

Multi-Safe disposal boxes

For safe disposal!





From blood collection to "Multi-Safe" disposal - Simple and Safe



Safety throughout the day

As a renowned manufacturer of Laboratory products and medical devices, we consider it our duty to provide safe disposal options for our single-use products.

As large and small waste is disposed of differently, our wide range of products offers a multitude of disposal options for our users. A variety of choice that is reflected in the different volumes, openings and multiple variants, even through to the final closure.

We ensure that all boxes meet the TRBA 250 (German regulations) as a minimum requirement so that we can guarantee the safe handling of the disposal box. Naturally our Multi-Safe disposal boxes also comply with international regulations, such as UN 3291 and ISO 23907.

As an independent family business, we are committed to the environment and future generations. Guided by this responsibility, we continuously optimise our actions in order to promote social growth, minimise our ecological footprint and consistently protect human health.

We pay far more than lip service to sustainable practices for our product lines. When developing, manufacturing and optimising our products, we attach great importance to resource-efficient processes and products, the use of recyclable materials and the promotion of reusable systems.

The new product line of Multi-Safe REC disposal boxes made from recycled plastic (Post-Consumer Recycled = PCR) is one current example of our sustainable approach, along with other sustainable product solutions. With a whole box containing at least 40 %^{*} recycled content, these products make an important contribution to CO_2 savings, while also fulfilling the requirements of ISO 23907 and UN 3291.

*twin plus 5000 REC at least 15 % recycled content.

Brand NEW

Also available as a sustainable version made from recycled plastic!







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Multi-Safe sani & mini

Multi-Safe for transport – the "littlies" with the "big" job

Multi-Safe sani 200

- Safe needle box for on the go
- Suitable for outpatient use by physicians, nurses and rescue services or for doctor's bags and emergency medical cases.
- One-handed opening and closing of the day and final closure
- Lid already assembled
- Space-saving

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Brand NEW Also available as a subtainable version made from recycled plastic At least 40 %* recycled content!

57 x 32 mm





Multi-Safe sani 200

Volume	Material	Design	Piece(s)/ case	Piece(s)/ pallet	Case dimensions	Order no
0.2 ml	Polypropylene	Multi-Safe sani 200	110	3,300	39.7 x 39.7 x 32.5 cm	77.3890.002
0.2 ml	Recycled polypropylene	Multi-Safe sani 200 REC	110	3,300	39.7 x 39.7 x 32.5 cm	77.3890.202

Multi-Safe mini 300

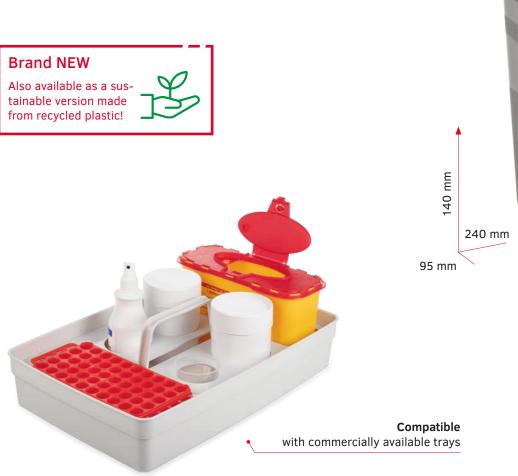
Volume	Material	Design	Piece(s)/ case	Piece(s)/ pallet	Case dimensions	Order no
0.3 ml	Polypropylene	Multi-Safe mini 300	135	2,700	60 x 40 x 31 cm	77.3890.003
0.3 ml	Recycled polypropylene	Multi-Safe mini 300 REC	135	2,700	60 x 40 x 31 cm	77.3890.203

Multi-Safe vario 2000

Large opening 2.0

8

- Easy assembly of the lid with snap hook
- The size of the disposal opening can be adjusted by breaking out sections as required. Please break out before use.
- Day closure and final closure enables one-handed operation
- QR code on the box enables quick and direct access to the instructions for use
- Various removal and twist-off aids for needles, Luer systems and insulin pens
- Integrated stamp in the lid enables the easy and safe disconnection of the insulin pen when closing
- Also available as version with biohazard labelling
- Compatible with commercially available trays
- Certified in line with DIN ISO 23907, UN 3291 and TRBA 250



You can find the certifications of the boxes in the overview on page 26. *twin plus 5000 REC min. 15 % recycled content.





