thermoscientific

Thermo Scientific Small Benchtop Rotors

for Thermo Scientific Megafuge 8 / 8R,

Sorvall ST 8 / 8R and SL 8 / 8R Centrifuges

Instruction Manual

50143334-f • 06 / 2021

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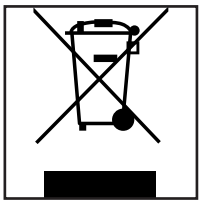
ThermoFisher SCIENTIFIC

WEEE Compliance

This product is required to comply with the European Union's Waste Electrical & Electronic Equipment (WEEE) Directive 2012/19/EU. It is marked with the following symbol:



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Preface

Before starting to use a rotor, read through this instruction manual carefully and follow the instructions.

Failure to follow the instructions and safety information in this instruction manual will result in the expiration of the sellers warranty.

Intended Use

This centrifuge is a laboratory product used to separate substance mixtures of different densities.

This centrifuge has to be operated by trained specialists only.

Precautions

In order to ensure safe operation of these Thermo Scientific small benchtop rotors, the following general safety regulations must be followed:

- Do not remove any components of the rotor.
- Do not use rotors which show any signs of corrosion and/or cracks. Do not touch the electronic components of the centrifuge and do not make any changes to the electronic or mechanical components.
- Use only with rotors which have been loaded properly.
- Never overload these rotors.
- Use only accessories which have been approved by Thermo Fisher Scientific. Exceptions to this rule are commercially available glass or plastic centrifuge tubes, provided they have been approved for the speed or the RCF value of the rotor.
- Observe the safety instructions.

Pay particular attention to the following aspects:

- Rotor installation: Check that the rotor is locked properly into place before operating the centrifuge.
- Always balance the samples.

  Maximum sample density at maximum speed: 1.2 $\frac{g}{cm^3}$

⚠	**CAUTION**
Due to the air friction the temperature of rotor may raise significantly while the centrifuge is spinning. Ventilated units will always lead to temperature increase compared to ambient temperatures. Refrigerated units have limitations in cooling capabilities. Displayed and set temperature can deviate from sample temperature. Sample temperature might exceed critical temperature of your application.	

WARNING

The magnets built into the rotors can have a negative effect on active implants, such as cardiac pacemakers.

The magnets are mounted on the bottom of the rotor.

Always keep a distance of 20 cm between the rotor and the active implant, as the product generates permanent magnetic fields. The magnetic field strength at a distance of 20 cm is less than 0.1 mT, so there should be no interference.

Symbols Used in the manual

This symbol refers to general hazards.

CAUTION means that material damage could occur.

WARNING means that injuries or material damage or contamination could occur.

This symbol refers to biological hazards.

Observe the information contained in the instruction manual to keep yourself and your environment safe.

Thermo Scientific Rotor Specifications

There are several Thermo Scientific™ small benchtop rotors available for the Thermo Scientific Megafuge™ 8 / 8R centrifuge, the Thermo Scientific Sorvall™ ST 8 / 8R centrifuge and the Thermo Scientific SL 8 / 8R centrifuge.

Thermo Scientific Rotors	Article No.
TX-150 swinging bucket rotor	75005701
TX-150 round buckets	75005702
TX-150 50mL conical buckets	75005703
TX-100S clinical swinging bucket rotor with sealed carriers	75005704
TX-100 clinical swinging bucket rotor with carriers	75005705
M10 microplate swinging bucket rotor	75005706
M10 buckets	75005723
M10 sealed buckets	75005721
MT-12 microtube swinging bucket rotor	75005600
HIGHConic III fixed angle rotor	75005709
CLINIConic fixed angle rotor	75003623
MicroClick 18 x 5 microtube rotor	75005765
MicroClick 24 x 2 microtube rotor	75005715
MicroClick 30 x 2 microtube rotor	75005719
Microliter 48 x 2 microtube rotor	75003602
8 x 8 PCR Strip rotor	75005720
8 x 50 mL Individually Sealed rotor	75003694
Hematocrit rotor*	75005733

* Look at the separate Thermo Scientific Hematocrit Rotor Instruction Manual for specific data and instructions.

TX-150

Items Supplied

Article No.	Item	Quantity
75005701	**TX-150 Rotor**	1
75003786	Bolt Grease	1
50139640	Instruction Manual	1

If any parts are missing, please contact the nearest Thermo Fisher Scientific representative.

Technical Data

TX-150 with round buckets

Megafuge 8R, Sorvall ST 8R and SL 8R Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	2.9 kg	2.9 kg	2.9 kg
Maximum Permissible Load	4 x 190 g	4 x 190 g	4 x 190 g
Maximum Speed n_{max}	4500 rpm	4500 rpm	4500 rpm
Maximum RCF-Value at n_{max}	3260 x g	3260 x g	3260 x g
K-Factor at n_{max}	12968	12968	12968
Max. Cycle Number	50000	50000	50000
Radius max. / min.	144 mm / 51 mm	144 mm / 51 mm	144 mm / 51 mm
Angle	90°	90°	90°
Acceleration / Braking Time	20 s / 30 s	20 s / 30 s	20 s / 30 s
Maximum Speed at 4 °C	50 Hz: 4500 rpm 60 Hz: 4500 rpm	60 Hz: 4500 rpm	50 Hz: 4500 rpm 60 Hz: 4500 rpm
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	50 Hz: < 4 °C 60 Hz: < 4 °C	60 Hz: < 4 °C	50 Hz: < 4 °C 60 Hz: < 4 °C
Aerosol-tight	Optional	Optional	Optional
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

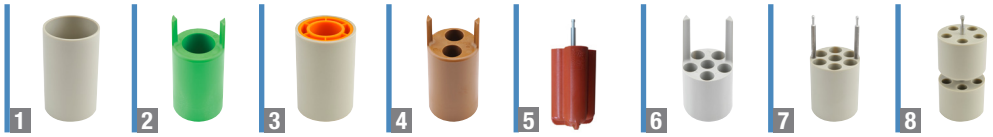
Megafuge 8, Sorvall ST 8 and SL 8 Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	2.9 kg	2.9 kg	2.9 kg
Maximum Permissible Load	4 x 190 g	4 x 190 g	4 x 190 g
Maximum Speed n_{max}	4500 rpm	4500 rpm	4500 rpm
Maximum RCF-Value at n_{max}	3260 x g	3260 x g	3260 x g
K-Factor at n_{max}	12968	12968	12968
Max. Cycle Number	50000	50000	50000
Radius max. / min.	144 mm / 51 mm	144 mm / 51 mm	144 mm / 51 mm
Angle	90°	90°	90°
Acceleration / Braking Time	12 s / 18 s	13 s / 19 s	13 s / 19 s
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	5 °C	5 °C	5 °C
Aerosol-tight	Yes	Yes	Yes
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

