#### Ultrason® E **Product Information**

2010 HC



PESU 04/2025

## **Product description**

Special unreinforced, medium viscosity injection moulding grade for applications demanding inherent color, transparency and free from specks

Abbreviated designation according to ISO 1043-1: PESU

## Physical form and storage

Ultrason® pellets are supplied in bags and/or octabins. The bulk density ranges between 700 and 800 g/l. Provided the packaging remains undamaged, Ultrason® can be stored indefinitely. Ultrason® pellets absorb moisture very rapidly. Therefore, the pellets need to be dried at least 4h at 130 °C to 150 °C in a vacuum or dry air drier prior to processing.

### **Product safety**

From our experience and information, proper treatment and reasonable use of the product will not have any health hazardous effects.

In view of the high temperatures involved in processing Ultrason®, great care must be exercised -even more than for other thermoplastics- in handling the machinery, molds, moldings and residual melts. If there are concerns or doubts on the thermal capacity and limits, the machinery manufacturer should be consulted.

Any product that has decomposed during injection molding must be removed from the barrel by injection into the atmosphere and simultaneous reduction of the barrel temperature. Noxious odors that could form during this procedure

can be reduced by rapid cooling of the degraded material, e.g. in a water bath. If the degraded material is not pumped out of the barrel, gas pressure may build up, particularly if nozzle shutoff devices are used. The built-up pressure could then release violently around the nozzle or hopper areas, and explosions would therefore be expected in the course of

pumping.

If the normal precautions are taken and the upper temperature limit, i.e. 390°C, is not exceeded, no health hazardous vapors are formed while Ultrason® is being processed. In common with all other thermoplastics, Ultrason® decomposes on exposure to excessive heat, for instance if the melt temperature is too high and/or the residence time in the platicizing unit is too long or if residues are burned off during cleaning of the machinery. The figures laid down for the maximum allowable dust concentrations (e.g. MAK value in Germany) must be met in further processing. The work place must be well ventilated, preferably by means of an extraction system installed above the barrel unit.

Irrespective of this, all precautions relating to accident prevention must strictly be taken. Under no circumstances may the plasticizing units be dismantled after a breakdown while they are still hot.

## Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may Change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed. In order to ensure supply ability, our products are produced in several production lines on different sites of the BASF Group. All production lines produce according to identical specifications. In order to check the availability of products please contact us or our sales agency.

# Ultrason® E 2010 HC

## **Product Information**



| Typical values for uncoloured product at 23 °C¹)   | Test method   | Unit  | Values <sup>2)</sup>                                    |
|--|---|---|---|
| Properties   |   |   |   |
| Polymer abbreviation Density Viscosity number (in 0,01 g/ml Phenol/1,2, ortho-Dichlorbenzol, 1:1) Water absorption, equilibrium in water at 23°C Moisture absorption, equilibrium 23°C/50% r.h. Glass transition temperature, DSC (10°C/min)   | ISO 1183<br>ISO 307, 1157, 1628<br>similar to ISO 62<br>similar to ISO 62<br>ISO 11357-1/-2                                       | kg/m³<br>cm³/g<br>%<br>%<br>°C                                      | PESU<br>1370<br>56<br>2.2<br>0.8<br>225                 |
| Processing   |   |   |   |
| Processing: Injection moulding (M), Extrusion (E), Blow moulding (B) Melt volume-flow rate MVR 360 °C/10 kg Melt temperature, injection moulding/extrusion Mould temperature, injection moulding Molding shrinkage, parallel Molding shrinkage, normal   | ISO 1133<br>-<br>ISO 294-4<br>ISO 294-4   | -<br>cm³/10min<br>°C<br>°C<br>%<br>%                                | M, E, B<br>70<br>340 - 390<br>140 - 180<br>0.82<br>0.86 |
| Flammability   |   |   |   |
| UL94 rating at thickness d = 1.5 mm<br>UL94 rating at thickness d = 3 mm   | IEC 60695-11-10<br>IEC 60695-11-10  | class<br>class  | V-0<br>V-0  |
| Mechanical properties  |   |   |   |
| Tensile modulus Yield stress, 50 mm/min Yield strain, 50 mm/min Charpy unnotched impact strength (23°C) Charpy unnotched impact strength (-30°C) Charpy notched impact strength (23°C) Charpy notched impact strength (-30°C) Izod notched impact strength (23°C) Izod notched impact strength (-30°C) Ball indentation hardness at 358 N/30 s | ISO 527-1/-2<br>ISO 527-1/-2<br>ISO 527-1/-2<br>ISO 179/1eU<br>ISO 179/1eU<br>ISO 179/1eA<br>ISO 180/A<br>ISO 180/A<br>ISO 2039-1 | MPa<br>MPa<br>%<br>kJ/m²<br>kJ/m²<br>kJ/m²<br>kJ/m²<br>kJ/m²<br>MPa | 2650<br>85<br>6.9<br>N<br>N<br>7.5<br>8<br>7.5<br>8     |
| Thermal properties   |   |   |   |
| HDT A (1.80 MPa) Max. service temperature (short cycle operation) Temperature index at 50% loss of tensile strength after 20000 h Coefficient of linear thermal expansion, longitudinal (23-80°C) Coefficient of linear thermal expansion, longitudinal (180°C)  | ISO 75-1/-2<br>-<br>IEC 60216<br>ISO 11359-1/-2<br>DIN 53752  | °C<br>°C<br>°C<br>E-6/K<br>E-6/K                                    | 205<br>220<br>180<br>52<br>59                           |
| Electrical properties  |   |   |   |
| Relative permittivity (100 Hz) Relative permittivity (1 MHz) Dissipation factor (100 Hz) Dissipation factor (1 MHz) Electric strength K20/K20 Comparative tracking index, CTI, test liquid A Comparative tracking index, CTI, test liquid B Volume resistivity   | IEC 62631-2-1<br>IEC 62631-2-1<br>IEC 62631-2-1<br>IEC 62631-2-1<br>IEC 60243-1<br>IEC 60112<br>IEC 60112<br>IEC 62631-3-1        | -<br>E-4<br>E-4<br>kV/mm<br>-<br>-<br>Ohm*m                         | 3.9<br>3.8<br>17<br>140<br>35<br>100<br>100<br>>1E13    |
| Optical properties   | ·   |   |   |
| Refractive index (specimen thickness = 1 mm)  Degree of light transmission (specimen thickness = 2 mm)   | ISO 489<br>DIN 5036-3   | -<br>%  | 1.630<br>88   |

