



Advantages

Our special glass I-860 has an extremely high resistance to ageing. It is certified by the Physical-Technical Institute in Braunschweig as a thermometer glass for temperatures up to 360 °C and belongs to hydrolytic class III. We draw our tubing, rods and capillaries with 3 newly-developed Vello feeders. This results in a low degree of sagging and gives our tubing smaller tolerances in the outer diameter and wall thickness. This process also gives us great flexibility in the range of our products and allows us to complete your orders quickly.

Quality

We measure the cross-section, bores and wall thicknesses, particularly of the capillaries, with an automatic optoelectronic testing system we have developed ourselves. We guarantee the values for your order and will provide a certificate on request.

Finishing

Our tubing and rods are supplied with broken-off ends, but cut ends can also be supplied.

Tubing, rods and capillaries made of thermometer glass I-860

ILMATHERM®



Chemical composition

69 % SiO₂ by weight
16 % Na₂O by weight
7 % Al₂O₃ by weight
3 % CaO by weight
2 % B₂O₃ by weight
1 % MgO by weight
1 % ZnO by weight

Chemical properties

- Hydrolytic resistance to DIN ISO 719 (at 98 °C):
HGB 3
- Alkali resistance to DIN 52322 (identical with ISO 695):
class A2
- Acid resistance to DIN 12 116:
acid class 1

Physical properties

- Mean coefficient of linear thermal expansion:
 $\alpha (20\text{ °C} \dots 300\text{ °C}) = 8.7 \pm 0.1 \times 10^{-6} \text{ K}^{-1}$
- Ice point depression:
K = 0.006 °C
- Density at 20°C:
 $\rho = 2.48 \text{ g/cm}^3$
- Working point:
 $\vartheta_{f1} = 1050\text{ °C}$ at a viscosity of
 $\eta_{f1} = 10^4 \text{ dPa} \cdot \text{s}$
- Softening (or Littleton) point:
 $\vartheta_{f2} = 720\text{ °C}$ at a viscosity of
 $\eta_{f2} = 10^{7,6} \text{ dPa} \cdot \text{s}$
- Transformation temperature:
 $t_g = 555\text{ °C}$
- Maximum permissible working temperature:
350 °C

Where no tolerances are given the values are rounded-off mean long-term values which are subject to minor variations as a result of the manufacturing process.

Clear glass tubing 8610

Outer diameter <i>mm</i>	Wall thickness <i>mm</i>	Tubing length <i>mm</i>	Pack quantity <i>kg</i>
1 ±0.10	0.2 ±0.01 to 0.4 ±0.05	1000±1	5
3 ±0.15	0.3±0.01 to 1.0±0.08	1500±1	10
5 ±0.20	0.4±0.05 to 1.5±0.08	1500±1	10
8 ±0.30	0.5±0.05 to 1.0±0.10	1500±1	10
10 ±0.40	0.6±0.06 to 2.0±0.12	1500±1	10

Jacket tubing 8650

Oval shape with 3 white stripes and a ratio of about 4:3 between larger and smaller diameters.

Outer diameter <i>mm</i>	Wall thickness <i>mm</i>	Tubing length <i>mm</i>	Pack quantity <i>kg</i>
12.0 ± 0.4 x 9.3 ± 0.4	0.6 ± 0.1	1500 ± 2	10

Schellbach tubing 8690

Round shape with blue stripe and white backing.

Outer diameter <i>mm</i>	Wall thickness <i>mm</i>	Tubing length <i>mm</i>	Pack quantity <i>kg</i>
9 ± 0.25	1.0 ± 0.08	1500 ± 5	10

Clear glass rods 8620

Outer diameter <i>mm</i>	Rod length <i>mm</i>	Pack quantity <i>kg</i>
1 ± 0.10	1000 ± 5	5
3 ± 0.20	1500 ± 5	10
6 ± 0.25	1500 ± 5	10

Capillary tubing 8630

Prismatic shape, white or yellow backing with oval bore for rod-shapes clinical thermometers.

Capillary height <i>mm</i>	Area of bore <i>mm</i>	Capillary length <i>mm</i>	Pack quantity <i>kg</i>
4.5 ± 0.20	0.0013	1000 ± 5	10
4.5 ± 0.20	0.0010	1000 ± 5	10
5.9 ± 0.20	0.0039	1000 ± 5	10

Capillary tubing 8631

Prismatic shape, yellow backing with round bore for clinical thermometers, oval type.

Capillary height <i>mm</i>	Area of bore <i>mm²</i>	Capillary length <i>mm</i>	Pack quantity <i>kg</i>
2.1 ± 0.15	0.0029	580 ± 5	5
2.1 ± 0.15	0.0019	580 ± 5	5
1.9 ± 0.15	0.0015	580 ± 5	5

Capillary tubing 8632

Prismatic shape, for mercury, blue or red reading with sickle-shaped bore for clinical thermometers, oval type.

