

Product Information

# VESTAMID® E62-S1

## HEAT-STABILIZED COMPOUND BASED ON POLYAMIDE 12 ELASTOMER FOR MOLDING OF SPORT SHOE SOLES

**VESTAMID® E62-S1** is a PA 12 elastomer consisting of PA 12 segments and softening segments. The material is free of volatile or migrating plasticizer.

The VESTAMID® E represent thermoplastic elastomers generically characterized as polyether block copolyamides (PEBA) consisting of PA 12 and polyether segments.

VESTAMID® E62-S1 is especially developed for sport shoe soles. It has good impact strength at low temperatures.

VESTAMID® E62-S1 is supplied as cylindrical pellets in moisture-proof packaging, ready for processing.

The process temperatures should be within a range of 190°C – 230°C.

Pigmentation may affect values.

Inside the original and undamaged packaging, the product has a shelf life of at least 2 years when stored in dry rooms at temperatures not exceeding 30°C.

### Key Features

#### Industrial Sector

Sustainable, Industry and Engineering, Sports and Lifestyle

#### Sustainability

Sustainable electricity

#### Processing

Injection molding

#### Delivery form

Pellets, Granules

#### Optics

Translucent

#### Resistance to

Hydrolysis / hot water, Wear / abrasion, Fatigue resistance

#### Additives

Unfilled

| LCA-values                                      | dry                             | Unit                      | Test Standard    |
|---|---------------------------------|---------------------------|------------------|
| LCA name of certificate                         | <a href="#">VESTAMID® E mix</a> | -                         | ISO 14040, 14044 |
| LCA certifier                                   | <a href="#">TÜV Rheinland</a>   | -                         | ISO 14040, 14044 |
| Blue water consumption                          | <b>14.2</b>                     | kg                        | ISO 14040, 14044 |
| Global Warming Potential incl. bio. C incl. LUC | <b>6.5</b>                      | kg CO <sub>2</sub> eq./kg | ISO 14040, 14044 |
| Global Warming Potential excl. bio. C incl. LUC | <b>6.5</b>                      | kg CO <sub>2</sub> eq./kg | ISO 14040, 14044 |
| Land use (ReCiPe 2016)                          | <b>0</b>                        | Annual crop eq. y         | ISO 14040, 14044 |
| GWP savings as compared to 2023 reference       | <b>-1.6</b>                     | kg CO <sub>2</sub> eq./kg | ISO 14040, 14044 |

| Mechanical properties ISO                  | dry / cond       | Unit                 | Test Standard |
|--|------------------|----------------------|---------------|
| Tensile modulus                            | <b>56400 / -</b> | psi                  | ISO 527       |
| Tensile strength                           | <b>3340 / -</b>  | psi                  | ISO 527       |
| Yield stress                               | <b>3340 / -</b>  | psi                  | ISO 527       |
| Yield strain                               | <b>32 / -</b>    | %                    | ISO 527       |
| Stress at 50% strain                       | <b>3340 / -</b>  | psi                  | ISO 527       |
| Stress at break                            | <b>5800 / -</b>  | psi                  | ISO 527       |
| Nominal strain at break, tB                | <b>270 / -</b>   | %                    | ISO 527       |
| Charpy impact strength, +23°C              | <b>N / -</b>     | ftlb/in <sup>2</sup> | ISO 179/1eU   |
| Charpy impact strength, -30°C              | <b>N / -</b>     | ftlb/in <sup>2</sup> | ISO 179/1eU   |
| Charpy notched impact strength, +23°C      | <b>57.6 / -</b>  | ftlb/in <sup>2</sup> | ISO 179/1eA   |
| Type of failure                            | <b>P / -</b>     | -                    | -             |
| Charpy notched impact strength, -30°C      | <b>3.81 / -</b>  | ftlb/in <sup>2</sup> | ISO 179/1eA   |
| Type of failure                            | <b>C / -</b>     | -                    | -             |
| Flexural modulus, 23°C                     | <b>53100 / -</b> | psi                  | ISO 178       |
| Flexural stress at conv. deflection, 23°C  | <b>1890 / -</b>  | psi                  | ISO 178       |
| Flexural strength, 23°C                    | <b>2760 / -</b>  | psi                  | ISO 178       |
| Flexural strain at flexural strength, 23°C | <b>9 / -</b>     | %                    | ISO 178       |