If product name or properties don't state otherwise.
 The asterisk symbol '\*' signifies inapplicable properties.

# Ultrason® E 2010 HC

## **UL - Yellow Card**



Component - Plastics E41871

**BASF SE** 

Performance Materials Europe, PMD/EX - H201, Ludwigshafen 67056 DE

E2010

Polyethersulfone (PESU) "Ultrason", furnished as pellets

| Color | Min. Thk<br>(mm) | Flame<br>Class | HWI | HAI | RTI Elec<br>(°C) | RTI Imp<br>(°C) | RTI Str<br>(°C) |
|-------|------------------|----------------|-----|-----|------------------|-----------------|-----------------|
| ALL   | 1.5              | V-0            | 2   | 0   | 180              | 180             | 190             |
| NC    | 3.0              | V-0. 5VA       | 1   | 0   | 180              | 180             | 190             |

Comparative Tracking Index (CTI): 4 Inclined Plane Tracking (IPT) kV: -

Dielectric Strength (kV/mm): -Volume Resistivity (10xohm-cm): -

Surface Resistivity (10xohms/ High-Voltage Arc Tracking Rate (HVTR): square):

> High Volt, Low Current Arc Resis Dimensional Change (%): -(D495):

ANSI/UL 94 small-scale test data does not pertain to building materials, furnishings and related contents. ANSI/UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

Report

Date:

2008-02-22

© 2025 UL Solutions



Last 2009-10-09 Revised:

## IEC and ISO Test Methods

| Test Name                             | Test Method                      | Units         | Thk (mm) | Value         |
|---------------------------------------|----------------------------------|---------------|----------|---------------|
| Flammability                          | IEC 60695-11-10, IEC 60695-11-20 | Class (color) | 1.5      | V-0 (ALL)     |
|                                       |                                  |               | 3.0      | V-0, 5VA (NC) |
| Glow-Wire<br>Flammability (GWFI)      | IEC 60695-2-12                   | °C            | -        | -             |
| Glow-Wire Ignition (GWIT)             | IEC 60695-2-13                   | °C            | -        | -             |
| IEC Comparative<br>Tracking Index     | IEC 60112                        | Volts (Max)   | -        | -             |
| IEC AC Dielectric<br>Strength (AC DS) | IEC 60243-1                      | kV/mm         | -        | -             |
| IEC DC Dielectric<br>Strength (DC DS) | IEC 60243-2                      | kV/mm         | -        | -             |
| IEC Volume Resistivity (VR)           | IEC 62631-3-1                    | 10x ohm-m     | -        | -             |
| IEC Surface Resistivity (SR)          | IEC 62631-3-2                    | 10x ohms      | -        | -             |
| IEC Inclined Plane<br>Tracking (IPT)  | IEC 60587                        | kV            | -        | -             |
| IEC Ball Pressure                     | IEC 60695-10-2                   | °C            | -        | -             |
| ISO Heat Deflection<br>(1.80 MPa)     | ISO 75-2                         | °C            | -        | -             |
| ISO Tensile Strength                  | ISO 527-2                        | MPa           | -        | -             |
| ISO Flexural Strength                 | ISO 178                          | MPa           | -        | -             |
| ISO Tensile Impact                    | ISO 8256                         | kJ/m2         | -        | -             |
| ISO Izod Impact                       | ISO 180                          | kJ/m2         | -        | -             |
| ISO Charpy Impact                     | ISO 179-1                        | kJ/m2         | -        | -             |

**BASF SE** 

67056 Ludwigshafen, Germany