Multi-Safe vario 200	0
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Volume	Material	Design	Piece(s)/ case	Piece(s)/ pallet	Case dimensions	Order no
2.0	Polypropylene	Multi-Safe vario 2000	50	1,000	60 x 40 x 35.9 cm	77.3893.020
2.0	Polypropylene	Multi-Safe vario 2000 with biohazard labelling	50	1,000	60 x 40 x 35.9 cm	77.3893.120
2.0	Recycled polypropylene	Multi-Safe vario 2000 REC	50	1,000	60 x 40 x 35.9 cm	77.3893.220
2.0	Recycled polypropylene	Multi-Safe vario 2000 REC with biohazard labelling	50	1,000	60 x 40 x 35.9 cm	77.3893.420

Multi-Safe twin plus

The disposal box with added safety!

- Easy assembly of the lid with snap hook
- Innovative lid: the day closure and final closure enable one-handed operation
- Disposal opening can be gradually enlarged by breaking out the sections.
 Please break out before use.
- IML label (in-mould labelling) stamped directly during production with product labelling in 9 languages
- The QR code on the box enables quick and direct access to the instructions for use
- Various stripping/detaching devices
- Integrated stamp in the lid enables the easy and safe disconnection of the insulin pen when closing lid
- Various table and wall-mounted holders offer flexible fastening options, ensuring the boxes are securely
 placed and preventing them from toppling. (see accessories p. 24)
- Also available as version with biohazard labelling
- Certified in line with DIN ISO 23907, UN 3291 and TRBA 250

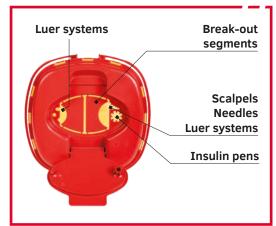


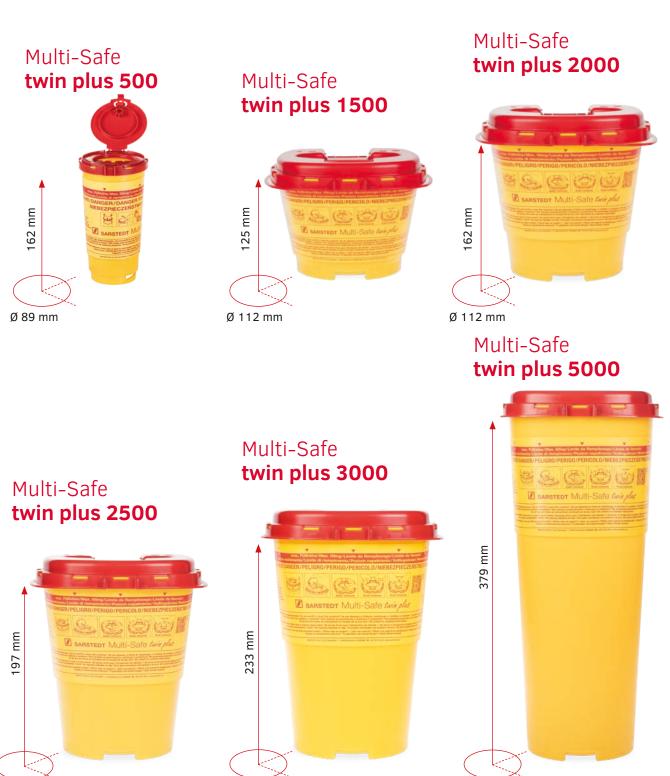




You can find the certifications of the boxes in the overview on page 26. $^{*}\!twin$ plus 5000 REC min. 15 % recycled content.