Capillary height <i>mm</i>	Area of bore <i>mm²</i>	Capillary length <i>mm</i>	Pack quantity <i>kg</i>
2.1 ± 0.15	0.0031	580 ± 5	5
2.1 ± 0.15	0.0018	580 ± 5	5

Capillary tubing 8633

Prismatic shape, clear, with round or oval bore for technical and household thermometers.

Capillary height <i>mm</i>	Area of bore <i>mm²</i>	Capillary length <i>mm</i>	Pack quantity <i>kg</i>
1.5 ± 0.10	0.16 - 0.0005	1500 ± 5	10
2.0 ± 0.10	0.40 - 0.0005	1500 ± 5	10
2.4 ± 0.10	0.40 - 0.0005	1500 ± 5	10
3.0 ± 0.15	0.26 - 0.02	1500 ± 5	10

Capillary tubing 8634

Prismatic shape, white backing, with round bore for technical and household thermometers.

Capillary height <i>mm</i>	Area of bore <i>mm²</i>	Capillary length <i>mm</i>	Pack quantity <i>kg</i>
2.5 ± 0.10	0.26 - 0.028	1500 ± 5	10
3.6 ± 0.10	0.26 - 0.040	1500 ± 5	10
4.8 ± 0.10	0.028 - 0.012	1500 ± 5	10
5.5 ± 0.15	1.0 - 0.028	1500 ± 5	10
6.2 ± 0.25	1.0 - 0.028	1500 ± 5	10

Capillary tubing 8635

Prismatic shape, yellow backing, with round or oval bore for technical and household thermometers.

Capillary height <i>mm</i>	Area of bore <i>mm²</i>	Capillary length <i>mm</i>	Pack quantity <i>kg</i>
2.0 ± 0.10	0.040 - 0.008	1500 ± 5	10
2.5 ± 0.10	0.038 - 0.018	1500 ± 5	10
3.0 ± 0.10	0.038 - 0.018	1500 ± 5	10
6.5 ± 0.15	0.18 - 0.04	1500 ± 5	10

Capillary tubing 8636

Prismatic shape, for mercury, blue or red reading with sickle-shaped bore for technical and household thermometers.

Capillary height <i>mm</i>	Area of bore <i>mm²</i>	Capillary length <i>mm</i>	Pack quantity <i>kg</i>
2.0 ± 0.10	0.045 - 0.007	1500 ± 5	10
3.0 ± 0.10	0,045 - 0.007	1500 ± 5	10
5.5 ± 0.10	0.07 - 0.009	1500 ± 5	10
6.2 ± 0.15	0.07 - 0.007	1500 ± 5	10

Capillary tubing 8637

Round shape, clear with round or oval bore for technical thermometers, clinical thermometers, and laboratory thermometers.

Rohr- durchmesser <i>mm</i>	Area of bore <i>mm²</i>	Capillary length <i>mm</i>	Pack quantity <i>kg</i>
1.5 ± 0.10	0.28 - 0.005	1000 ± 5	5
3.0 ± 0.20	0.25 - 0.005	1500 ± 5	10
5.5 ± 0.20	0.25 - 0.005	1500 ± 5	10
6.5 ± 0.25	0.25 - 0.005	1500 ± 5	10

Capillary tubing 8638

Round shape, white or yellow backing, with round or oval bore for wall thermometers, pipettes, etc.

Tubing diameter <i>mm</i>	Area of bore <i>mm²</i>	Capillary length <i>mm</i>	Pack quantity <i>kg</i>
3.5 ± 0.20	1.00 - 0.005	1500 ± 5	10
5.5 ± 0.20	1.00 - 0.005	1500 ± 5	10
6.5 ± 0.25	1.00 - 0.005	1500 ± 5	10

Capillary tubing 8639

Round shape, with blue Schellbach stripe and white backing.

Tubing diameter <i>mm</i>	Inner diameter <i>mm²</i>	Capillary length <i>mm</i>	Pack quantity <i>kg</i>
4.5 ± 0.20	0.3 - 2.5	1500 ± 5	10
5.5 ± 0.20	0.3 - 2.5	1500 ± 5	10
6.5 ± 0.25	2.0 - 4.5	1500 ± 5	10
7.5 ± 0.25	2.0 - 4.5	1500 ± 5	10

Capillaries

Optima shape

Our capillaries 8630 to 8636 can also be supplied with this shape.

Profile products

We manufacture profile glass rods in various shapes with outer dimensions of 1 to 6 mm and lengths from 500 to 2000 mm.

Special markings

We also supply specially marked capillaries.

Special version

We are extremely flexible as regards the position and thickness of the enamel backing of our capillaries. Our service team will be pleased to advise you.