| Thermal properties                          | dry / cond | Unit | Test Standard  |
|---|------------|------|----------------|
| Melting temperature                         | 342 / *    | °F   | ISO 11357-1/-3 |
| Glass transition temperature, DSC           | 50 / *     | °F   | ISO 11357-1/-2 |
| Temp. of deflection under load A, 1.80 MPa  | 113 / *    | °F   | ISO 75-1/-2    |
| Temp. of deflection under load B, 0.45 MPa  | 212 / *    | °F   | ISO 75-1/-2    |
| Vicat softening temperature A, 10 N, 50 K/h | 329 / *    | °F   | ISO 306        |
| Vicat softening temperature B, 50 N, 50 K/h | 230 / *    | °F   | ISO 306        |
| Melting Temperature                         | 342        | °F   | ASTM D 3418    |

| Physical properties | dry / cond            | Unit              | Test Standard  |
|---------------------|-----------------------|-------------------|----------------|
| Density             | 1.03 / -              | g/cm <sup>3</sup> | ISO 1183       |
| Water absorption    | 1.1 / *               | %                 | Sim. to ISO 62 |
| Humidity absorption | 0.5 / *               | %                 | Sim. to ISO 62 |
| Shore D hardness    | 61 <sup>[b]</sup> / - | -                 | ISO 7619-1     |
| Density             | 1.03                  | g/cm <sup>3</sup> | ASTM D 792     |

b: 3 seconds

| Electrical properties                       | dry / cond   | Unit   | Test Standard |
|---|--------------|--------|---------------|
| Volume resistivity, V                       | 2E10 / 2.5E9 | Ohm*m  | IEC 62631-3-1 |
| Surface resistivity, C, circular electrodes | - / 3E13     | Ohm/sq | IEC 62631-3-2 |
| Relative permittivity, 100Hz                | 9 / -        | -      | IEC 62631-2-1 |
| Relative permittivity, 1MHz                 | 4 / -        | -      | IEC 62631-2-1 |
| Dissipation factor, 100Hz                   | 1000 / -     | E-4    | IEC 62631-2-1 |
| Dissipation factor, 1MHz                    | 1200 / -     | E-4    | IEC 62631-2-1 |

| Rheological properties     | dry / cond | Unit                   | Test Standard |
|----------------------------|------------|------------------------|---------------|
| Melt volume-flow rate, MVR | 20 / *     | cm <sup>3</sup> /10min | ISO 1133      |
| Temperature                | 240 / *    | °C                     | -             |
| Load                       | 2.16 / *   | kg                     | -             |

## VESTAMID®

|                             |                |    |                 |
|-----------------------------|----------------|----|-----------------|
| Molding shrinkage, parallel | <b>0.8 / *</b> | %  | ISO 294-4, 2577 |
| Molding shrinkage, normal   | <b>1.4 / *</b> | %  | ISO 294-4, 2577 |
| Mold temperature            | <b>95 / *</b>  | °F | -               |
| Melt temperature            | <b>392 / *</b> | °F | -               |

| <b>Test specimen production</b>       | <b>dry</b>  | <b>Unit</b> | <b>Test Standard</b> |
|---------------------------------------|-------------|-------------|----------------------|
| Injection Molding, melt temperature   | <b>428</b>  | °F          | ISO 294              |
| Injection Molding, mold temperature   | <b>95</b>   | °F          | ISO 294              |
| Injection Molding, injection velocity | <b>7.87</b> | in/s        | ISO 294              |

### Characteristics

#### Additives

Heat stabilizer