TX-150 with conical buckets

Megafuge 8R, Sorvall ST 8R and SL 8R Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	2.9 kg	2.9 kg	2.9 kg
Maximum Permissible Load	4 x 150 g	4 x 150 g	4 x 150 g
Maximum Speed n_{max}	4500 rpm	4500 rpm	4500 rpm
Maximum RCF-Value at n_{max}	3260 x g	3260 x g	3260 x g
K-Factor at n_{max}	14532	14532	14532
Max. Cycle Number	50000	50000	50000
Radius max. / min.	144 mm / 45 mm	144 mm / 45 mm	144 mm / 45 mm
Angle	90°	90°	90°
Acceleration / Braking Time	20 s / 30 s	20 s / 30 s	20 s / 30 s
Maximum Speed at 4 °C	50 Hz: 4500 rpm 60 Hz: 4500 rpm	60 Hz: 4500 rpm	50 Hz: 4500 rpm 60 Hz: 4500 rpm
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	50 Hz: < 4 °C 60 Hz: < 4 °C	60 Hz: < 4 °C	50 Hz: < 4 °C 60 Hz: < 4 °C
Aerosol-tight	Optional	Optional	Optional
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Megafuge 8, Sorvall ST 8 and SL 8 Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	2.9 kg	2.9 kg	2.9 kg
Maximum Permissible Load	4 x 150 g	4 x 150 g	4 x 150 g
Maximum Speed n_{max}	4500 rpm	4500 rpm	4500 rpm
Maximum RCF-Value at n_{max}	3260 x g	3260 x g	3260 x g
K-Factor at n_{max}	14532	14532	14532
Max. Cycle Number	50000	50000	50000
Radius max. / min.	144 mm / 45 mm	144 mm / 45 mm	144 mm / 45 mm
Angle	90°	90°	90°
Acceleration / Braking Time	12 s / 18 s	13 s / 19 s	13 s / 19 s
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	7 °C	7 °C	7 °C
Aerosol-tight	No	No	No
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Accessories



	Article No.	Description	Rotor Capacity (places x volume, mL)	Max Tube Dimensions (Ø x L, mm)
	75005703	50 mL Conical Buckets (unsealed, no adapter needed) (set of 4)	8 x 50	29.5 x 120
	75005702	Round Buckets (set of 4)	4 x 145	50 x 100
	75005707	Click Seal Biocontainment Lids for Round Buckets (set of 4)		
	75005724	Replacement O-rings for Lids (set of 4)		
	Adapters for 50 mL Conical Buckets (sets of 2)			
	75005808	15 mL Conical Tube	8 x 15	17 x 123
	Adapters for Round Buckets (sets of 4)			
	Direct fit	145 mL Bottle (75005734)	4 x 145	50 x 100
1	75005735	100 mL Round Bottom Open-Top Tube	4 x 100	45 x 117
2	75005736	50 mL Conical or Skirted Tube	4 x 50	29.5 x 120
3	75005744	30 mL Sterilin™ Universal Container	4 x 30	25 x 120
4	75005737	15 mL Conical Tube	8 x 15	17 x 122
4	75005737	11 mL IVF Tube	8 x 11	17 x 122
5	75003504	13 mL Urine Tube	16 x 13	17 x 110
5	75003504	12 mL Blood Collection Tube (Greiner™)	16 x 12	17 x 110
5	75003504	10 mL Blood Collection or 15 mL Corex™/Kimble™ Tube	16 x 15	17 x 110
6	75005739	5/7 mL Blood Collection Tube	24 x 5/7	13 x 110
7	75005740	3/5 mL Blood Collection Tube or Cryotube	28 x 3/5	13 x 110
8	75005743	1.5/2 mL Microtube (or Microtainer™ tube)	40 x 2	11 x 65
	Rotor Packages			
	75005760	**Cell Culture Package,** INCLUDES: TX-150 Rotor (75005701), Round Buckets (75005702), Adapters for 50 mL Conical Tubes (75005736)	4 x 50	29.5 x 120
	75005761	**High Capacity Cell Culture Package,** INCLUDES: TX-150 Rotor (75005701), Conical Buckets (75005703), Adapters for 15 mL Conical Tubes (75005808)	8 x 50	18 x 124
	75005762	**Clinical Rotor Package,** INCLUDES: TX-150 Rotor (75005701), Round Buckets (75005702), ClickSeal Biocontainment Lids (75005707), Adapters for Blood Collection Tubes: 5/7 mL (75005739) and 10 mL (75005738)	24 x 5/7	18 x 124

Biocontainment Certificate

Health Protection Agency
Microbiology Services
Porton Down
Salisbury
Wiltshire
SP4 0JG

Certificate of Containment Testing

Containment Testing of 75005702 Bucket and 75005707 Cap in a Swing-out Rotor in a Thermo Scientific Centrifuge

Report No. 194-12 E

Report Prepared For: Thermo Fisher Scientific
Issue Date: 31st October 2012

Test Summary

A 75005702 bucket and 75005707 cap in a swing-out rotor was containment tested in a Thermo Scientific centrifuge at 4,500 rpm, using Annex AA of IEC 61010-2-020:2006 (2nd Ed.). The sealed rotor was shown to contain all contents.

Report Written By	Report Authorised By
Anna Moy	
Name: Ms Anna Moy	**Name: Mrs Sara Speight**
Title: Biosafety Scientist	**Title: Senior Biosafety Scientist**

TX-100S

Items Supplied

Article No.	Item	Quantity
75005704	**TX-100S Rotor**	1
75003786	Bolt Grease	1
50139640	Instruction Manual	1
20059135	Carriers	4
50110911	Metal Sleeves	8
50110924	Biocontainment Lids	8
20059364	O-Rings	8
76001803	Rubber Pads	8

If any parts are missing, please contact the nearest Thermo Fisher Scientific representative.

