

# Stanyl<sup>®</sup> HGR2

## (PA46+PTFE)

Heat Stabilized, Wear and Friction Modified

Print Date: 2026-04-09

Stanyl<sup>®</sup> HGR2 is a friction-modified high heat polyamide designed for friction-reduction in valve timing-chain systems that offers excellent wear & friction properties in combination with low friction.

| PROPERTIES                      | TYPICAL DATA      | UNIT | TEST METHOD       |
|---------------------------------|-------------------|------|-------------------|
| <b>RHEOLOGICAL PROPERTIES</b>   |                   |      |                   |
|                                 | <b>DRY / COND</b> |      |                   |
| Molding shrinkage [parallel]    | 2 / *             | %    | Sim. to ISO 294-4 |
| Molding shrinkage [normal]      | 2 / *             | %    | Sim. to ISO 294-4 |
| <b>MECHANICAL PROPERTIES</b>    |                   |      |                   |
|                                 | <b>DRY / COND</b> |      |                   |
| Tensile modulus                 | 3100 / 900        | MPa  | ISO 527-1/-2      |
| Tensile modulus (120°C)         | 770 / -           | MPa  | ISO 527-1/-2      |
| Tensile modulus (160°C)         | 650               | MPa  | ISO 527-1/-2      |
| Tensile modulus (180°C)         | 600               | MPa  | ISO 527-1/-2      |
| Tensile modulus (200°C)         | 560               | MPa  | ISO 527-1/-2      |
| Yield stress                    | 90 / 50           | MPa  | ISO 527-1/-2      |
| Yield stress (120°C)            | 45                | MPa  | ISO 527-1/-2      |
| Yield stress (160°C)            | 40                | MPa  | ISO 527-1/-2      |
| Yield stress (180°C)            | 35                | MPa  | ISO 527-1/-2      |
| Yield stress (200°C)            | 30                | MPa  | ISO 527-1/-2      |
| Nominal strain at break         | 25 / >50          | %    | ISO 527-1/-2      |
| Nominal strain at break (120°C) | >50               | %    | ISO 527-1/-2      |
| Nominal strain at break (160°C) | >50               | %    | ISO 527-1/-2      |
| Nominal strain at break (180°C) | >50               | %    | ISO 527-1/-2      |
| Nominal strain at break (200°C) | >50               | %    | ISO 527-1/-2      |
| Flexural modulus                | 2900 / -          | MPa  | ISO 178           |
| Flexural strength               | 120 / -           | MPa  | ISO 178           |

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## Property Data

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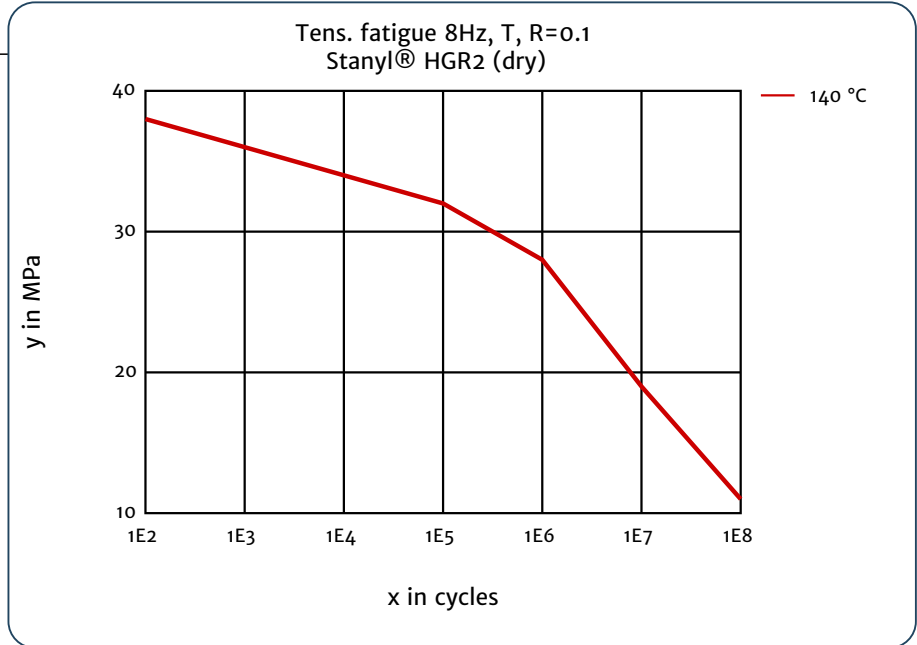
| <i>PROPERTIES</i>                            | <i>TYPICAL DATA</i> | <i>UNIT</i>              | <i>TEST METHOD</i>     |
|--|---------------------|--------------------------|------------------------|
| Charpy impact strength (+23°C)               | N / N               | kJ/m <sup>2</sup>        | ISO 179/1eU            |
| Charpy impact strength (-30°C)               | 150 / N             | kJ/m <sup>2</sup>        | ISO 179/1eU            |
| Charpy notched impact strength (+23°C)       | 9 / 15              | kJ/m <sup>2</sup>        | ISO 179/1eA            |
| Charpy notched impact strength (-30°C)       | 6 / 6               | kJ/m <sup>2</sup>        | ISO 179/1eA            |
| Izod notched impact strength (+23°C)         | 8.5 / -             | kJ/m <sup>2</sup>        | ISO 180/1A             |
| <b><i>THERMAL PROPERTIES</i></b>             |                     | <b><i>DRY / COND</i></b> |                        |
| Melting temperature (10°C/min)               | 295 / *             | °C                       | ISO 11357-1/-3         |
| Temp. of deflection under load (1.80 MPa)    | 190 / *             | °C                       | ISO 75-1/-2            |
| Temp. of deflection under load (0.45 MPa)    | 290 / *             | °C                       | ISO 75-1/-2            |
| Coeff. of linear therm. expansion (parallel) | 0.69 / *            | E-4/°C                   | ISO 11359-1/-2         |
| Coeff. of linear therm. expansion (normal)   | 0.76 / *            | E-4/°C                   | ISO 11359-1/-2         |
| Thermal Index 5000 hrs                       | 152                 | °C                       | IEC 60216/ISO 527-1/-2 |
| <b><i>OTHER PROPERTIES</i></b>               |                     | <b><i>DRY / COND</i></b> |                        |
| Humidity absorption                          | 3.2 / *             | %                        | Sim. to ISO 62         |
| Density                                      | 1260 / -            | kg/m <sup>3</sup>        | ISO 1183               |

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Tens. fatigue 8Hz, T, R=0.1 ,  
dry



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