Ø 112 mm

Ø 112 mm

Ø 112 mm



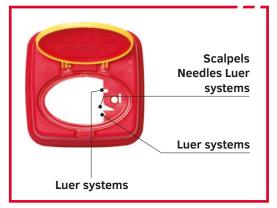
Multi-Safe twin plus

Tulu-3	ale twill plus					
Volume	Material	Design	Piece(s)/ case	Piece(s)/ pallet	Case dimensions	Order no
0.5 l	Polypropylene	Multi-Safe twin plus 500	126	3,024	59.9 x 26.6 x 45.1 cm	77.3884.005
0.5 l	Polypropylene	Multi-Safe twin plus 500 with biohazard labelling	126	3,024	59.9 x 26.6 x 45.1 cm	77.3884.105
0.5 l	Recycled polypropylene	Multi-Safe twin plus 500 REC	126	3,024	59.9 x 26.6 x 45.1 cm	77.3884.205
0.5 l	Recycled polypropylene	Multi-Safe twin plus 500 REC with biohazard labelling	126	3,024	59.9 x 26.6 x 45.1 cm	77.3884.305
1.5 l	Polypropylene	Multi-Safe twin plus 1500	94	1,128	80 x 40 x 38 cm	77.3884.01
1.5 l	Polypropylene	Multi-Safe twin plus 1500 with biohazard labelling	94	1,128	80 x 40 x 38 cm	77.3884.11
1.5 l	Recycled polypropylene	Multi-Safe twin plus 1500 REC	94	1,128	80 x 40 x 38 cm	77.3884.21
1.5 l	Recycled polypropylene	Multi-Safe twin plus 1500 REC with biohazard labelling	94	1,128	80 x 40 x 38 cm	77.3884.315
2.0	Polypropylene	Multi-Safe twin plus 2000	80	960	80 x 40 x 38 cm	77.3884.020
2.0	Polypropylene	Multi-Safe twin plus 2000 with biohazard labelling	80	960	80 x 40 x 38 cm	77.3884.120
2.0	Recycled polypropylene	Multi-Safe twin plus 2000 REC	80	960	80 x 40 x 38 cm	77.3884.22
2.0	Recycled polypropylene	Multi-Safe twin plus 2000 REC with biohazard labelling	80	960	80 x 40 x 38 cm	77.3884.320
2.5 l	Polypropylene	Multi-Safe twin plus 2500	70	840	80 x 40 x 38 cm	77.3884.02
2.5 l	Polypropylene	Multi-Safe twin plus 2500 with biohazard labelling	70	840	80 x 40 x 38 cm	77.3884.12
2.5 l	Recycled polypropylene	Multi-Safe twin plus 2500 REC	70	840	80 x 40 x 38 cm	77.3884.225
2.5 l	Recycled polypropylene	Multi-Safe twin plus 2500 REC with biohazard labelling	70	840	80 x 40 x 38 cm	77.3884.325
3.0	Polypropylene	Multi-Safe twin plus 3000	62	744	80 x 40 x 38 cm	77.3884.03
3.0 l	Polypropylene	Multi-Safe twin plus 3000 with biohazard labelling	62	744	80 x 40 x 38 cm	77.3884.13
3.0 l	Recycled polypropylene	Multi-Safe twin plus 3000 REC	62	744	80 x 40 x 38 cm	77.3884.23
3.0 l	Recycled polypropylene	Multi-Safe twin plus 3000 REC with biohazard labelling	62	744	80 x 40 x 38 cm	77.3884.330
5.0 l	Polypropylene	Multi-Safe twin plus 5000	34	408	80 x 40 x 38 cm	77.3884.050
5.0 l	Polypropylene	Multi-Safe twin plus 5000 with biohazard labelling	34	408	80 x 40 x 38 cm	77.3884.150
5.0 l	Recycled polypropylene	Multi-Safe twin plus 5000 REC	34	408	80 x 40 x 38 cm	77.3884.250
5.0 l	Recycled polypropylene	Multi-Safe twin plus 5000 REC with biohazard labelling	34	408	80 x 40 x 38 cm	77.3884.350