Technical Data

Megafuge 8R, Sorvall ST 8R and SL 8R Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	3.1 kg	3.1 kg	3.1 kg
Maximum Permissible Load	8 x 25 g	8 x 25 g	8 x 25 g
Maximum Speed n_{max}	4500 rpm	4500 rpm	4500 rpm
Maximum RCF-Value at n_{max}	3260 x g	3260 x g	3260 x g
K-Factor at n_{max}	14813	14813	14813
Max. Cycle Number	50000	50000	50000
Radius max. / min.	144 mm / 45 mm	144 mm / 45 mm	144 mm / 45 mm
Angle	90°	90°	90°
Acceleration / Braking Time	20 s / 30 s	20 s / 30 s	20 s / 30 s
Maximum Speed at 4 °C	50 Hz: 4500 rpm 60 Hz: 4500 rpm	60 Hz: 4500 rpm	50 Hz: 4500 rpm 60 Hz: 4500 rpm
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	50 Hz: < 4 °C 60 Hz: < 4 °C	60 Hz: < 4 °C	50 Hz: < 4 °C 60 Hz: < 4 °C
Aerosol-tight	Optional	Optional	Optional
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Megafuge 8, Sorvall ST 8 and SL 8 Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	3.1 kg	3.1 kg	3.1 kg
Maximum Permissible Load	8 x 25 g	8 x 25 g	8 x 25 g
Maximum Speed n_{max}	4500 rpm	4500 rpm	4500 rpm
Maximum RCF-Value at n_{max}	3260 x g	3260 x g	3260 x g
K-Factor at n_{max}	14258	14258	14258
Max. Cycle Number	50000	50000	50000
Radius max. / min.	144 mm / 44 mm	144 mm / 44 mm	144 mm / 44 mm
Angle	90°	90°	90°
Acceleration / Braking Time	12 s / 18 s	13 s / 19 s	13 s / 19 s
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	7 °C	7 °C	7 °C
Aerosol-tight	Yes	Yes	Yes
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Accessories

Article No.	**Description**	**Rotor Capacity (places x volume, mL)**	**Max Tube Dimensions (Ø x L, mm)**
Adapters for TX-100S Clinical Rotor (each)			
11172596	5/7 mL BD Hemogard™/BD Vacutainer™ Tube	16/8 x 5/7	13 x 110
11172595	5 mL BD Hemogard Tube	16/8 x 5	13 x 75
11172287	3 mL Blood Collection Tube	16/8 x 3	11 x 70
11172288	1.5/2 mL Microtube (or Microtainer™ tube)	16/8 x 1.5/2	10 x 41

Biocontainment Certificate

Health Protection Agency
Microbiology Services
Porton Down
Salisbury
Wiltshire
SP4 0JG

Certificate of Containment Testing

Containment Testing of 50110911 Tube and 50110924 Cap in a Swing-out Rotor in a Thermo Scientific Centrifuge

Report No. 194-12 F

Report Prepared For: Thermo Fisher Scientific
Issue Date: 31st October 2012

Test Summary

A 50110911 tube and 50110924 cap in a swing-out rotor was containment tested in a Thermo Scientific centrifuge at 4,500 rpm, using Annex AA of IEC 61010-2-020:2006 (2nd Ed.). The sealed rotor was shown to contain all contents.

Report Written By	Report Authorised By
Anna Moy	
Name: Ms Anna Moy	Name: Mrs Sara Speight
Title: Biosafety Scientist	Title: Senior Biosafety Scientist

TX-100

Items Supplied

Article No.	Item	Quantity
75005705	**TX-100 Rotor**	1
75003786	Bolt Grease	1
50139640	Instruction Manual	1
20059134	Carriers	4
50110904	Metal Sleeves	16
76001803	Rubber Pads	16

If any parts are missing, please contact the nearest Thermo Fisher Scientific representative.

Technical Data

Megafuge 8R, Sorvall ST 8R and SL 8R Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	3.3 kg	3.3 kg	3.3 kg
Maximum Permissible Load	16 x 25 g	16 x 25 g	16 x 25 g
Maximum Speed n_{max}	4500 rpm	4500 rpm	4500 rpm
Maximum RCF-Value at n_{max}	3260 x g	3260 x g	3260 x g
K-Factor at n_{max}	14258	14258	14258
Max. Cycle Number	50000	50000	50000
Radius max. / min.	144 mm / 46 mm	144 mm / 46 mm	144 mm / 46 mm
Angle	90°	90°	90°
Acceleration / Braking Time	20 s / 30 s	20 s / 30 s	20 s / 30 s
Maximum Speed at 4 °C	50 Hz: 4500 rpm 60 Hz: 4500 rpm	60 Hz: 4500 rpm	50 Hz: 4500 rpm 60 Hz: 4500 rpm
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	50 Hz: < 4 °C 60 Hz: < 4 °C	60 Hz: < 4 °C	50 Hz: < 4 °C 60 Hz: < 4 °C
Aerosol-tight	No	No	No
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Megafuge 8, Sorvall ST 8 and SL 8 Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	3.3 kg	3.3 kg	3.3 kg
Maximum Permissible Load	16 x 25 g	16 x 25 g	16 x 25 g
Maximum Speed n_{max}	4500 rpm	4500 rpm	4500 rpm
Maximum RCF-Value at n_{max}	3260 x g	3260 x g	3260 x g
K-Factor at n_{max}	14258	14258	14258
Max. Cycle Number	50000	50000	50000
Radius max. / min.	144 mm / 46 mm	144 mm / 46 mm	144 mm / 46 mm
Angle	90°	90°	90°
Acceleration / Braking Time	12 s / 18 s	13 s / 19 s	13 s / 19 s
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	7 °C	7 °C	7 °C
Aerosol-tight	No	No	No
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Accessories

Article No.	Description	Rotor Capacity (places x volume, mL)	Max Tube Dimensions (Ø x L, mm)
Adapters for TX-100 Rotor (each)			
Direct fit	13 mL Urine Tube	16/8 x 13	17 x 110
11172596	5/7 mL BD Hemogard™/BD Vacutainer™ Tube	16/8 x 5/7	13 x 110
11172595	5 mL BD Hemogard Tube	16/8 x 5	13 x 75
11172287	3 mL Blood Collection Tube	16/8 x 3	11 x 70
11172288	1.5/2 mL Microtube (or Microtainer™ tube)	16/8 x 1.5/2	10 x 41

M10

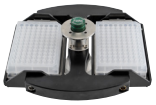
Items Supplied

Article No.	Item	Quantity
75005706	**M10 Rotor**	1
75003786	Bolt Grease	1
76003500	O-Ring Grease	1
50136940	Instruction Manual	1

If any parts are missing, please contact the nearest Thermo Fisher Scientific representative.

