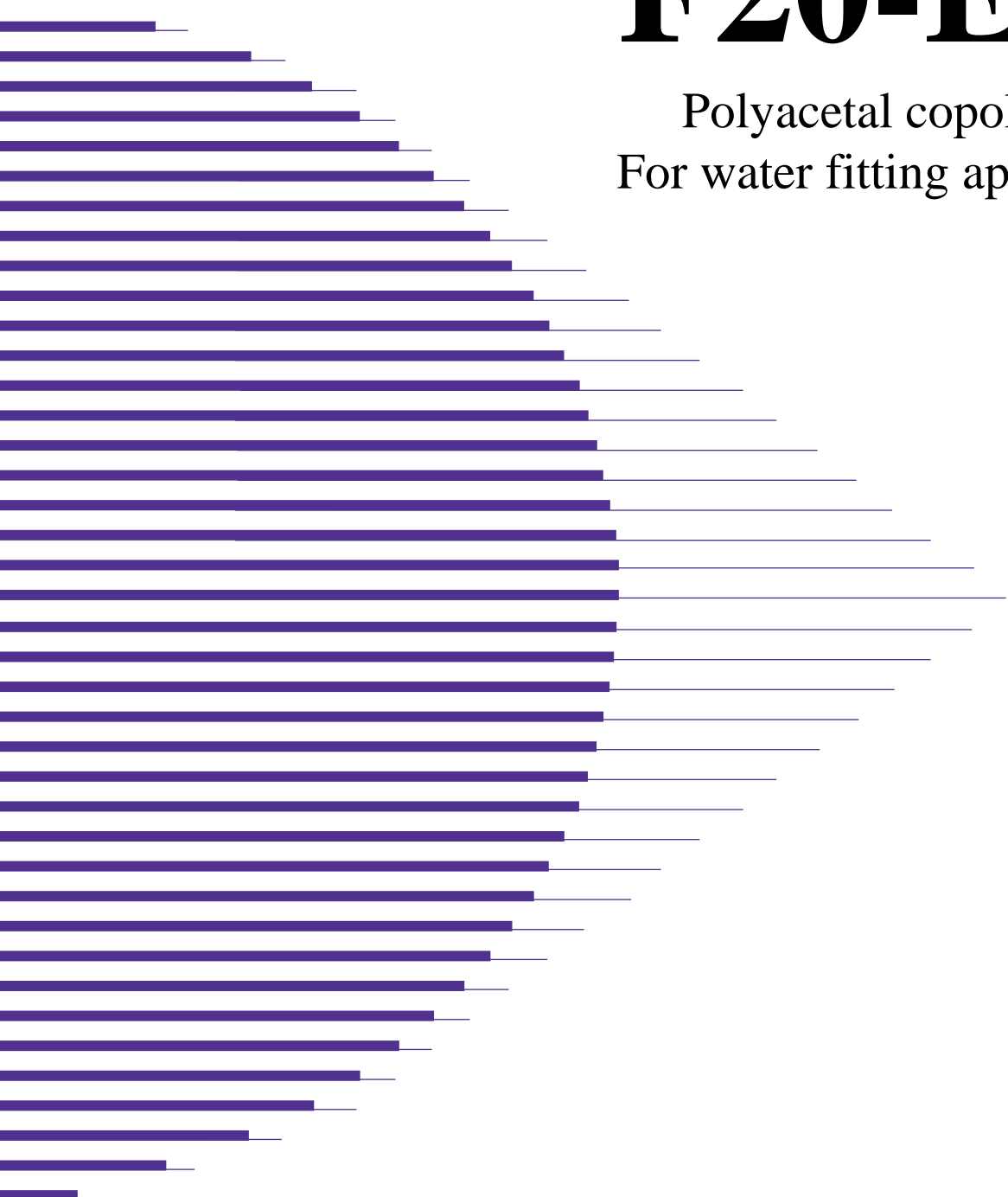


Oupital[®]

F20-EW

Polyacetal copolymer
For water fitting application



Characteristics

Iupital® F20-EW is an acetal copolymer approved to the standards for water fitting application in various countries. This material is suitable for injection molding especially.

