

Technical datasheet for: epsotech PS HS1 EC

Overview and Structure

epsotech PS HS1 EC is a single or multi-layer product made High Impact Polystyrene (HIPS), with a standard semi-matt surface aspect.

This product is designed for high sensitivity electronics handling and packaging, independent of atmospheric humidity.

Typical Physical Properties

| Property | Value | Unit | Standard | Test Method |
|-------------------------------|------------------------------------|-------------------|----------|-----------------------------------|
| GENERAL PROPERTIES: | | | | |
| Density* | 1.10 | g/cm ³ | ISO 1183 | - |
| MECHANICAL PROPERTIES: | | | | |
| Tensile Modulus | - | MPa | ISO 527 | 23°C |
| Yield stress | 20 | MPa | ISO 527 | 23°C |
| Elongation at break | 25 | % | ISO 527 | 23°C |
| Charpy (notched) | 7 | KJ/m ² | ISO 179 | 23°C, 1eA |
| Charpy (notched) | - | KJ/m ² | ISO 179 | -30°C, 1eA |
| THERMAL PROPERTIES: | | | | |
| VICAT softening Point | 100 | °C | ISO 306 | b/50 |
| HDT-A | 66 | °C | ISO 75 | A 1.8 MPa un-annealed |
| UV STABILISATION: | | | | |
| UV Stabilisation | Optional | - | - | According to customer requirement |
| BURNING BEHAVIOUR: | | | | |
| Burning Rate** | | | | |
| Flammability Rating | | | | |
| SURFACE/VOLUME: | | | | |
| Surface Resistivity Ivl 1 | 10 ⁹ - 10 ¹⁰ | Ω/sq | EN 61340 | 5-3 |
| Volume Resistivity Ivl 1 | 10 ² - 10 ⁴ | Ω/sq | EN 61340 | 5-3 |
| Surface Resistivity Ivl 2 | 10 ⁵ - 10 ⁶ | Ω/sq | EN 61340 | 5-3 |
| Volume Resistivity Ivl 2 | 10 ⁴ - 10 ⁶ | Ω/sq | EN 61340 | 5-3 |
| MISCELLANEOUS: | | | | |
| Mould Shrinkage | 0.5 - 0.7 | % | - | - |
| Thermoforming Temperature | 180 – 210 | °C | - | - |

Unless otherwise stated, products are tested at a typical thickness of 4mm

¹ The impact values stated indicate the range that this grade meets and depends on thickness of the sheet, plus actual material grades selected in each layer for every customer's project – typically customised. Mechanical suitability for each formulation should be evaluated based on the material delivered.

* The density quoted should only be used as a guide. This value can change depending upon the type and quantity of pigments or additives used.

** Fire behaviour values given by raw material supplier or by indicative test on raw material. Not intended as a specification.

Supplemental Information

Chemical Contact and cleaning

| Reagent | Chemical resistance | | Reagent | Chemical resistance |
|-----------------|---------------------|--|----------------------|---------------------|
| Acetone | Poor | | Chloroform | Poor |
| Acid – (Weak) | Very Good | | Citric Acid Solution | Good |
| Acid – (Strong) | Poor | | Common Salt | Excellent |
| Apple Juice | Very Good | | Detergents | Good |
| Beef Fat | Very Good | | Dairy Products | Good |
| Butter | Good | | Diesel | Poor |
| Base (Weak) | Excellent | | Ethyl Alcohol | Good |
| Base (Strong) | Poor | | Fertilisers | Good |
| Carrot Juice | Excellent | | Petrol | Poor |

Chemical resistance is influenced by many factors, including concentration, temperature, exposure time and material stress. Therefore the data should only be used as a guide.

Most common mild soaps or detergents dissolved in warm water can be used to effectively clean general dirt and surface contaminants, but in all cases should be objectively tested. Abrasive products will damage the surface.

Storage and Drying

Long storage times in humid conditions may require a product to be dried, e.g. 80°C for 2 hours +1hr per additional mm of thickness. Space must be left between sheets to allow correct drying.

Dimensional Tolerances

Standard tolerances are subject to the local standard tolerance set. Extra tolerance requirements may be possible on request and by special agreement

Product Modification

Product code nomenclature takes in to account selected primary features of a product. The suffix may indicate a primary additional functionality, however, further multiple modifications are almost always possible and may be agreed upon and specified prior to our technical and commercial offer. Such enhancements are a normal part of our service capability and they do not affect the general characteristics listed in technical datasheets.

Disclaimer:

Suitability for use - epsotech sells thermoplastic sheet and monofilament products. The above information describes the basic features of our products. However, these are largely influenced by their specific application, the application environment, final processing and the customer's intended usage. We recommend that in each case the suitability of our products for the intended usage is thoroughly listed and evaluated. We do not give any warranty or guarantee for any particular quality required by a customer or for the usability of our products in any particular customer environment. epsotech will under no circumstance be liable for wear and tear, for damages resulting from disregard of product instructions – including those contained in this technical data sheet – operating instructions, disregard of other instructions, misuse, alteration or unauthorised repairs or processing. All deliveries shall be subject to the Terms and Conditions of the Seller.

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