Technical Data

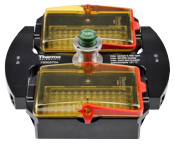
M10 with Standard Carriers



Megafuge 8R, Sorvall ST 8R and SL 8R Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	2.9 kg	2.9 kg	2.9 kg
Maximum Permissible Load	2 x 125 g	2 x 125 g	2 x 125 g
Maximum Speed n_{max}	4400 rpm	4400 rpm	4400 rpm
Maximum RCF-Value at n_{max}	2576 x g	2576 x g	2576 x g
K-Factor at n_{max}	5189	5189	5189
Max. Cycle Number	30000	30000	30000
Radius max. / min.	119 mm / 80 mm	119 mm / 80 mm	119 mm / 80 mm
Angle	90°	90°	90°
Acceleration / Braking Time	25 s / 25 s	20 s / 25 s	30 s / 25 s
Maximum Speed at 4 °C	50 Hz: 4400 rpm 60 Hz: 4400 rpm	60 Hz: 4400 rpm	50 Hz: 4400 rpm 60 Hz: 4400 rpm
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	50 Hz: < 4 °C 60 Hz: < 4 °C	60 Hz: < 4 °C	50 Hz: < 4 °C 60 Hz: < 4 °C
Aerosol-tight	Optional	Optional	Optional
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Megafuge 8, Sorvall ST 8 and SL 8 Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	2.9 kg	2.9 kg	2.9 kg
Maximum Permissible Load	2 x 125 g	2 x 125 g	2 x 125 g
Maximum Speed n_{max}	4400 rpm	4400 rpm	4400 rpm
Maximum RCF-Value at n_{max}	2576 x g	2576 x g	2576 x g
K-Factor at n_{max}	5189	5189	5189
Max. Cycle Number	30000	30000	30000
Radius max. / min.	119 mm / 80 mm	119 mm / 80 mm	119 mm / 80 mm
Angle	90°	90°	90°
Acceleration / Braking Time	15 s / 23 s	14 s / 23 s	14 s / 23 s
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	5 °C	5 °C	5 °C
Aerosol-tight	No	No	No
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

M10 with Biocontainment Carriers



Megafuge 8R, Sorvall ST 8R and SL 8R Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	2.9 kg	2.9 kg	2.9 kg
Maximum Permissible Load	2 x 300 g	2 x 300 g	2 x 300 g
Maximum Speed n_{max}	4400 rpm	4400 rpm	4400 rpm
Maximum RCF-Value at n_{max}	2576 x g	2576 x g	2576 x g
K-Factor at n_{max}	5189	5189	5189
Max. Cycle Number	30000	30000	30000
Radius max. / min.	119 mm / 63 mm	119 mm / 63 mm	119 mm / 63 mm
Angle	90°	90°	90°
Acceleration / Braking Time	25 s / 25 s	20 s / 25 s	30 s / 25 s
Maximum Speed at 4 °C	50 Hz: 4400 rpm 60 Hz: 4400 rpm	60 Hz: 4400 rpm	50 Hz: 4400 rpm 60 Hz: 4400 rpm
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	50 Hz: < 4 °C 60 Hz: < 4 °C	60 Hz: < 4 °C	50 Hz: < 4 °C 60 Hz: < 4 °C
Aerosol-tight	Optional	Optional	Optional
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Accessories

Article No.	**Description**	**Rotor Capacity (places x volume, mL)**	**Max Tube Dimensions (Ø x L, mm)**
75005723	Unsealed Buckets (set of 2)	4 Standard or 2 Midi-Deepwell	Height < 33 mm
75005721	Sealed Buckets (set of 2) R_{max} 109 mm	4 Standard or 2 Midi-Deepwell	Height < 33 mm

Biocontainment Certificate

Public Health England

Public Health England
Microbiology Services
Porton Down
Salisbury
Wiltshire
SP4 OJG

Certificate of Containment Testing

Containment Testing of Thermo Scientific M10 Swinging Bucket (75005721) and Sealing Caps (75005722) in a M10 rotor (75005706) in a Thermo Scientific Centrifuge

Report No. 76/13

Report Prepared For: Thermo Fisher Scientific
Issue Date: 13th February 2014

Test Summary

A Thermo Scientific M10 Swinging Bucket (75005721), Sealing Caps (75005722) and M10 rotor (75005706) were containment tested in a Thermo Scientific centrifuge at 4,400 rpm, using Annex AA of IEC 61010-2-020:2006 (2nd Ed.). The sealed buckets were shown to contain all contents.

Report Written By

Anna May

Name: Miss Anna Moy
Title: Biosafety Scientist

Report Authorised By

Name: Mrs Sara Speight
Title: Senior Biosafety Scientist

MT-12

Items Supplied

Article No.	Item	Quantity
75005600	**MT-12 Rotor**	1
50136940	Instruction Manual	1
70056346	ClickSeal Biocontainment Lid	1
20056966	Metal Sleeves	12

If any parts are missing, please contact the nearest Thermo Fisher Scientific representative.

Technical Data

Megafuge 8R, Sorvall ST 8R and SL 8R Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	1.8 kg	1.8 kg	1.8 kg
Maximum Permissible Load	12 x 4 g	12 x 4 g	12 x 4 g
Maximum Speed n_{max}	13000 rpm	13000 rpm	13000 rpm
Maximum RCF-Value at n_{max}	16438 x g	16438 x g	16438 x g
K-Factor at n_{max}	954	954	954
Max. Cycle Number	50000	50000	50000
Radius max. / min.	87 mm / 46 mm	87 mm / 46 mm	87 mm / 46 mm
Angle	90°	90°	90°
Acceleration / Braking Time	40 s / 50 s	40 s / 50 s	45 s / 50 s
Maximum Speed at 4 °C	50 Hz: 13000 rpm 60 Hz: 13000 rpm	60 Hz: 13000 rpm	50 Hz: 13000 rpm 60 Hz: 13000 rpm
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	50 Hz: 4 °C 60 Hz: < 4 °C	60 Hz: < 4 °C	50 Hz: < 4 °C 60 Hz: < 4 °C
Aerosol-tight	Yes	Yes	Yes
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Megafuge 8, Sorvall ST 8 and SL 8 Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	1.8 kg	1.8 kg	1.8 kg
Maximum Permissible Load	12 x 4 g	12 x 4 g	12 x 4 g
Maximum Speed n_{max}	13000 rpm	13000 rpm	13000 rpm
Maximum RCF-Value at n_{max}	16438 x g	16438 x g	16438 x g
K-Factor at n_{max}	954	954	954
Max. Cycle Number	50000	50000	50000
Radius max. / min.	87 mm / 46 mm	87 mm / 46 mm	87 mm / 46 mm
Angle	90°	90°	90°
Acceleration / Braking Time	27 s / 35 s	24 s / 33 s	24 s / 33 s
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	22 °C	22 °C	22 °C
Aerosol-tight	No	No	No
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

HIGHConic III

Items Supplied

Article No.	Item	Quantity
75005709	**HIGHConic III Rotor**	1
50139640	Instruction Manual	1
20059176	Biocontainment Lid	1
75003058	O-Ring Set	1
76003500	O-Ring Grease	1

If any parts are missing, please contact the nearest Thermo Fisher Scientific representative.

