ERGO® 1665 (ERGO® 1663 + ERGO® 1664)

ERGO® 1665 is a non-sagging, two-part methacrylate adhesive designed for structural bonding of thermoplastic, metal, and composite assemblies. Combined at a 10:1 ratio, it has a working time of 3 to 6 minutes. 50% of final strength (@23°C) will be achieved already within 15 to 18 minutes. ERGO® 1665 is mainly used as an universal grade for industrial applications where composites are involved. Normally it does not require any surface preparation.

ADVANTAGES
- Good adhesion to a wide range of materials
- Non-dropping paste
- Bridges gaps up to 10 mm
- Excellent resistance against dynamic loads
- Resistant against outside conditions and humidity
- 100% reactive compound

FIELDS OF APPLICATION
Household appliance (white ware), advertising panels, traffic guidance systems, electronic and electrical engineering, vehicle industry, furnishment, windows and doors, bus-, truck- and rail car industry, boat and ship construction.

PRODUCT DATA SHEET
Physical properties – liquid product, at 23°C

<table>
<thead>
<tr>
<th></th>
<th>ERGO® 1663 (resin)</th>
<th>ERGO® 1664 (activator)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity [mPas]</td>
<td>~ 100.000</td>
<td>~ 50.000</td>
</tr>
<tr>
<td>Colour</td>
<td>Off-white</td>
<td>blue</td>
</tr>
<tr>
<td>Mixture ratio, volume</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Density [g/cm³]</td>
<td>~ 0.99</td>
<td>~ 1.15</td>
</tr>
<tr>
<td>Flash point</td>
<td></td>
<td>10°C</td>
</tr>
<tr>
<td>Gap filling</td>
<td>up to 10 mm</td>
<td></td>
</tr>
<tr>
<td>Working time</td>
<td>3 – 6 minutes</td>
<td></td>
</tr>
<tr>
<td>Fixture time [~10 N/mm²]</td>
<td>8 – 13 minutes</td>
<td></td>
</tr>
<tr>
<td>Final strength</td>
<td>12 hours</td>
<td></td>
</tr>
<tr>
<td>Processing temperature</td>
<td>+10°C up to +40°C</td>
<td></td>
</tr>
</tbody>
</table>
Recommended for
ABS, PVC, PS, FRP, PMMA, polyesters, polyurethanes, composites, steel, aluminum,……

Physical properties - cured product

Tensile strength DIN 53504
after 24 hrs at 23°C  > 15 N/mm²

Elongation at break, DIN 53504
after 24 hrs at 23°C  ~ 75%

Tensile shear strength DIN EN 1465 after 24 hrs at 23°C
on steel  > 15 N/mm²
  steel/ glass  > 10 N/mm² [x]
  aluminium  > 19 N/mm²
  GFR plastic  > 17 N/mm²
  ABS  > 5 N/mm² [x]
  PC  > 6 N/mm² [x]
  PVC  > 7 N/mm² [x]
  PMMA  > 6 N/mm² [x]

[x] = test-stripe failed

Thermal range - 55°C up to + 120°C

Chemical resistance
Excellent to hydrocarbons
acids and bases (pH 3 – 10)
salt solutions

Susceptible to polar solvents
strong acids and basis
Working procedure

Mixture

ergo.® 1665 is available in common double cartridges. Usage of static mixture tubes and the related dosing pistol avoids mixing mistakes. The product will be mixed perfectly and can be applied very easily. Attention: As soon as curing starts inside the mixing tube, it must be replaced by a new one.

Usage

The glue is applied via the static mixture tube either as a thin rope or as uniform film on one part only. The parts must be joined within the pot life range and fixed at least until functional time is reached.

Cure-speed, tested @ 23° C on ABS and steel acc. to EN 1465

ABS: test stripes break at > 5 N/mm² (> 1600 N)

Too early movements can disturb the curing process and decrease the final bond-strength

Influence of processing temperature

Between +12°C and +25°C the product cures normal. Below +12°C the curing process needs much more time and temperature above +25°C will accelerate the curing process. Changing temperature influences also the viscosity of the single components

Handling and storage

Because of the high reactivity of the product and the exothermic curing process, never mix bigger amount of the components. The heat might evaporate parts of the formulation and cause strong smell. Do not waste exceeded material in plastic containers, because of the danger of melting.
Storage conditions
If stored in a dark and cool (20°C) place ergo® 1665 keeps its properties stable for 1 year after date of production. The date of expiry is mentioned on the label. Temperature above 20°C will decrease the storage stability and low temperature (+7°C up to +12°C) will increase it. Do not freeze the product.

Cleaning
The liquid product may be removed with a blotting (absorbent) paper and a solvent like ethanol or acetone.
Cured product must be removed mechanically first and in a second step wiped with acetone.
Shedded glue should be mixed with an inorganic absorbent and wasted as flammable good.

Precautions
For your own safety, please refer to the information of the concerned MSDS