Multi-Safe euroMatic®

Innovative design and engineering – The Premium Model





euroMatic® 7000





Multi-Safe euroMatic®

Volume	Material	Design	Piece(s)/ case	Piece(s)/ pallet	Case dimensions	Order no
7.0 l	Polypropylene	Multi-Safe euroMatic [®] 7000	34	306	80.2 x 39.2 x 51.4 cm	77.3897.070
7.0 l	Polypropylene	Multi-Safe euroMatic [®] 7000 with biohazard labelling	34	306	80.2 x 39.2 x 51.4 cm	77.3897.270
6.0 l	Polypropylene	Multi-Safe euroMatic [®] 6000	40	360	80.2 x 39.2 x 51.4 cm	77.3897.060
6.0 l	Polypropylene	Multi-Safe euroMatic [®] 6000 with biohazard labelling	40	360	80.2 x 39.2 x 51.4 cm	77.3897.260
4.0	Polypropylene	Multi-Safe euroMatic [®] 4000	50	450	80.2 x 39.2 x 51.4 cm	77.3897.040
4.0 l	Polypropylene	Multi-Safe euroMatic [®] 4000 with biohazard labelling	50	450	80.2 x 39.2 x 51.4 cm	77.3897.240
3.0	Polypropylene	Multi-Safe euroMatic [®] 3000	55	495	80.2 x 39.2 x 51.4 cm	77.3897.030
3.0 l	Polypropylene	Multi-Safe euroMatic [®] 3000 with biohazard labelling	55	495	80.2 x 39.2 x 51.4 cm	77.3897.230

Multi-Safe medi

Large volume box with handle and label

Round container form

- The large, round footprint eliminates the need for additional holders
- Various designs add word available (with or without handle, additional label)
- Closures have been developed so that they automatically stay on opening, freeing the disposal opening the disposal opening
- Side grooves at the top edge visually confirm the closure of the container
- Various stripping/detaching devices

In the future will also be available as a sustainable version made from recycled plastic!



Multi-Safe medi 6







Multi-Safe medi							
Volume	Material	Design	Piece(s)/ case	Piece(s)/ pallet	Case dimensions	Order no	
11.0	Polypropylene	Multi-Safe medi 11	-	250	-	77.3898.011	
11.0	Polypropylene	Multi-Safe medi 11	10	160	39.5 x 43.0 x 58.5 cm	77.3898.511	
11.0	Polypropylene	Multi-Safe medi 11 with handle	-	250	-	77.3898.111	
6.0 l	Polypropylene	Multi-Safe medi 6	-	480	-	77.3898.006	
6.0 l	Polypropylene	Multi-Safe medi 6	21	336	39.5 x 43.0 x 58.5 cm	77.3898.506	
6.0 l	Polypropylene	Multi-Safe medi 6 with handle	-	480	-	77.3898.106	
6.0 l	Polypropylene	Multi-Safe medi 6 with handle and label	21	336	39.5 x 43.0 x 58.5 cm	77.3898.206	

*UN testing only medi 6, medi 6 with handle, medi 6 with handle and label

Multi-Safe eco

A safe and stable container for the disposal of clinical waste

- Rectangular container secure
- No additional holders are needed due to the large footprint.
- Various designs
- Multi-Safe 25 & 50 lid-in-lid system provides vary disposal opening
- The liquid-tight final closure is ensured by the adhesive strip fastened to the side of the lid.
- Side grooves at the edge visually confirm the closure of the container
- Stackable, both empty and filled
- Suitable for oncological waste and cytostatic drugs
- Collection and transport container for small disposal boxes

Multi-Safe 25





Multi-Safe eco

Multi-Su				
Volume	Material	Design	Piece(s)/pallet	Order no
50.0 l	Polypropylene	Multi-Safe eco 50	125	77.3899.050
25.0	Polypropylene	Multi-Safe eco 25	160	77.3899.025
50.0 l	Polypropylene	Multi-Safe 50	125	77.3899.150
25.0	Polypropylene	Multi-Safe 25	160	77.3899.125

Multi-Safe steri

Huge, practical, safe, autoclavable

Rectangular container

- No additional holders are necessary due to the large footprint.
- Safe and stable for the disposal of infectious waste
- Autoclave-safe at 121°C to 134°C
- Small lid melts at around 90°C and releases the autoclave process through a grid
- The small lids can be purchased additionally to label boxes that have already been autoclaved (77.3888.800 - yellow; other colours are possible)
- Easy to transport with handles in the bottom and top section
- Side grooves on the lid visually confirm the closure
- Stackable, both empty and filled
- Collection and transport container for small disposal boxes

Multi-Safe steri 35



UN CERTIFIED



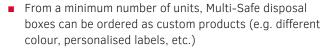
Multi-Safe steri 60

Multi-Safe steri

Volume	Material	Design	Piece(s)/pallet	Order no
60.0 l	Polypropylene	Multi-Safe steri 60	120	77.3899.060
35.0 l	Polypropylene	Multi-Safe steri 35	150	77.3899.035