Technical Data

Megafuge 8R, Sorvall ST 8R and SL 8R Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	2.7 kg	2.7 kg	2.7 kg
Maximum Permissible Load	6 x 75 g	6 x 75 g	6 x 75 g
Maximum Speed n_{max}	9500 rpm	9500 rpm	9500 rpm
Maximum RCF-Value at n_{max}	12108 x g	12108 x g	12108 x g
K-Factor at n_{max}	2087	2087	2087
Max. Cycle Number	50000	50000	50000
Radius max. / min.	120 mm / 57 mm	120 mm / 57 mm	120 mm / 57 mm
Angle	45°	45°	45°
Acceleration / Braking Time	40 s / 45 s	45 s / 45 s	55 s / 45 s
Maximum Speed at 4 °C	50 Hz: 8700 rpm 60 Hz: 8700 rpm	60 Hz: 8700 rpm	50 Hz: 8700 rpm 60 Hz: 8700 rpm
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	50 Hz: < 4 °C 60 Hz: < 4 °C	60 Hz: < 4 °C	50 Hz: < 4 °C 60 Hz: < 4 °C
Aerosol-tight	Yes	Yes	Yes
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Megafuge 8, Sorvall ST 8 and SL 8 Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	2.7 kg	2.7 kg	2.7 kg
Maximum Permissible Load	6 x 75 g	6 x 75g	6 x 75g
Maximum Speed n_{max}	8700 rpm	8700 rpm	8700 rpm
Maximum RCF-Value at n_{max}	10155 x g	10155 x g	10155 x g
K-Factor at n_{max}	2488	2488	2488
Max. Cycle Number	50000	50000	50000
Radius max. / min.	120 mm / 57 mm	120 mm / 57 mm	120 mm / 57 mm
Angle	45°	45°	45°
Acceleration / Braking Time	28 s / 40 s	27 s / 40 s	27 s / 40 s
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	14 °C	14 °C	14 °C
Aerosol-tight	Yes	Yes	Yes
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Accessories

Article No.	Description	Rotor Capacity (places x volume, mL)	Max Tube Dimensions (Ø x L, mm)
75005731	Replacement Lid (each)		
75003058	Replacement Sealing O-rings (set of 2 with grease)		
Adapters for HIGHConic III Rotor (set of 2)			
Direct fit	50 mL Round Bottom Tube	6 x 50	30 x 115
75005802	38 mL Round Bottom Tube	6 x 38	25.5 x 110
75005803	16 mL Round Bottom Tube	6 x 16	18 x 123
75005808	15 mL Conical Tube	6 x 15	17 x 123
75005804	12 mL Round Bottom Tube	6 x 12	16 x 95
75005805	6.5 mL Round Bottom Tube	6 x 6.5	13.5 x 114
75005770	5 mL Conical Microtube	6 x 5	17 x 100
75005806	3.5 mL Round Bottom Tube	12 x 3.5	11 x 100
75005807	1.5/2 mL Microtube	12 x 2	11 x 40

Biocontainment Certificate

Health Protection Agency
Microbiology Services
Porton Down
Salisbury
Wiltshire
SP4 0JG

Certificate of Containment Testing

Containment Testing of Rotor 75005709 HIGHConic III 6x50 in a Thermo Scientific Centrifuge

Report No. 194-12 D

Report Prepared For: Thermo Fisher Scientific
Issue Date: 30th October 2012

Test Summary

A 75005709 HIGHConic III 6x50 rotor was containment tested in a Thermo Scientific centrifuge at 10,000 rpm, using Annex AA of IEC 61010-2-20:2006 (2nd Ed.). The sealed rotor was shown to contain all contents.

Report Written By	Report Authorised By
Anna Moy	
Name: Ms Anna Moy	**Name: Mrs Sara Speight**
Title: Biosafety Scientist	**Title: Senior Biosafety Scientist**

CLINIConic

Items Supplied

Article No.	Item	Quantity
75003623	**CLINIConic Rotor**	1
50139640	Instruction Manual	1
50110904	Metal Sleeves	30
76001803	Rubber Pads	30

If any parts are missing, please contact the nearest Thermo Fisher Scientific representative.

Technical Data

Megafuge 8R, Sorvall ST 8R and SL 8R Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	4.7 kg	4.7 kg	4.7 kg
Maximum Permissible Load	30 x 30 g	30 x 30 g	30 x 30 g
Maximum Speed n_{max}	4400 rpm	4400 rpm	4400 rpm
Maximum RCF-Value at n_{max}	3030 x g	3030 x g	3030 x g
K-Factor at n_{max}	6521	6521	6521
Max. Cycle Number	50000	50000	50000
Radius max. / min.	140 mm / 85 mm	140 mm / 85 mm	140 mm / 85 mm
Angle	37°	37°	37°
Acceleration / Braking Time	25 s / 30 s	25 s / 30 s	30 s / 30 s
Maximum Speed at 4 °C	50 Hz: 4400 rpm 60 Hz: 4400 rpm	60 Hz: 4400 rpm	50 Hz: 4400 rpm 60 Hz: 4400 rpm
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	50 Hz: < 4 °C 60 Hz: < 4 °C	60 Hz: < 4 °C	50 Hz: < 4 °C 60 Hz: < 4 °C
Aerosol-tight	No	No	No
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Megafuge 8, Sorvall ST 8 and SL 8 Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	4.7 kg	4.7 kg	4.7 kg
Maximum Permissible Load	30 x 30 g	30 x 30g	30 x 30g
Maximum Speed n_{max}	4400 rpm	4400 rpm	4400 rpm
Maximum RCF-Value at n_{max}	3030 x g	3030 x g	3030 x g
K-Factor at n_{max}	6521	6521	6521
Max. Cycle Number	50000	50000	50000
Radius max. / min.	140 mm / 85 mm	140 mm / 85 mm	140 mm / 85 mm
Angle	37°	37°	37°
Acceleration / Braking Time	16 s / 27 s	18 s / 26 s	18 s / 26 s
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	14 °C	14 °C	14 °C
Aerosol-tight	No	No	No
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Accessories

