litigation.

6) **DELIVERY:** CP4 Euro pallets (1375 kg /pallet), big-bags (1000 kg)

7) **GUARANTEE:** The product is guaranteed 3 months after delivery under the recommended "handling, transport and storage" conditions according to "SAFETY DATA SHEET"-MSDS-04.

8) **VALABILITY**: The product is guaranteed 12 months after production data, under the recommended "handling, transport and storage" conditions, according to MSDS-04 .The valability can be extended by a new inspection and evaluation of the quality.

9) **DOCUMENTS:** Certificate of conformity /Test report

10) **HANDLING, STORAGE AND TRANSPORT INFORMATION:** According to "SAFETY DATA SHEET" - MSDS - 04. If polymer is stored in conditions of high humidity and fluctuating temperatures, then atmospheric moisture can condensate inside the packing. In this case it is recommended to dry the pellets before use. During the storage, high density polyethylene should not be exposed to UV radiation. Producer does not take any responsibility for damage caused by inadequate storage.

11) **OTHER INFORMATIONS:**

The MSDS is available by Sales Marketing Rompetrol Refining offices for the customers. The MSDS contains necessary information in order to ensure customers' own safe in handling and processing activity.
The information below is related only to the delivered product.

Safety

High density polyethylene is an inert commercial polymer and under normal handling induces no hazard. Product storage must be in accordance with MSDS procedure. The working people should avoid skin or eyes contact with molten polymer. As a minimal precaution to prevent eyes injury, safety glasses are indicated.
Fabrication areas should be well ventilated. Workplace environments should be kept clean and free of dust.

Fire hazard

High density polyethylene is a combustible substance, but under normal storage conditions there is no ignition hazard. In contact with flame it becomes soft, flows, ignites and burns with a light flame until exhausting (if it isn't stabilized with a flame retardant agent). Therefore it has to be handled and stored avoiding contacts with open flames or other ignition sources. While burning, it releases high heat and a dense black smoke. In closed areas, fire fighters must use self-contained breathing apparatus.

Recycling

High density polyethylene is a recyclable material. It is recommended to recycle production rejects and wastes instead of disposal.

Disposal

Disposal of any wastes should respect all national and local valid regulations. The below information are related to High density polyethylene homopolymer/copolymer. The influence of the additives, fillers or other materials added by buyers must be taken into consideration using the related documentation. High density polyethylene homopolymer/copolymer can be disposed by inter or by controlled incineration, respecting valid regulations regarding gaseous emission or solid particles discharges. Due to the high level of heat enduced, incineration has to be done only in dedicated units. In case of interring: High density polyethylene is inert, does not degrade quickly, form a strong and permanent soil base and does not release gases or other compounds known to pollute water resources.

The mission assumed by Rompetrol Refining is to build a strong partnership supplier/customer. Assuming this purpose, Rompetrol Refining intents to offer products of high quality for satisfaction of all customers' needs and expectations, to keep permanently contact with clients in order to acknowledge processing troubleshooting, to ensure technical support to solve them, to develop new products for existing or potential markets. Rompetrol Refining recognizes community concerns regarding his potential impact activity on the environment and therefore encourages his customers to review their processes from the human health and environment point of view. In order to prevent using the products in manners for which they are not intended or tested, Rompetrol Refining offer to its customers product literature, including suitable Material Safety Data Sheet, that should be consulted prior to use its products.

NOTE: We do not undertake any responsability or liability for using Rompetrol Refining *products for other purposes than the ones recommended in this standard specification. It is the customer's responsibility to inspect and test our products in order to assure himself as to their suitability for his intended use*.

NOTE REGARDING MEDICAL APPLICATION RESTRICTIONS: Rompetrol Refining *does not recommend any company product for applications that involve human tissues or internal fluids contacts - regardless of the contact length of time, for cardiac devices, for medical device components that support human life, as well as for applications that have connections with human reproduction*.

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