

## Technical datasheet for: epsotech PS HS1 V2

### Overview and Structure

epsotech PS HS1 V2 is a single layer sheet product made from High Impact Polystyrene (HIPS), with a modified fire behaviour tested to meet the requirements of to UL94 V2.

### Typical Physical Properties

| Property                          | Value     | Unit                | Standard      | Test Method                     |
|-----------------------------------|-----------|---------------------|---------------|---------------------------------|
| <b>GENERAL PROPERTIES:</b>        |           |                     |               |                                 |
| Density*                          | 1.16      | g/cm <sup>3</sup>   | ISO 1183      | 23°C                            |
| <b>MECHANICAL PROPERTIES:</b>     |           |                     |               |                                 |
| Tensile Modulus                   | 1400      | MPa                 | ISO 527       | 23°C                            |
| Yield stress                      | 14        | MPa                 | ISO 527       | 23°C                            |
| Elongation at yield               | 1.8       | %                   | ISO 527       | 23°C                            |
| Tensile Strength                  | 14        | MPa                 | ISO 527       | 23°C                            |
| Elongation at break               | 20        | %                   | ISO 527       | 23°C                            |
| Charpy (notched)                  | 5         | KJ/m <sup>2</sup>   | ISO 179       | 23°C, 1eA                       |
| Charpy (un-notched)               | 40        | KJ/m <sup>2</sup>   | ISO 179       | 23°C, 1eU                       |
| <b>THERMAL PROPERTIES:</b>        |           |                     |               |                                 |
| VICAT softening Point             | -         | °C                  | ISO 306       | 50°C/50N                        |
| HDT-A                             | 87        | °C                  | ISO 75        | 1.8 MPa annealed                |
| HDT-A                             | 80        | °C                  | ISO 75        | 1.8 MPa unannealed              |
| CLTE                              | 60 - 90   | 10 <sup>-5</sup> /K | ISO 7991      | -                               |
| <b>ELECTRICAL PROPERTIES:</b>     |           |                     |               |                                 |
|                                   | -         | -                   | -             | -                               |
|                                   | -         | -                   | -             | -                               |
| <b>BURNING BEHAVIOUR:</b>         |           |                     |               |                                 |
| Fire Classification               | V2        | -                   | UL94          | Indicative tests at 2mm and 4mm |
|                                   | -         | -                   | -             | -                               |
| <b>SCRATCH/SURFACE:</b>           |           |                     |               |                                 |
| Hardness (ball indentation test)  | -         | N/mm <sup>2</sup>   | EN ISO 2039-1 | H 358/30                        |
| Water absorption until saturation | -         | %                   | ISO 62        | 23°C                            |
| <b>MISCELLANEOUS:</b>             |           |                     |               |                                 |
| Mould Shrinkage                   | 0.5 - 0.7 | %                   | -             | -                               |
| Thermoforming Temperature         | 140 - 175 | °C                  | -             | -                               |

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

<sup>1</sup> 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

Chemical resistance is influenced by many factors, including concentration, temperature, exposure time and material stress.

Lamination products have different behaviour between the top and underside, therefore suitability should be properly evaluated for the application.

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.

**Right to make changes** – epsotech reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof. The latest version of a published datasheet shall be available for download from the epsotech website, or the subsidiary websites of Carolex SAS and Axipack SAS, depending on the product range.

**Limited warranty and liability** - Information in this document is believed to be accurate and reliable. However, epsotech and/or its subsidiaries do not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information. epsotech takes no responsibility for the content in this document if provided by an information source outside of epsotech. In no event shall epsotech be liable for any indirect, incidental, punitive, special or consequential damages (including - without limitation - lost profits, lost savings, business interruption, costs related to the removal or replacement of any products or rework charges) whether or not such damages are based on tort (including negligence), warranty, breach of contract or any other legal theory. Notwithstanding any damages that the customer might incur for any reason whatsoever, aggregate and cumulative liability by epsotech towards customers for the products described herein shall be limited in accordance with the terms and conditions of commercial sale of epsotech.

**Edition 1, February 2021**

**Published by epsotech Holding GmbH, Im Reinfeld 2, Jülich Kirchberg, 52428 Germany**