Custom products

Customised Multi-Safe disposal box



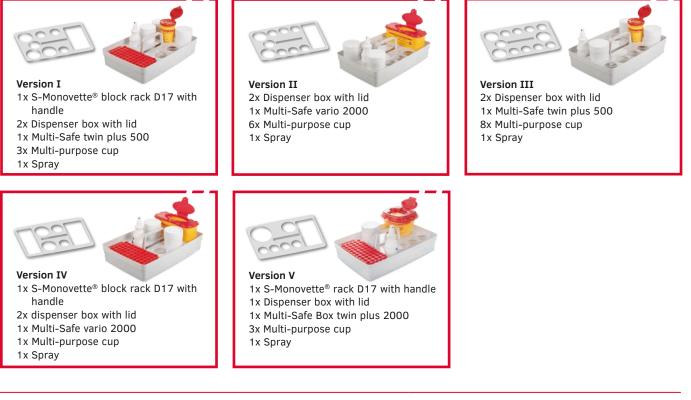
 Additional certification with your company address exclusively for your Multi-Safe disposal box can also be requested.

Multi-Safe and Multi-Safe eco are not available in special colours.

 If you have any questions about your customised Multi-Safe disposal box, your personal SARSTEDT contact or our hotline will be happy to help you.

R/PELIGRO/PERIGO/PERICOLO/NIEBEZPI

Safety tray



Safety tray

Design	Dimensions	piece(s)/case	Order no
Safety tray without insertion plate	429 x 283 x 80 mm	1/box	93.1650
Version I	-	1/box	93.1650.010
Version II	-	1/box	93.1650.020
Version III	-	1/box	93.1650.030
Version IV	-	1/box	93.1650.040
Version V	-	1/box	93.1650.050

Accessories

Material	Design	piece(s)/ case	Order no	Order no. recycled
Multi-Safe twin plus 500	0.5 l suitable for versions I and III	126	77.3884.005 77.3884.105	77.3884.205 77.3884.305
Multi-Safe vario 2000	2.0 I suitable for versions II and IV	50	77.3893.020 77.3893.120	77.3893.220 77.3893.420
Multi-Safe twin plus 2000	2.0 I suitable for version V	80	77.3884.020 77.3884.120	77.3884.220 77.3884.320
Dispenser box	With lid for Safety Tray	35	95.813.001	
Multi-purpose cup	125 ml for Safety Tray	1,000	75.1355	
Block D17	With handle, grey	12	93.851	
Block D17	With handle, red	12	93.851.171	
Block D17	With handle, yellow	12	93.851.172	
Block D17	With handle, green	12	93.851.173	
Block D17	With handle, blue	12	93.851.174	
Block D17	With handle, orange	12	93.851.175	

Accessories

For simple and secure mounting to walls, tables or smooth surfaces

Wall holder

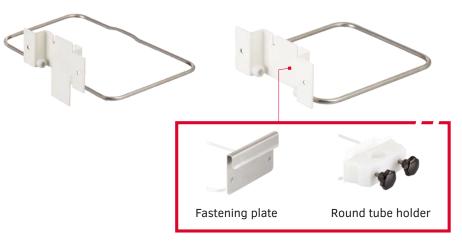
Adhesive adapter







Wall holder twin plus* Wall holder vario 2000* Wall holder euroMatic®



Suitable for series

Wall holder Order no Article description Material piece(s)/case 9 9 9 9 9

95.965.001	Adhesive adapter	Polypropylene	150	twin plus, euroMatic®
95.963	Wall holder with adhesive adapter	stainless steel	30	twin plus
95.963.001	Wall holder euroMatic®	stainless steel	20	euroMatic®
95.963.006	Round tube holder	POM	10	twin plus, euroMatic [®] , vario
95.963.005	Fastening plate	stainless steel	20	twin plus, euroMatic [®] , vario
95.963.007	Wall holder twin plus	stainless steel	20	twin plus
95.963.020	Wall holder vario 2000	stainless steel	5	vario

*Round tube holder and fastening plate also suitable for the twin plus and vario wall holders

Multi-Safe label



This label can be ordered in addition to the disposal boxes.