Article No.	Description	Rotor Capacity (places x volume, mL)	Max Tube Dimensions (Ø x L, mm)
Adapters for CLINIConic Rotor (each)			
Direct fit	15 mL Round/Conical Bottom Tube	30 x 15	16.5 x 131
75008817	10 mL Round Bottom Tube	30 x 10	16.5 x 95
11172596	5/7 mL BD Hemogard / BD Vacutainer Tube	30 x 5/7	13 x 106
11172595	5 mL BD Hemogard Tube	30 x 5	13 x 75

MicroClick 18 x 5

Items Supplied

Article No.	Item	Quantity
75005765	**MicroClick 18 x 5 Rotor**	1
50139640	Instruction Manual	1
20059119	ClickSeal Lid	1
75005726	O-Ring Set	1
76003500	O-Ring Grease	1

If any parts are missing, please contact the nearest Thermo Fisher Scientific representative.

Technical Data

Megafuge 8R, Sorvall ST 8R and SL 8R Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	1.7 kg	1.7 kg	1.7 kg
Maximum Permissible Load	18 x 9 g	18 x 9 g	18 x 9 g
Maximum Speed n_{max}	14000 rpm	14000 rpm	14000 rpm
Maximum RCF-Value at n_{max}	22351 x g	22351 x g	22351 x g
K-Factor at n_{max}	486	486	486
Max. Cycle Number	50000	50000	50000
Radius max. / min.	102 mm / 70 mm	102 mm / 70 mm	102 mm / 70 mm
Angle	45°	45°	45°
Acceleration / Braking Time	55 s / 55 s	50 s / 55 s	60 s / 55 s
Maximum Speed at 4 °C	50 Hz: 12400 rpm 60 Hz: 13000 rpm	60 Hz: 13500 rpm	50 Hz: 13700 rpm 60 Hz: 14000 rpm
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	50 Hz: < 4 °C 60 Hz: < 4 °C	60 Hz: < 4 °C	50 Hz: < 4 °C 60 Hz: < 4 °C
Aerosol-tight	Yes	Yes	Yes
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Accessories

Article No.	Description	Rotor Capacity (places x volume, mL)	Max Tube Dimensions (Ø x L, mm)
Adapters for MicroClick 18 x 5 Rotor (set of 2)			
75005756	1.5/2 mL Microtube	18 x 1.5/2	11 x 45

Biocontainment Certificate

Public Health England

Public Health England
Microbiology Services
Porton Down
Salisbury
Wiltshire
SP4 OJG

Certificate of Containment Testing

Containment Testing of Thermo Scientific Rotor MicroClick 18x5 (75005765) in a Thermo Scientific Centrifuge

Report No. 102/13

Report Prepared For: Thermo Fisher Scientific
Issue Date: 13th February 2014

Test Summary

A Thermo Scientific MicroClick 18x5 rotor (75005765) was containment tested in a Thermo Scientific centrifuge at 15,000 rpm, using Annex AA of IEC 61010-2-020:2006 (2nd Ed.). The sealed rotor was shown to contain all contents.

Report Written By

Name: Miss Anna Moy
Title: Biosafety Scientist

Report Authorised By

Name: Mrs Sara Speight
Title: Senior Biosafety Scientist

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MicroClick 24 x 2

Items Supplied

Article No.	Item	Quantity
75005715	**MicroClick 24 x 2 Rotor**	1
50139640	Instruction Manual	1
20058086	ClickSeal Lid	1
75003405	O-Ring Set	1
76003500	O-Ring Grease	1

If any parts are missing, please contact the nearest Thermo Fisher Scientific representative.

Technical Data

Megafuge 8R, Sorvall ST 8R and SL 8R Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	1.2 kg	1.2 kg	1.2 kg
Maximum Permissible Load	24 x 4 g	24 x 4 g	24 x 4 g
Maximum Speed n_{max}	17850 rpm	17850 rpm	17850 rpm
Maximum RCF-Value at n_{max}	30279 x g	30279 x g	30279 x g
K-Factor at n_{max}	406	406	406
Max. Cycle Number	50000	50000	50000
Radius max. / min.	85 mm / 51 mm	85 mm / 51 mm	85 mm / 51 mm
Angle	45°	45°	45°
Acceleration / Braking Time	35 s / 45 s	30 s / 50 s	40 s / 50 s
Maximum Speed at 4 °C	50 Hz: 15200 rpm 60 Hz: 16800 rpm	60 Hz: 17400 rpm	50 Hz: 17500 rpm 60 Hz: 17500 rpm
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	50 Hz: < 4 °C 60 Hz: < 4 °C	60 Hz: < 4 °C	50 Hz: < 4 °C 60 Hz: < 4 °C
Aerosol-tight	Yes	Yes	Yes
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Megafuge 8, Sorvall ST 8 and SL 8 Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	1.2 kg	1.2 kg	1.2 kg
Maximum Permissible Load	24 x 4 g	24 x 4 g	24 x 4 g
Maximum Speed n_{max}	16000 rpm	16000 rpm	16000 rpm
Maximum RCF-Value at n_{max}	24328 x g	24328 x g	24328 x g
K-Factor at n_{max}	505	505	505
Max. Cycle Number	50000	50000	50000
Radius max. / min.	85 mm / 51 mm	85 mm / 51 mm	85 mm / 51 mm
Angle	45°	45°	45°
Acceleration / Braking Time	23 s / 35 s	23 s / 35 s	23 s / 35 s
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	18 °C	18 °C	18 °C
Aerosol-tight	Yes	Yes	Yes
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Accessories

Article No.	**Description**	**Rotor Capacity (places x volume, mL)**	**Max Tube Dimensions (Ø x L, mm)**
75005725	Replacement ClickSeal Biocontainment Lid (each)		
75003405	Replacement O-ring for Lid (each)		
Adapters for MicroClick 24 x 2 Rotor (sets of 30)			
75005752	0.2 mL PCR Tube	24 x 0.2	6.5 x 20
75005753	0.5 mL Microtube	24 x 0.5	8 x 44
75005754	0.25 mL Microtube	24 x 0.25	6 x 46

Biocontainment Certificate

Health Protection Agency
Microbiology Services
Porton Down
Salisbury
Wiltshire
SP4 0JG

Certificate of Containment Testing

Containment Testing of Rotor 75005715 MicroClick 24x2 in a Thermo Scientific Centrifuge

Report No. 194-12 A

Report Prepared For: Thermo Fisher Scientific
Issue Date: 30th October 2012

Test Summary

A 75005715 MicroClick 24x2 rotor was containment tested in a Thermo Scientific centrifuge at 18,000 rpm, using Annex AA of IEC 61010-2-20:2006 (2nd Ed.). The sealed rotor was shown to contain all contents.

