

TECHNICAL DATA SHEET

RESINS

OvivUP[®] – M020

General information

OvivUP – M020

PURPOSE	<ul style="list-style-type: none">• Ultrapure premium grade mixed bed ion exchange resin. Strong acid cation and strong base anion resins designed for polishing or make-up mixed bed ion exchange applications in Ultrapure water systems.• OvivUP – M020 is especially conditioned and rinsed for producing semiconductor grade Ultrapure water with the highest quality standards (resistivity $\geq 18.2 \text{ M}\Omega\cdot\text{cm}$ and $\text{TOC} \leq 1 \text{ ppb}$). The premium quality of this resin is achieved by using very high grade Ultrapure water (following IRDS guidelines) for the cleaning and rinsing of resin during the manufacturing process.
TYPE	Mixed (cation exchange resin OvivUP – C020 and anion exchange resin OvivUP – A020)
MATRIX	Styrene-DVB copolymer, gel
PHYSICAL FORM	Translucent spherical beads
INSTALLATION	<ul style="list-style-type: none">• The optimum performance of any mixed bed unit can only be achieved if the resin is loaded, commissioned, and operated correctly.• All equipment has to be thoroughly decontaminated using the highest quality ultrapure rinse water to avoid contamination of the resin by either foreign matter or different resin types.• Ensure the resin level conforms to the plant design and always use Ultrapure water for the filling, commissioning, and rinsing steps.• We recommend using a hydraulic ejector or manually loading through the top manway or top filling flange.• After filling, we recommend mixing the resin with nitrogen (N_2) to ensure homogeneous mix of cation and anion resins, which may slightly separate during filling process.• Initiate flow and monitor TOC and resistivity rinse curves until the ultimate water quality has been achieved and stabilized.• Resin is delivered from the factory in an ultrapure and clean condition therefore only small rinse water volume is necessary during the installation to rinse to quality. Once resin packaging is open and is exposed to ambient air conditions, ensure to limit the exposure time to avoid partial resin exhaustion with ambient carbon dioxide (CO_2).



OvivUP – M020 (continued)	
OPERATION	<ul style="list-style-type: none"> One way resin, non-regenerable. OvivUP ion exchange resin can't be stored for a long time in a service vessel as bacterial growth could occur during standstill conditions. Thus, the resin should at least (and permanently if possible) be kept rinsed.
PACKAGING	OvivUP – M020 resin is packed in a plastic bag (25 liters).
STORAGE	<ul style="list-style-type: none"> OvivUP – M020 resin is sensitive to temperature. Protect from frost and store away from direct sun light, in a cool and dry place. Keep product in its original closed packaging until use and away from incompatible materials such as strong oxidizing agents. Recommended maximal storage time is 2 years after manufacturing date.
SHIPPING DENSITY	710 g/l

Specifications

EFFECTIVE SIZE	mm in	≥ 0.45 ≥ 0.0177
UNIFORMITY COEFFICIENT		≤ 1.6
BULK DENSITY	g/l lb/ft ³	± 690 – 730 ± 43.1 – 45.6
OUTLET RESISTIVITY (MIXED BED) ^{1) 2)}	MΩ·cm	≥ 18.2 ³⁾
ΔTOC (MIXED BED) ^{1) 2)}	ppb	≤ 1
METALS CONTENT ^{1) 2)}	ppb/g (dry resin)	< 1'000
METALS LEAKS IN UPW ¹⁾	ppb (dry resin)	< 0.5 each after 500 BVs < 0.1 each under normal operation conditions

1) Typical values in service. Detailed reports of analysis for all batches of OvivUP – M020 resins are available for each delivery, thus to ensure that the delivered product meets stringent UPW performance requirements and is of the highest quality.

2) Resistivity and TOC rinse performance measured after 12 hours at 30 BV/h with ≥ 17.5 MΩ·cm rinse water.

