

## LATENE 7H2W-V0

Polypropylene homopolymer (PPh) based compound.

Heat stabilised. Metal stabilised. UL94 V-0 classified, free of halogens-based flame retardants and red phosphorous. Low smoke density and low toxicity index.

| PHYSICAL PROPERTIES               | STANDARD    | VALUE MEASURE UNITS    |
|-----------------------------------|-------------|------------------------|
| Density                           | ISO 1183    | 1.01 g/cm <sup>3</sup> |
| Linear shrinkage at moulding      |             |                        |
| Longitudinal (2.0mm/60MPa)        | ISO 294-4   | 1.20 ÷ 1.50 %          |
| Transversal (2.0mm/60MPa)         | ISO 294-4   | 1.20 ÷ 1.50 %          |
| Dimensional stability             | ---         | 70                     |
| Moisture absorption (in air)      |             |                        |
| after 24hrs                       | ISO 62-4    | 0.07 %                 |
| MECHANICAL PROPERTIES             | STANDARD    | VALUE MEASURE UNITS    |
| CHARPY impact strength            |             |                        |
| Unnotched, at +23°C               | ISO 179-1eU | 25.0 kJ/m <sup>2</sup> |
| Unnotched, at -20°C               | ISO 179-1eU | 20.0 kJ/m <sup>2</sup> |
| Notched, at +23°C                 | ISO 179-1eA | 2.0 kJ/m <sup>2</sup>  |
| Notched, at -20°C                 | ISO 179-1eA | 0.8 kJ/m <sup>2</sup>  |
| Tensile elongation                |             |                        |
| At yield (5 mm/min), 23°C         | ISO 527 (1) | 5.0 %                  |
| At yield (5 mm/min), 60°C         | ISO 527 (1) | >10.0                  |
| At yield (5 mm/min), 90°C         | ISO 527 (1) | >10.0                  |
| At break (5 mm/min), 23°C         | ISO 527 (1) | 20.0 %                 |
| At break (5 mm/min), 60°C         | ISO 527 (1) | >100.0                 |
| At break (5 mm/min), 90°C         | ISO 527 (1) | >100.0                 |
| Tensile strength                  |             |                        |
| At yield (5 mm/min), 23°C         | ISO 527 (1) | 20 MPa                 |
| At yield (5 mm/min), 60°C         | ISO 527 (1) | 10 MPa                 |
| At yield (5 mm/min), 90°C         | ISO 527 (1) | 7 MPa                  |
| At break (5 mm/min), 23°C         | ISO 527 (1) | 15 MPa                 |
| At break (5 mm/min), 60°C         | ISO 527 (1) | NB                     |
| At break (5 mm/min), 90°C         | ISO 527 (1) | NB                     |
| Elastic modulus                   |             |                        |
| Tensile (speed 1 mm/min), at 23°C | ISO 527 (1) | 1800 MPa               |
| Tensile (speed 1 mm/min), at 60°C | ISO 527 (1) | 800 MPa                |
| Tensile (speed 1 mm/min), at 90°C | ISO 527 (1) | 500 MPa                |

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| THERMAL PROPERTIES                                    | STANDARD       | VALUE MEASURE UNITS |
|-------------------------------------------------------|----------------|---------------------|
| <b>Coefficient of linear thermal expansion (CLTE)</b> |                |                     |
| +30°C to +100°C (longitudinal)                        | ISO 11359-2    | 80 µm/(m·°C)        |
| <b>VICAT - Softening point</b>                        |                |                     |
| 50 N (heating rate 50°C/h)                            | ISO 306        | 100 °C              |
| <b>HDT - Heat Deflection Temperature</b>              |                |                     |
| 0.45 MN/m <sup>2</sup>                                | ISO 75         | 110 °C              |
| 1.81 MN/m <sup>2</sup>                                | ISO 75         | 65 °C               |
| <b>C.U.T. - Continuous Use Temperature</b>            |                |                     |
| Long period (20,000h)                                 | ---            | 100 °C              |
| FLAMMABILITY                                          | STANDARD       | VALUE MEASURE UNITS |
| <b>Oxygen Index</b>                                   | ASTM D 2863    | 33 %                |
| <b>Flammability rating</b>                            |                |                     |
| 3.00 mm thickness                                     | UL 94          | V-0                 |
| 1.50 mm thickness                                     | UL 94          | V-0                 |
| 0.75 mm thickness                                     | UL 94          | V-2                 |
| <b>GWFI - Glow Wire Flammability Index</b>            |                |                     |
|                                                       | IEC 60695-2-12 | 960°C/1mm           |
|                                                       | IEC 60695-2-12 | 960°C/2mm           |
| <b>GWIT - Glow Wire Ignition Test</b>                 |                |                     |
|                                                       | IEC 60695-2-13 | 825°C/1mm           |
|                                                       | IEC 60695-2-13 | 825°C/2mm           |
| ELECTRICAL PROPERTIES                                 | STANDARD       | VALUE MEASURE UNITS |
| <b>CTI - Comparative Tracking Index</b>               |                |                     |
| solution A (without surfactant)                       | IEC 60112      | 600 V               |