Absorbent materials



ISO 23907 requires the following absorbent materials to be placed in the disposal box to prevent the leakage of liquid residue (does not apply for twin plus series). It is important to ensure that adequate absorbent material is used to cover the entire fill volume of a box.

Label			
Article description	Piece(s)/inner box	Units/box	Order no
Label 70 x 80 mm	2,000	8.000	84.1390.022

Absorbent materials (ISO 23907)

Absorption	Minimum order quantity (pieces)	for Multi-Safe	Order no
16 ml per unit	1,000	euroMatic®	78.669
9 ml per piece	2,000	sani, mini	78.684
1,200 ml per unit	100	euroMatic [®] (6.0 and 7.0 litres), medi	95.1712



Accessories information www.sarstedt.com/en/products/ diagnostic/multi-safe/accessories/

OVERVIEW

Volume	Box type	Tests TRBA 250	UN	ISO 23907	Height	Ø of lid	Ø of base
0.2	Multi-Safe sani 200	1	1	1	131 mm	75 x 47 mm	57 x 32 mm
0.3	Multi-Safe mini 300	1	1	1	160 mm	98 mm	41 x 77 mm
2.0	Multi-Safe vario 2000	1	1	1	140 mm	243 x 102 mm	95 x 240 mm
0.5	Multi-Safe twin plus 500	1	1	1	162 mm	89 mm	57 mm
1.5	Multi-Safe twin plus 1500	1	1	 Image: A second s	125 mm	179 x 176 mm	112 mm
2.0	Multi-Safe twin plus 2000	1	1	1	162 mm	179 x 176 mm	112 mm
2.5 l	Multi-Safe twin plus 2500	1	1	1	197 mm	179 x 176 mm	112 mm
3.0	Multi-Safe twin plus 3000	1	1	1	233 mm	179 x 176 mm	112 mm
5.0 l	Multi-Safe twin plus 5000	1	1	1	379 mm	179 x 176 mm	112 mm
3.0	Multi-Safe euroMatic [®] 3000	1	1	1	185 mm	166 x 43 mm	132 x 132 mm
4.0	Multi-Safe euroMatic [®] 4000	1	1	1	245 mm	166 x 43 mm	132 x 132 mm
6.0 l	Multi-Safe euroMatic [®] 6000	1	1	1	330 mm	166 x 43 mm	132 x 132 mm
7.0	Multi-Safe euroMatic [®] 7000	1	1	1	390 mm	166 x 43 mm	132 x 132 mm
6.0 l	Multi-Safe medi 6	1	1	1	195 mm	230 mm	190 mm
11.0	Multi-Safe medi 11	1	-	1	220 mm	290 mm	257 mm
6.0 l	Multi-Safe medi 6	1	1	 Image: A second s	195 mm	230 mm	190 mm
6.0 l	Multi-Safe medi 6 with handle	1	1	1	195 mm	230 mm	190 mm
11.0	Multi-Safe medi 11 with handle	1	-	 Image: A start of the start of	220 mm	290 mm	257 mm
6.0 l	Multi-Safe medi 6, handle, label	1	1	 Image: A second s	195 mm	230 mm	190 mm
11.0	Multi-Safe medi 11	1	-	1	220 mm	290 mm	257 mm
25.0 l	Multi-Safe eco 25	-	1	-	260 mm	295 x 395 mm	230 x 330 mm
50.0 l	Multi-Safe eco 50	-	1	-	500 mm	295 x 395 mm	230 x 330 mm
35.0 l	Multi-Safe steri 35	-	1	-	330 mm	393 x 393 mm	340 x 340 mm
60.0 l	Multi-Safe steri 60	-	1	-	520 mm	393 x 393 mm	340 x 340 mm
25.0 l	Multi-Safe 25	-	1	-	260 mm	295 x 395 mm	230 x 330 mm
50.0 l	Multi-Safe 50	-	1	-	500 mm	295 x 395 mm	230 x 330 mm

