



Cryo.s™ with Datamatrix Code

Intelligent Solutions for
Biobanking

Cryo.s™ Cryogenic Tubes

More than 30 years of experience in cryo storage



Secure seal
Prevents sample evaporation

Robust wall
No tube breakage during freezing

Internal/external thread versions
Optimal choice for individual preferences

Medical grade polymer without leachables
Prevents sample contamination

Unique and durable 2D code
Rapid and secure sample identification

Greiner Bio-One – Your partner for Biobanking

With more than 30 years of experience in the field and continuous product development; Greiner Bio-One now offers a comprehensive range of state-of-the-art solutions for large biorepository cryo storage. Certified according to ISO 9001 and ISO 13485, Greiner Bio-One manufactures under controlled conditions, employing the highest standards in production hygiene, polymer selection and quality control.

Product Portfolio

- Cryo.s™ with Datamatrix (1, 2, 4 mL working volume)
- Cryo.s™ Biobanking tubes (235, 580, 975 µL working volume)
- Cryo.s™ Rack Scanner
- Cryo.s™ 8-Channel Handheld Decapper
- Accessory 81way storage boxes and 48way racks

Quality and Product Features

Cryo.s™ with Datamatrix and Cryo.s™ Biobanking tubes share the following characteristics:

- Sterile product versions sterilised applying an e-beam or x-ray process which is conform to ISO 11137
- Free of detectable heavy metals
- Free of detectable endotoxins (Limulus amoebocyte lysate test)
- Free of detectable human DNA and DNase (real time PCR)
- Free of detectable RNase (reverse real time PCR)
- Non-cytotoxic (ISO 10993-5)
- All tubes made from medical grade, USP class VI certified polypropylene without leachables (Fig.1)
- Medical grade silicone as gasket material (applies for all tube types with internal thread)
- Approved and well-suited for storage at -80 °C and in gas phase above liquid nitrogen
- Minimum tube wall thickness of 0.8 mm for minimised sample evaporation in long-term storage
- Approved for aircraft transportation at pressure differentials of 95 kPa according to IATA 5.0.2.9 guidelines
- Durable and resistant datamatrix codes (type ECC200) with Reed-Solomon error correction
- All datamatrix codes tested for readability and quality according to AIM guidelines for direct part marking



Cryo.s™ Extractable Study:

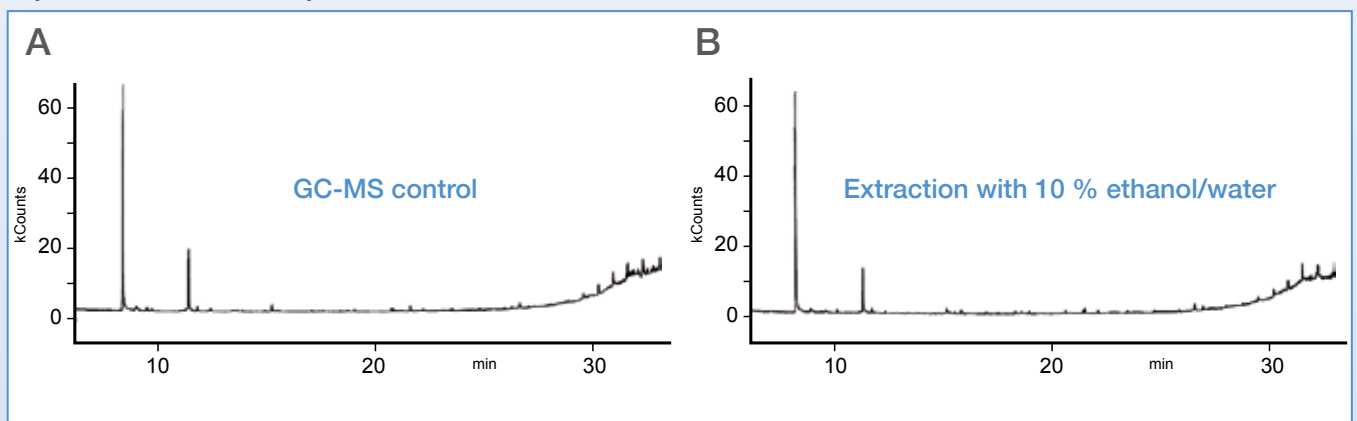


Figure 1: Cryo.s™ were extracted with 10 % ethanol in ultra-pure water. The extract was analysed applying gas chromatography with subsequent mass spectroscopy of the individual fractions. No extractable substances could be detected. Additionally, the absence of leachables was confirmed using 10 % DMSO in water as eluent (not shown).

Cryo.s™ with Datamatrix



- Choose between 1, 2 and 4 mL working volume
- Store 48 tubes per rack with ANSI/SLAS footprint or 81 tubes on a footprint of 133 mm x 133 mm

Cryo.s™ with Datamatrix are for storage of tissue, cells, fungi, bacteria, spores, cellular extracts or body fluids at ultra-low temperature for research and development as well as diagnostic purposes. Cryo.s™ with Datamatrix must not be stored in the liquid phase of liquid nitrogen, but only in the gas phase above. Cryo.s™ with Datamatrix are not intended for any application in the context of reproductive medicine.