Properties

Properties	Test Method	Terms	Units	F20-EW
Physical properties				
Density	ISO 1183	-	g/cm ³	1.41
Water absorption	-	23degC, 60%RH	%	0.22
Rheological properties				
Melt Volume-flow Rate	ISO 1133	Temperature Load	cm ³ /10min degC kg	7.7 190 2.16
Mechanical properties				
Tensile modulus	ISO 527-1 , 527-2	-	MPa	2900
Yield stress			64	
Yield strain			%	8.5
Nominal strain at break				30
Flexural strength	ISO 178	-	MPa	90
Flexural modulus				2600
Charpy impact strength	ISO 179-1 , 179-2	23 degC	kJ/m ²	250
Charpy notched impact strength		23 degC		
Thermal properties				
Melting temperature	ISO 11357-3		degC	166
Temperature of deflection under load	ISO 75-1 , 75-2	1.80MPa	degC	100
Coefficient of Linear thermal expansion	ISO 11359-2			

Approvals for Iupital F20-EW

Water fitting application

UK / England - WRAS (BS 6920)

USA / Canada - NSF 14 & 61

Germany - KTW for 23 C degree and 60 C degree
- DVGW W270

France - ACS (XP P 41250)

Food contact application

EU - EC 10/2011

USA - FDA

3-A Sanitary standards

NSF 51

Flammability

UL 94HB

Typical injection molding conditions

Pre-Drying Condition

Drying is necessary to prevent silver streak and odor problem.

*Drying temperature: 80 – 100°C

*Drying time : >3hrs

Injection Molding Machine

*Screw type : With non-return ring at screw head

*Nozzle shape of cylinder : Open nozzle

Resin replacement, Shut-down and Temporary shut-down

(1) Resin replacement, Shut-down

It is desirable that Iupital F20-EW is replaced by polystyrene in the heating cylinder.

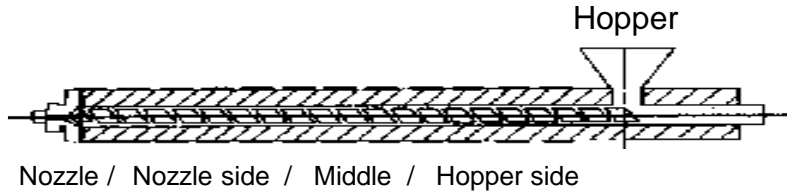
(2) Temporary shut-down

When work is interrupted, it is desirable to purge in the heating cylinder and to keep the temperature of the heating cylinder at 165°C or lower.

Typical injection molding conditions

Molding Condition

(1) Resin Temperature



< Example of setting temperature >

Nozzle	Nozzle side	Middle	Hopper side
185~210°C	190~210°C	180~200°C	170~190°C

Resin temperature of $200 \pm 10^\circ\text{C}$ is recommended.

Over 230°C is not recommended to prevent decomposition.

(2) Mold Temperature

Normally mold temperature of $40 \sim 120^\circ\text{C}$ is recommended, and preferably $60 \sim 80^\circ\text{C}$ is better.

(3) Injection Pressure

Normally 50-100MPa

(4) Screw speed of rotation

Normally 80-120rpm

(5) Back Pressure

Normally 0.5-1.0MPa

5. Attention point in case of molding trouble

If melted resin is kept in heating cylinder for long times, it is necessary to purge before producing molding articles.

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Note

1. The values described are typical values only.
2. The usage examples indicated here do not guarantee results applicable to relevant uses of the products.
3. It is the users' responsibility to investigate industrial property rights and the terms of use related to the uses and applications indicated here.
4. For the handling (transport, storage, forming, disposal, etc.) of the products, it is advisable to refer to technical documents and the Safety Data Sheet (SDS) of the proper materials and grades. Please contact us for consultations when the products are used for the purpose of food containers and packaging, medical parts, safety equipment, and toys for children.
5. In Japan, the colored products of each grade may contain chemicals subject to reporting requirements under the applicable law provided in Appendix 9 of Article 18-2 of the Enforcement Order, under Article 57-2 of the Industrial Safety and Health Act. For details, please contact us.
6. For the export of our products and products incorporated with our products, please comply with the relevant laws and regulations, such as the Foreign Exchange and Foreign Trade Law.
7. Please note that because of the chemical substance management systems in each country, the chemicals used in our products are subject to control, and separate applications might be required or are banned from imports and exports. It is advisable to inquire about the status of regulations in the relevant countries if you are exporting or importing our products.