Report Written By	Report Authorised By
Anna Moy	
Name: Ms Anna Moy	Name: Mrs Sara Speight
Title: Biosafety Scientist	Title: Senior Biosafety Scientist

MicroClick 30 x 2

Items Supplied

Article No.	Item	Quantity
75005719	**MicroClick 30 x 2 Rotor**	1
50139640	Instruction Manual	1
20059119	ClickSeal Lid	1
75005726	O-Ring Set	1
76003500	O-Ring Grease	1

If any parts are missing, please contact the nearest Thermo Fisher Scientific representative.

Technical Data

Megafuge 8R, Sorvall ST 8R and SL 8R Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	2.7 kg	2.7 kg	2.7 kg
Maximum Permissible Load	30 x 4 g	30 x 4 g	30 x 4 g
Maximum Speed n_{max}	14000 rpm	14000 rpm	14000 rpm
Maximum RCF-Value at n_{max}	21694 x g	21694 x g	21694 x g
K-Factor at n_{max}	563	563	563
Max. Cycle Number	50000	50000	50000
Radius max. / min.	99 mm / 64 mm	99 mm / 64 mm	99 mm / 64 mm
Angle	45°	45°	45°
Acceleration / Braking Time	40 s / 50 s	40 s / 50 s	50 s / 50 s
Maximum Speed at 4 °C	50 Hz: 13000 rpm 60 Hz: 13500 rpm	60 Hz: 14000 rpm	50 Hz: 14000 rpm 60 Hz: 14000 rpm
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	50 Hz: < 4 °C 60 Hz: < 4 °C	60 Hz: < 4 °C	50 Hz: < 4 °C 60 Hz: < 4 °C
Aerosol-tight	Yes	Yes	Yes
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Megafuge 8, Sorvall ST 8 and SL 8 Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	1.5 kg	1.5 kg	1.5 kg
Maximum Permissible Load	30 x 4 g	30 x 4 g	30 x 4 g
Maximum Speed n_{max}	14000 rpm	14000 rpm	14000 rpm
Maximum RCF-Value at n_{max}	21694 x g	21694 x g	21694 x g
K-Factor at n_{max}	563	563	563
Max. Cycle Number	50000	50000	50000
Radius max. / min.	99 mm / 64 mm	99 mm / 64 mm	99 mm / 64 mm
Angle	45°	45°	45°
Acceleration / Braking Time	28 s / 35 s	26 s / 35 s	26 s / 35 s
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	24 °C	24 °C	24 °C
Aerosol-tight	Yes	Yes	Yes
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Accessories

Article No.	Description	Rotor Capacity (places x volume, mL)	Max Tube Dimensions (Ø x L, mm)
75005725	Replacement ClickSeal Biocontainment Lid (each)		
75003405	Replacement O-ring for Lid (each)		
Adapters for MicroClick 30 x 2 Rotor (sets of 30)			
75005752	0.2 mL PCR Tube	30 x 0.2	6.5 x 20
75005753	0.5 mL Microtube	30 x 0.5	8 x 44
75005754	0.25 mL Microtube	30 x 0.25	6 x 46

Biocontainment Certificate

Health Protection Agency
Microbiology Services
Porton Down
Salisbury
Wiltshire
SP4 0JG

Certificate of Containment Testing

Containment Testing of Rotor 75005719 MicroClick 30x2 in a Thermo Scientific Centrifuge

Report No. 194-12 B

Report Prepared For: Thermo Fisher Scientific
Issue Date: 30th October 2012

Test Summary

A 75005719 MicroClick 30x2 rotor was containment tested in a Thermo Scientific centrifuge at 15,000 rpm, using Annex AA of IEC 61010-2-20:2006 (2nd Ed.). The sealed rotor was shown to contain all contents.

Report Written By	Report Authorised By
Anna Moy	
Name: Ms Anna Moy	Name: Mrs Sara Speight
Title: Biosafety Scientist	Title: Senior Biosafety Scientist

Microliter 48 x 2

Items Supplied

Article No.	Item	Quantity
75003602	**Microliter 48 x 2 Rotor**	1
50143707	Instruction Manual	1
76003500	O-Ring Grease	1

If any parts are missing, please contact the nearest Thermo Fisher Scientific representative.

Technical Data

Megafuge 8R, Sorvall ST 8R and SL 8R Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	2.4 kg	2.4 kg	2.4 kg
Maximum Permissible Load	48 x 4 g	48 x 4 g	48 x 4 g
Maximum Speed n_{max}	12900 rpm	12900 rpm	12900 rpm
Maximum RCF-Value at n_{max}	18233 x g	18233 x g	18233 x g
K-Factor at n_{max}	771	771	771
Max. Cycle Number	50000	50000	50000
Radius max. / min.	98 mm / 59 mm	98 mm / 59 mm	98 mm / 59 mm
Angle	45°	45°	45°
Aerosol-tight	Yes	Yes	Yes
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Megafuge 8, Sorvall ST 8 and SL 8 Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	2.4 kg	2.4 kg	2.4 kg
Maximum Permissible Load	48 x 4 g	48 x 4 g	48 x 4 g
Maximum Speed n_{max}	11800 rpm	11800 rpm	11800 rpm
Maximum RCF-Value at n_{max}	15256 x g	15256 x g	15256 x g
K-Factor at n_{max}	922	922	922
Max. Cycle Number	50000	50000	50000
Radius max. / min.	98 mm / 59 mm	98 mm / 59 mm	98 mm / 59 mm
Angle	45°	45°	45°
Aerosol-tight	Yes	Yes	Yes
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Accessories

Article No.	**Description**	**Rotor Capacity (places x volume, mL)**	**Max Tube Dimensions (Ø x L, mm)**
Adapters for Microliter 48 x 2 Rotor (sets of 24)			
76003758	0.5 mL Microtube	48 x 0.5	8 x 44
76003759	0.25 mL Microtube	48 x 0.25	6 x 46
76003750	0.2 mL PCR Tube	48 x 0.2	6.5 x 20

Biocontainment Certificate

Centre of Emergency Preparedness and Response
Health Protection Agency
Porton Down
Salisbury
Wiltshire SP4 0JG
United Kingdom

Certificate of Containment Testing

Containment Testing of Thermo Scientific Rotor 75003602

Report No. 59-08 E

Report prepared for: Thermo Fisher
Issue Date: 15th January 2009

Test Summary

A Thermo Scientific 75003602 contained rotor (Max speed 15,200 rpm) was supplied by Thermo Fisher and containment tested at 15,200 rpm using the method described in Annex AA of EN 61010-2-020. The rotor was shown to contain a spill when tested in triplicate.