Piece(s)/carton	Piece(s)/pallet	Order no	Order no. with biohazard	Order no. recycled	Order no. recycled, with biohazard
110	3,300	77.3890.002	Not available, as no label	77.3890.202	Not available, as no label
135	2,700	77.3890.003	Not available, as no label	77.3890.203	Not available, as no label
50	1,000	77.3893.020	77.3893.120	77.3893.220	77.3893.420
126	3,024	77.3884.005	77.3884.105	77.3884.205	77.3884.305
94	1,128	77.3884.015	77.3884.115	77.3884.215	77.3884.315
80	960	77.3884.020	77.3884.120	77.3884.220	77.3884.320
70	840	77.3884.025	77.3884.125	77.3884.225	77.3884.325
62	744	77.3884.030	77.3884.130	77.3884.230	77.3884.330
34	408	77.3884.050	77.3884.150	77.3884.250	77.3884.350
55	495	77.3897.030	77.3897.230		
50	450	77.3897.040	77.3897.240		
40	360	77.3897.060	77.3897.260		
34	306	77.3897.070	77.3897.270		
-	480	77.3898.006			
-	250	77.3898.011			
21	336	77.3898.506			
-	480	77.3898.106			
-	250	77.3898.111			
21	336	77.3898.206			
10	160	77.3898.511			
-	160	77.3899.025			
-	125	77.3899.050			
-	150	77.3899.035			
-	120	77.3899.060			
 -	160	77.3899.125			
-	125	77.3899.150			

Handling

Safe handling of euroMatic[®], steri, medi and twin plus disposal boxes



Centre the lid on the lower section of the box. The red day lid and the handle face forwards.





Simultaneously push on the opposite corners of the lid to join to lower box section. The lid must be pressed in evenly along all edges, until it audibly and visibly locks into place.

Safe handling of the medi disposal boxes





Centre the lid on the lower section of the box. The yellow day lid faces forwards.

Simultaneously push on the opposite corners of the lid to to join to lower box section

The lid must be pressed in evenly along all edges, until it audibly and visibly locks into place.

Safe handling of eco / Multi-Safe disposal boxes (lid-in-lid)



Centre the lid on the lower section of the box.



Simultaneously push on the opposite corners of the lid to join to lower box section.



The lid must be pressed in evenly along all edges, until it audibly and visibly locks into place.

Day closure

1 x lock into place (for reuse)





2 x lock into place (completely sealed)





Multi-Safe Instructions for Use

Intended use: The disposal container is exclusively intended to dispose of pointed and sharp objects, such as needles and scalpel blades from the medical field.

Safety instructions

- Only use containers of a size that is suitable for holding the items to be disposed of.
- Store the box out of the reach of children.
- The lid must be on the container and locked into place before it is filled.
- Connect containers with the recommended adhesive adapter by rotating or hanging in the wall holder to prevent accidents.
- Do not use the day lid to press down the items to be disposed of.
- Scalpels must be disposed of in the container with particular care. If too much force is used when throwing scalpels in or if other items are placed on top, there is a risk of the angle changing and damaging the container walls or the base of the container.
- Only place items to be disposed of upright in the container.
- Do not press items into the container with force.
- Do not place any liquids in the container.
- Do not fill the box above the fill line (risk of injury!).
- Do not place hands or any other objects in the container (risk of injury).
- Do not throw the box. Do not shake the box. Do not drop the box.
- Before sealing the container, ensure that no items are projecting through the opening.
- Close the box by hand, without applying too much force.
- Do not push the box against your body (e.g. chest) for the final closure.
- Do not compress a full box.
- Use the handle.
- Before disposing of the box, check carefully that the lid is tightly closed.

ISO 23907

• One of the absorbent liners from page 25 must be used to ensure the compliant use of the box.

Disposal and the environment

- Plastics used in our products are environmentally neutral in terms of disposal.
- The plastic can be sent to landfill, as they do not release any harmful substances into the air, earth or water.
- When disposed of in incinerators, the plastics PS, PP, PC and PE serve as valuable sources of energy to maintain the temperature in the combustion chamber - the more plastic in the waste, the less heating oil is used. Burning these plastics does not release any hazardous emissions.



Only fill the Multi-Safe container to about 2/3 of its volume. Do not overfill the Multi-Safe: Risk of injury!