REF	Product description	Working volume [mL]	Height [mm]	Tube material	Screw cap material	Screw cap colour	Sterile	Coding option	Packaging size [qty./case]
123263-2DG	Cryo.s™ 1 mL with datamatrix coding, internal thread	1.0	42	PP	PP	natural*	+	Pre-produced unique 2D code	500
122263-2DG	Cryo.s™ 2 mL with datamatrix coding, internal thread	2.0	48	PP	PP	natural*	+		500
126263-2DG	Cryo.s™ 2 mL with datamatrix coding, external thread	2.2	47	PP	HDPE	natural*	+		500
127263-2DG	Cryo.s™ 4 mL with datamatrix coding, external thread	4.0	83	PP	HDPE	natural*	+		300
123263-2D3	Cryo.s™ 1 mL with datamatrix coding, internal thread	1.0	42	PP	PP	natural*	+	Customised as specified in order form F071 004	500
122263-2D3	Cryo.s™ 2 mL with datamatrix coding, internal thread	2.0	48	PP	PP	natural*	+		500
126263-2D3	Cryo.s™ 2 mL with datamatrix coding, external thread	2.2	47	PP	HDPE	natural*	+		500
127263-2D1	Cryo.s™ 4 mL with datamatrix coding, external thread	4.0	83	PP	HDPE	natural*	+		300

REF	Product description	Capacity [tubes/rack]	Height [mm]	Rack material	Lid material	Rack colour	Lid colour	Coding option	Packaging size [qty./case]
803277	48way rack for 1, 2 and 4 mL Cryo.s™ without lid	48	30.0**	PP	PP	black	-	Customised as specified in order form F010 898	20
803202	48way rack for 1 and 2 mL Cryo.s™ with low profile lid	48	52.5	PP	PP	black	natural		20
803270	48way rack for 4 mL Cryo.s™ with high profile lid	48	88.5	PP	PP	black	natural		15
802576	81way box for 1 and 2 mL Cryo.s™ with low profile lid	81	52.0	PC	PC	black	natural	On request	10
802506	81way box for 4 mL Cryo.s™ with high profile lid	81	88.1	PC	PC	black	natural		10

* additional colours on request

** without tubes included



Cryo.s™ with Datamatrix and 48way rack for Cryo.s™ with Datamatrix with scanning windows in bottom



81way rack for Cryo.s™ with Datamatrix with scanning windows in bottom

Cryo.s™ Biobanking Tubes



- Choose between 235, 580 and 975 µL working volume
- Store 96 tubes per rack with ANSI/SLAS footprint in a very space efficient manner
- Bulk-packed tubes and customised codes on request.

Cryo.s™ Biobanking tubes are for storage of tissue, cells, fungi, bacteria, spores, cellular extracts or body fluids at ultra-low temperature for research and development purposes in a very compact format. Cryo.s™ Biobanking tubes must not be stored in the liquid phase of liquid nitrogen, but only in the gas phase above. Cryo.s™ Biobanking tubes are not intended for any application in the context of reproductive medicine.

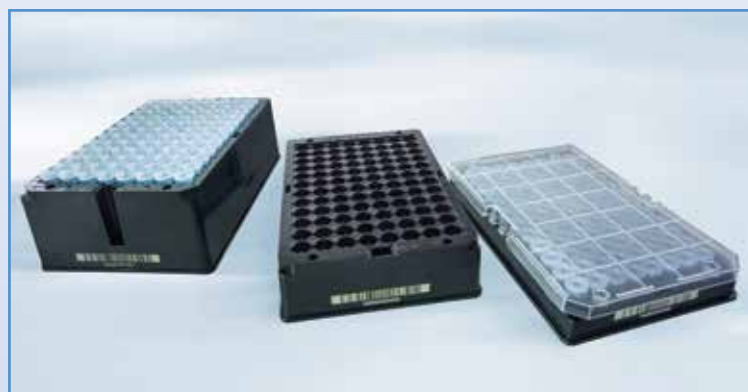
Overview product versions and features

Product description	300 µL tube, pre-racked in 96-way rack	300 µL tube, pre-racked in 96-way rack	600 µL tube, pre-racked in 96-way rack	600 µL tube, pre-racked in 96-way rack	1000 µL tube, pre-racked in 96-way rack	1000 µL tube, pre-racked in 96-way rack	96 screw caps in cap carrier
Material of tube and cap:	Polypropylene	Polypropylene	Polypropylene	Polypropylene	Polypropylene	Polypropylene	Polypropylene
Working volume* [µL]:	235	235	580	580	975	975	-
Total rack height with lid on [mm]:	21.6	21.6	36.2	36.2	53.9	53.9	-
Packaging size [qty./case]:	960 tubes/ 10 racks	960 tubes/ 10 racks	960 tubes/ 10 racks	960 tubes/ 10 racks	960 tubes/ 10 racks	960 tubes/ 10 racks	960 caps/ 10 cap carriers
Sterility:	sterile	non-sterile	sterile	non-sterile	sterile	non-sterile	non-sterile
Coding:	Pre-produced 2D code on tube, 2D code and linear barcode on rack						