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### MATERIAL - STORAGE

Sealed, undamaged packages has to be kept in dry storage facilities, providing they are also able to protect them from weather and accidental damage.

### HANDLING AND SAFETY

Detailed information about a safe treatment of the material are indicated in the "Material Safety Data Sheet" (MSDS) furnished with the first material supply. The MSDS may be also sent again in case of loss.

### PREDRYING CONDITIONS

At least 3 hours at  $80 \div 90^{\circ}\text{C}$

These are the suggested conditions to reduce the moisture content to adequate levels. Temperature and drying time can be reduced by using vacuum ovens. Particularly wet material may need a longer drying time.

### ACTUAL MELT TEMPERATURE

$180 \div 210^{\circ}\text{C}$

The injection moulding machine settings needed to obtain the suggested melt temperature will depend greatly on shot size and machine capacity, as well as other moulding parameters such as: injection speed, screw RPM, back pressure, etc. On small machines, running short cycles, it is possible to use higher melt temperatures to improve plastification, fluidity and surface appearance, paying attention to any indication of material degradation.

### MOULD TEMPERATURE

$20 \div 40^{\circ}\text{C}$

The mould temperature suggested above is the actual tool steel temperature. This can be significantly different from the tool settings, due to the cooling system efficiency and the accuracy of the temperature control on the tool.

### INJECTION SPEED

Medium

The advisable injection speed greatly depends on cavity geometry and injection moulding machine size. The use of high injection speed can improve the surface appearance, but it can also cause outgassing and burn marks due to overheating through shear stress.

### REGRIND USAGE

The use of regrind is possible, but should be assessed on the basis of the project, moulding parameters, and type of grinding used. The effect of using regrind on material properties must be evaluated by the customer on its specific project and process. High percentages of regrind may cause a reduction in viscosity, reducing mechanical properties, first resilience. According to UL guideline, up to 25% of regrind is permitted, without affecting the ratings of the yellow card. However, LATI suggests that no more of 15% of regrind is used.

### HOT RUNNER MOULDS

Hot runner moulds are not recommended, but they may be used when a very tight temperature control is assured, overall in the gate(s), and the cycle time is short.

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### TO AVOID

In order to prevent any material degradation, over-dimensioned machines should be avoided.

### EQUIPMENT WEAR/CORROSION

Usually, critical processing conditions (high injection rate, high back pressure and high screw rotating speed, etc.) and/or disadvantageous geometric conditions (low wall thickness, low diameters, sharp fillet radius, etc.) generate wear on equipment. Wear increases in case of filled materials (particularly fibre filled ones). Appropriate equipment surface treatments are suggested in these cases, as well as a proper venting to avoid material overheating. Compound containing flame retardant additives are, in general, more aggressive than standard versions. Therefore, steels with a high chrome percentage and/or with a specific surface treatment (e.g. Chrome or Nickel electroplating) are suggested.

### APPROVALS

USA (UL): Product versions approved according UL recommendations are available.  
Please, check our site or contact LATI for details.

### NOTES

**The products mentioned herein are not suitable for applications in contact with foodstuff or for potable water transportation, or for toy manufacturing. The products mentioned herein are not suitable for applications in the pharmaceutical, medical or dental sector. The products mentioned herein must not be used to produce parts operating in hot (>70°C), very humid environments, or in contact with hot water, or in contact with overheated steam.**

### CONTACTS

**LATI Industria Termoplastici S.p.A.**