Material info

	Polystyrene	Polypropylene	Polycarbonate	Polyethylene	
Abbreviation	PS	PP	PC	HD-PE High Density LD-PE Low Density	
Optical properties	Transparent, shiny surface with 90% light transmission (at 400-800 nm)	Translucent, shiny surface	Transparent, 88% light trans- mission (at 400-800 nm)	Translucent to opaque, waxy surface	
General mechanical properties	Low elongation at break and thermal resistance, very good electrical insulating proper- ties, not suitable for high centrifuge speeds	High level of break resistance, resistant to stress cracking, stable form and high rigidity	Very good mechanical, optical, electrical and thermal proper- ties, can be autoclaved and sterilised	Relatively low tensile strength and surface hardness, high toughness, soft to firm, sensi- tive to stress cracking, water-repellent	
Autoclavability	Not suitable	Products made of PP can be autoclaved up to 121°C with- out any appreciable loss of mechanical properties. The user must check whether other product characteristics are affected with regard to the desired use.	Products made of PC can be autoclaved up to 121 °C with- out any appreciable loss of mechanical properties. The user must check whether other product characteristics are affected with regard to the desired use.	Not suitable	
Max. temperature for contentious use ^{*1}	60 - 70°C	100 - 110°C	115 - 125°C	HD-PE 70 - 80°C LD-PE 60 - 75°C	
Temporary maximum temperature for use*1	75 - 80°C	120 - 140°C	125 - 140°C	HD-PE 90 - 120 °C LD-PE 80 - 90 °C	
Use at sub-zero tem- peratures ^{*2}	Not well-suited	Limited suitability*1	down to -80°C	Limited suitability*1	
Density g/cm ³	1.05	0.90	1.19	HD-PE 0.95 LD-PE 0.92	
Flammability	Flammable	Flammable	Flammable	Flammable	
	300 - 400°C	300 - 360°C	380 - 450°C	350 - 360°C	
Moisture absorption	< 0.1%	< 0.1%	0.1 - 0.3%	< 0.1%	
General resistance to chemicals	PS is resistant to saline solu- tions, alkaline solutions, non-oxidising acids, alkalis and alcohols. Benzine, volatile oils, strongly oxidising agents and flavourings attack PS, resulting in stress cracking.	PP is resistant to aqueous solutions of inorganic salts, acids, alkalis and to organic solvents up to 60°C. Alcohols, esters and ketones also do not attack PP. Aromatic and halo- genated hydrocarbons, oxidising substances such as concentrated nitric acid and fats, oils and waxes at high temperatures cause PP to swell.	PC is resistant to higher con- centrations of mineral acids, many organic acids (e.g. car- bonic acid, oleic acid and citric acid), oxidants, reducing agents, neutral and acidic saline solutions, a range of fats and oils, saturated, aliphatic and cycloaliphatic hydrocar- bons and alcohols (except methanol). Bases, ammonia gas and its soluble form, and amines attack PC. PC is soluble in a range of industrial sol- vents. Other organic com- pounds such as benzene, acetone and carbon tetrachlo- ride may lead to expansion or swelling.	Concentrated, oxidising acids, such as nitric acid and halogens have a disintegrating	
Disposal	PS is a pure hydrocarbon compound and thus environmentally neutral in terms of disposal. The controlled burning of this plastic does not release any hazardous emissions.	PP is a pure hydrocarbon compound and thus environmentally neutral in terms of disposal. The controlled burning of this plastic does not release any hazardous emissions.	PP is a pure hydrocarbon compound and thus environmentally neutral in terms of disposal. The controlled burning of this plastic does not release any hazardous emissions.	PE is a pure hydrocarbon compound and thus environmentally neutral in terms of disposal. The controlled burning of this plastic does not release any hazardous emissions.	

 $^{\ast_1}\,$ Suitability depends on the type of plastic used and the type of stress load

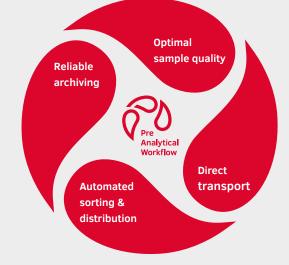
^{*2} Warning: The plastic becomes brittle at sub-zero temperatures. The use of products at sub-zero temperatures should be tested in advance for the relevant application. This information is intended as a guide and does not guarantee product properties.

If you have any questions, we'll be happy to help!

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