

## Empera 332N

### General properties

Empera 332N is a general purpose polystyrene grade offering very good overall strength and improved heat resistance.

### Physical properties (typical values)

| Property                                    | Value                | Unit                    | Standard   | Method      |
|---|----------------------|-------------------------|------------|-------------|
| Volume melt-flow rate MVR                   | 3.7                  | cm <sup>3</sup> /10 min | ISO 1133   | 200 °C/5 kg |
| Vicat softening temperature VST             | 91                   | °C                      | ISO 306    | B50/oil     |
| Charpy impact strength at 23 °C             | 15                   | kJ/m <sup>2</sup>       | ISO 179    | 1eU         |
| Tensile stress at break                     | 55                   | MPa                     | ISO 527-2  | 50 mm/min   |
| Nominal strain at break                     | 3                    | %                       | ISO 527-2  | 50 mm/min   |
| Tensile modulus                             | 3300                 | MPa                     | ISO 527-2  | 1 mm/min    |
| Flexural strength                           | 100                  | MPa                     | ISO 178    | 2 mm/min    |
| Ball indentation hardness H                 | 150                  | N/mm <sup>2</sup>       | ISO 2039-1 | 358 N/30 s  |
| Density                                     | 1040                 | kg/m <sup>3</sup>       | ISO 1183   |             |
| Water absorption (after 24 h)               | < 0.1                | %                       | ISO 62     |             |
| Temp. of deflection under load HDT/A        | 84                   | °C                      | ISO 75-2   | 1.8 MPa     |
| Thermal conductivity                        | 0.16                 | W/m·K                   | DIN 52 612 |             |
| Mean therm. coefficient of linear expansion | 0.8·10 <sup>-4</sup> | K <sup>-1</sup>         | DIN 53 752 | (23 - 80)°C |
| Processing shrinkage                        | 0.4-0.6              | %                       | ISO 294-4  |             |

### Processing

Empera 332N can be processed by all methods normally used for polystyrene. The preferred mode is injection moulding. For extrusion to sheets for thermoforming, Empera 332N is blended with high impact polystyrene grades, e.g. Empera 622N.

### Examples of application

CD-boxes, cosmetic packs, medical articles, refrigerator vegetable compartments, vending machine cups.

### Supply form

Empera 332N can be supplied in two versions, without or with an external additive for improving pneumatic conveying. "L" as a suffix to the grade designation characterises the version with this agent, i.e. Empera 332L. Empera 332N is supplied as cylindrical pellets, packed in 25 kg bags or bulk.

**Regulatory Compliance**

On request, we will be happy to provide you with Regulatory Compliance Statements (RCSs) that affirm our products' conformity to various EU Directives, including food contact. Standard RCSs are available for Directives on RoHS (Return of Hazardous Substances), WEEE (Waste Electrical and Electronic Equipment), Packaging Waste et al. We can also provide Declarations confirming the absence of heavy metals and a range of other substances subject to restrictions under EU Marketing and Use Directives, or prohibited under national laws and Company Standards. Please contact us for up-to-date regulatory information on any of our products.

**Food Contact Compliance Statement**

Please be informed that Empera 332N complies with the following positive lists/ approvals for food-contact materials and articles:

**EU (European Union):** Directive 2002/72/EC as amended, Annex II (monomers), Section A, and Annex III (incomplete list of additives).

Manufacturers using the above product for the fabrication of finished products intended to come into contact with food are responsible for compliance by adequate testing or recognised model calculations (eg. MigraPass). They are also required to comply with the general regulatory requirement that these products do not bring about an unacceptable change in the composition of the foodstuffs or a deterioration in the organoleptic characteristics thereof.

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