Ordering information (REF numbers)

Product description:	300 µL tube, pre-racked, sterile	300 µL tube, pre-racked, non-sterile	600 µL tube, pre-racked, sterile	600 µL tube, pre-racked, non-sterile	1000 µL tube, pre-racked, sterile	1000 µL tube, pre-racked, non-sterile	96 screw caps in cap carrier, non-sterile
- Non-capped:	-	976570	-	977570	-	978570	-
● Natural cap:	976561	976580	977561	977580	978561	978580	385270
● Green cap:	976566	976586	977566	977586	978566	978586	385276
● Yellow cap:	976565	976585	977565	977585	978565	978585	385275
● Blue cap:	976564	976584	977564	977584	978564	978584	385274
● Red cap:	976563	976583	977563	977583	978563	978583	385273
● Pink cap:	976568	976588	977568	977588	978568	978588	385278
● Brown cap:	976569	976589	977569	977589	978569	978589	385279
● Black cap:	976567	976587	977567	977587	978567	978587	385277

* Working volumes indicate the maximum volume of water which may be frozen in the tube without the occurrence of excessive pressure inside the tube. In order to securely avoid contact of the frozen sample with the lower portion of the screw cap, it is recommended to not fully exploit these nominal working volumes. Some sample types tend to form air bubbles entrapped in the frozen material, thus contributing to the total sample volume. It is recommended to empirically determine and apply suitable maximum working volumes with these sample types.



Cryo.s™ Biobanking tubes and racks

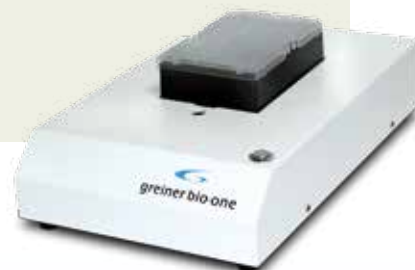


Cryo.s™ Biobanking tubes with manual capping tool (included in each case)

Cryo.s™ Rack Scanner

- Easy to install and intuitive rack scanner
- Decodes 2D codes on Cryo.s™ with Datamatrix in 48way racks and Cryo.s™ Biobanking tubes in 96way racks
- Optional rack identification based on rack-integrated datamatrix code
- One touch scan button, single tube scan feature
- Anti-condensation feature

REF	Product description	Box contents
849050	Cryo.s™ Rack Scanner, US edition	1 scanner, power cables, USB cables, drivers and manual
849070	Cryo.s™ Rack Scanner, EU/UK/Asia edition	1 scanner, power cables, USB cables, drivers and manual



Cryo.s™ 8-Channel Handheld Decapper

- Ergonomic design
- Reliably decaps and caps eight Cryo.s™ Biobanking tubes in parallel
- Stable stand for storage of device and contamination-free parking of screw caps
- Eight individual motors for precise application of 7 Ncm torque for tube closure

REF	Product description	Box contents
852070	Cryo.s™ 8-channel Handheld Decapper	1 decapper, power cable, stand, manual



Automation

- Cryo.s™ with Datamatrix and Cryo.s™ Biobanking tubes are optimised for automated laboratory equipment such as decappers, liquid handling systems and automated storage systems



Function	Suitable equipment (exemplified)	Cryo.s™ in 48way rack	Cryo.s™ in 81 way box	96way Cryo.s™ Biobanking Tubes
Automated de-/capping	Hamilton LabElite™ I.D. Capper / Hamilton LabElite™ DeCapper	Only internal thread tubes	-	•
	FluidX XSD-48 decapper	•	•	-
Decoding, de-/capping, tube transfer, weighing and liquid handling	BioMicroLab™ XL100 Vial Handler	•	-	•
	BioMicroLab™ XL20 Tube Handler (no de-/capping and liquid handling)	-	-	•
Automated liquid dispensing, tube and rack handling	Hamilton Microlab® STAR	•	-	•
	Hamilton VANTAGE Liquid Handling System	•	-	•
	Hamilton Microlab® NIMBUS	•	-	•
	Hamilton Rack Runner	•	-	•
Automated storage, picking and re-arraying	Hamilton BiOS®	•	-	•
	Hamilton Verso	•	-	•
	Hamilton SAM	•	-	•
	Hamilton ASM	•	-	•
	Askion C-line® HS200 S, HS200 M, HS200 L	•	-	•
Volume detection	BioMicroLab™ VolumeCheck™ / BioMicroLab™ XL LevelCheck™	•	-	•
Nucleic acid extraction	QIAGEN QIAsymphony SP	-	-	•
PCR	QIAGEN QIAsymphony AS	-	-	•

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Cryo.s™ Biobanking Tubes

The detail makes the difference

Secure seal
Prevents sample evaporation

0.8 mm wall
Minimises sample loss during long-term storage

Height-reduced screw cap
Conserves up to 30 % freezer space

Medical grade polymer without leachables
Prevents sample contamination

Unique and durable 2D code with human readable feature
Rapid and secure sample identification





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