Typical properties

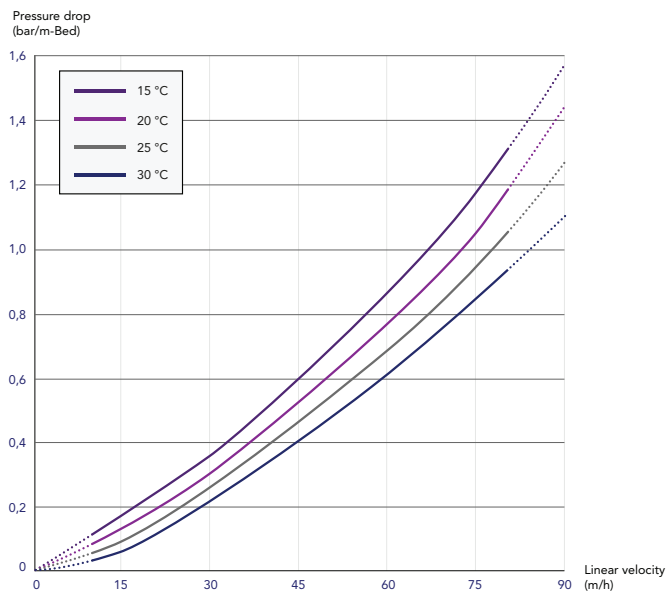
		EXCHANGE RESIN CATION – C020	EXCHANGE RESIN ANION – A020
FUNCTIONAL GROUP		Sulfonic acid	Quaternary Ammonium, Type I
COLOUR		Dark amber	Light yellow
WATER CONTENT	%	50 – 60	62 – 72
ION EXCHANGE CAPACITY	eq/l	≥ 1.8	≥ 1
IONIC FORM	eq%	≥ 99.9 H ⁺	≥ 95 OH ⁻ ≤ 1 Cl ⁻
OUTLET RESISTIVITY (SINGLE BED)	MΩ·cm	≥ 16	≥ 18.1
ΔTOC (SINGLE BED)	ppb	≤ 5	≤ 1

Operating parameters

MAXIMUM OPERATING TEMPERATURE	60 °C	140 °F
SERVICE FLOW RATE	10 – 80 m/h	4.1 – 32.7 gpm/ft ²
MINIMUM BED DEPTH	800 mm	31 ½ in
MAXIMUM PRESSURE DROP	1.5 bar	21 psig

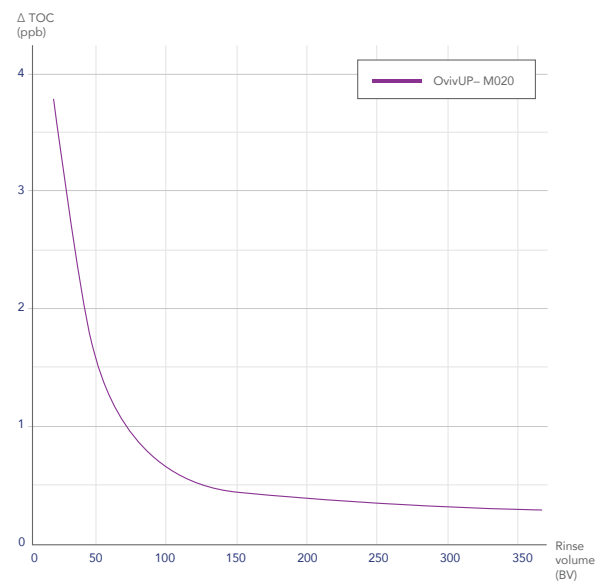
Hydraulic characteristics

PRESSURE DROP

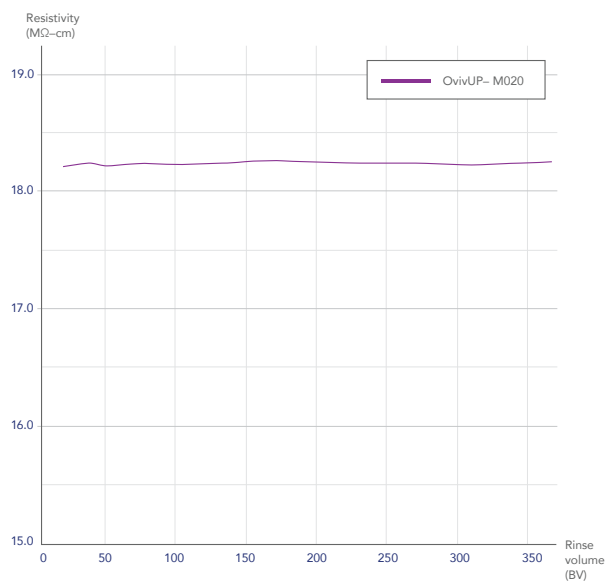


Typical performance

TOC RINSE DOWN CURVE



RESISTIVITY



Quality

ISO 9001:2015

- The production of the OvivUP – M020 is certified according to ISO 9001:2015.

ISO 14001:2015

- The manufacturing site of the OvivUP – M020 is certified according to ISO 14001:2015 for environmental management systems.

Other information

DISPOSAL	Disposal must be in accordance with the appropriate local regulations. If possible, recycling is preferred to disposal or incineration.
SAFETY ADVICE	<ul style="list-style-type: none">• Eye contact can cause serious irritation.• High risk of slipping due to spillage of the product.
GLOBAL KNOWLEDGE CENTRE	Ovivo Switzerland AG Benkenstrasse 262 4108 Witterswil Switzerland

