

## SABIC® VESTOLEN A RELY 5933RD 10000 BLACK

HIGH DENSITY POLYETHYLENE

### DESCRIPTION

SABIC® Vestolen A RELY 5933RD 10000 is a grade which has a high density and a bimodal distribution of the molecular mass. Due to its resistance against slow crack growth (SCG) the material SABIC® Vestolen A RELY 5933RD 10000 may be used for no dig applications. Moreover it may be used for the production of thick walled (large diameter and low SDR) pipes for infrastructure and industrial application due to its low sagging characteristics and it shows favorable processing behavior.

SABIC® Vestolen A RELY 5933RD 10000 is typically used for potable water pipe systems where improved resistance to chlorinated disinfectants is desired.

This material meets (inter)national standards for use in gas, drinking water and waste water piping. MRS class ISO 12162 MPa = 10.0 (PE 100).

This product is not intended for and must not be used in any pharmaceutical/medical applications.

### TYPICAL PROPERTY VALUES

Revision 20260216

| PROPERTIES                                        | TYPICAL VALUES | UNITS   | TEST METHODS |
|---------------------------------------------------|----------------|---------|--------------|
| <b>POLYMER PROPERTIES</b>                         |                |         |              |
| Colour                                            | Black          | -       | -            |
| RAL number                                        | 9004           | -       | -            |
| Melt Flow Rate (MFR)                              |                |         |              |
| at 190 °C and 5 kg                                | 0.2            | dg/min  | ISO 1133     |
| Carbon black content                              | 2.25           | %       | ISO 6964     |
| Density                                           | 959            | kg/m³   | ASTM D1505   |
| <b>MECHANICAL PROPERTIES</b>                      |                |         |              |
| <b>Tensile test</b> <sup>(1) (2)</sup>            |                |         |              |
| stress at yield                                   | 24             | MPa     | ISO 527-2    |
| strain at yield                                   | 9              | %       | ISO 527-2    |
| tensile modulus                                   | 1100           | MPa     | ISO 527-2    |
| <b>Charpy Impact Strength Notched</b>             |                |         |              |
| at 23 °C                                          | 26             | kJ/m²   | ISO 179/1eA  |
| at -30 °C                                         | 10             | kJ/m²   | ISO 179/1eA  |
| Hardness Shore D                                  | 62             | -       | ISO 868      |
| ESCR (Strain Hardening), Gp <sup>(3)</sup>        | >50            | MPa     | SABIC method |
| MRS classification                                | 10             | MPa     | ISO 12162    |
| OIT 210 °C                                        | >20            | Minutes | ISO 11357-6  |
| <b>THERMAL PROPERTIES</b>                         |                |         |              |
| <b>Heat deflection temperature</b>                |                |         |              |
| at 1.80 MPa (HDT/A)                               | 45             | °C      | ISO 75-2     |
| at 0.45 MPa (HDT/B)                               | 72             | °C      | ISO 75-2     |
| <b>Vicat Softening Temperature</b> <sup>(4)</sup> |                |         |              |
| at 50 N (VST/B)                                   | 72             | °C      | ISO 306      |
| <b>DSC test</b>                                   |                |         |              |
| melting point                                     | 124 – 128      | °C      | DIN 53765    |



- (1) Test specimen according to ISO 527-2 type 1BA, thickness 2 mm
- (2) Speed of testing: 50 mm/min
- (3) Publication in Science Direct, Polymer no. 46 (2005) 6369-6379
- (4) Conditioning of test specimen: temp. 23 °C, relative humidity 50 %, 24 hours

### STORAGE AND HANDLING

Polyethylenes resins (in pelletised or powder form) should be stored in such a way that it prevents exposure to direct sunlight and/or heat, as this may lead to quality deterioration. The storage location should also be dry, dust free and the ambient temperature should not exceed 50 °C. Not complying with these precautionary measures can lead to a degradation of the product which can result in colour changes, bad smell and inadequate product performance. It is also advisable to process polyethylene resins (in pelletised or powder form) within 6 months after delivery, this because also excessive aging of polyethylene can lead to a deterioration in quality.

### ENVIRONMENT AND RECYCLING

The environmental aspects of any packaging material do not only imply waste issues but have to be considered in relation with the use of natural resources, the preservations of foodstuffs, etc. SABIC considers polyethylene to be an environmentally efficient packaging material. Its low specific energy consumption and insignificant emissions to air and water designate polyethylene as the ecological alternative in comparison with the traditional packaging materials. Recycling of packaging materials is supported by SABIC whenever ecological and social benefits are achieved and where a social infrastructure for selective collecting and sorting of packaging is fostered. Whenever 'thermal' recycling of packaging (i.e. incineration with energy recovery) is carried out, polyethylene -with its fairly simple molecular structure and low amount of additives- is considered to be a trouble-free fuel.

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