Report Written By **Report Authorised By**

(28/1/09)

8 x 8 PCR Strip

Items Supplied

Article No.	Item	Quantity
75005720	**8 x 8 PCR Strip Rotor**	1
50139640	Instruction Manual	1
20059119	ClickSeal Lid	1
75005726	O-Ring Set	1
76003500	O-Ring Grease	1

If any parts are missing, please contact the nearest Thermo Fisher Scientific representative.

Technical Data

Megafuge 8R, Sorvall ST 8R and SL 8R Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	1.4 kg	1.4 kg	1.4 kg
Maximum Permissible Load	64 x 0.5 g	64 x 0.5 g	64 x 0.5 g
Maximum Speed n_{max}	15000 rpm	15000 rpm	15000 rpm
Maximum RCF-Value at n_{max}	17860 x g	17860 x g	17860 x g
K-Factor at n_{max}	538	538	538
Max. Cycle Number	50000	50000	50000
Radius max. / min.	71 mm / 44 mm	71 mm / 44 mm	71 mm / 44 mm
Angle	45°	45°	45°
Acceleration / Braking Time	30 s / 45 s	25 s / 45 s	30 s / 45 s
Maximum Speed at 4 °C	50 Hz: 15000 rpm 60 Hz: 15000 rpm	60 Hz: 15000 rpm	50 Hz: 15000 rpm 60 Hz: 15000 rpm
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	50 Hz: < 4 °C 60 Hz: < 4 °C	60 Hz: < 4 °C	50 Hz: < 4 °C 60 Hz: < 4 °C
Aerosol-tight	Yes	Yes	Yes
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Megafuge 8, Sorvall ST 8 and SL 8 Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	1.4 kg	1.4 kg	1.4 kg
Maximum Permissible Load	64 x 0.5 g	64 x 0.5 g	64 x 0.5 g
Maximum Speed n_{max}	15000 rpm	15000 rpm	15000 rpm
Maximum RCF-Value at n_{max}	17860 x g	17860 x g	17860 x g
K-Factor at n_{max}	538	538	538
Max. Cycle Number	50000	50000	50000
Radius max. / min.	71 mm / 44 mm	71 mm / 44 mm	71 mm / 44 mm
Angle	45°	45°	45°
Acceleration / Braking Time	20 s / 32 s	20 s / 33 s	20 s / 33 s
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	12 °C	12 °C	12 °C
Aerosol-tight	Yes	Yes	Yes
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Accessories

Article No.	Description	Rotor Capacity (places x volume, mL)	Max Tube Dimensions (Ø x L, mm)
75005730	Replacement ClickSeal Biocontainment Lid (each)		
75005726	Replacement O-ring for Lid (each)		

Biocontainment Certificate

Health Protection Agency
Microbiology Services
Porton Down
Salisbury
Wiltshire
SP4 0JG

Certificate of Containment Testing

Containment Testing of Rotor 75005720 MicroClick PCR 8x8 in a Thermo Scientific Centrifuge

Report No. 194-12 C

Report Prepared For: Thermo Fisher Scientific
Issue Date: 30th October 2012

Test Summary

A 75005720 MicroClick PCR 8x8 rotor was containment tested in a Thermo Scientific centrifuge at 15,000 rpm, using Annex AA of IEC 61010-2-20:2006 (2nd Ed.). The sealed rotor was shown to contain all contents.

Report Written By	Report Authorised By
Anna May	
Name: Ms Anna Moy	Name: Mrs Sara Speight
Title: Biosafety Scientist	Title: Senior Biosafety Scientist

8 x 50 mL Individually Sealed

Items Supplied

Article No.	Item	Quantity
75003694	**8 x 50 mL Individually Sealed**	1
50139640	Instruction Manual	1
50111786	Metal Cannister	8
50129119	Biocontainment Lid	8
20290564	O-Ring	8

If any parts are missing, please contact the nearest Thermo Fisher Scientific representative.

Technical Data

Megafuge 8R, Sorvall ST 8R and SL 8R Centrifuges			
Centrifuge Frequency	**230 V**	**120 V**	**100 V**
Weight (empty)	3.3 kg	3.3 kg	3.3 kg
Maximum Permissible Load	18 x 9 g	18 x 9 g	18 x 9 g
Maximum Speed n_{max}	5600 rpm	5600 rpm	5600 rpm
Maximum RCF-Value at n_{max}	5014 x g	5014 x g	5014 x g
K-Factor at n_{max}	5879	5879	5879
Max. Cycle Number	50000	50000	50000
Radius max. / min.	143 mm / 63 mm	143 mm / 63 mm	143 mm / 63 mm
Angle	45°	45°	45°
Acceleration / Braking Time	35 s / 40 s	30 s / 40 s	35 s / 40 s
Maximum Speed at 4 °C	50 Hz: 5600 rpm 60 Hz: 5600 rpm	60 Hz: 5600 rpm	50 Hz: 5600 rpm 60 Hz: 5600 rpm
Sample Heating [°C] above ambient at max. speed (run time 60 minutes)	50 Hz: < 4 °C 60 Hz: < 4 °C	60 Hz: < 4 °C	50 Hz: < 4 °C 60 Hz: < 4 °C
Aerosol-tight	Yes	Yes	Yes
Permissible Temperature Range Autoclavable	121 °C	121 °C	121 °C

Accessories

Article No.	Description	Rotor Capacity (places x volume, mL)	Max Tube Dimensions (Ø x L, mm)
75003011	Replacement Biocontainment Lids (set of 2)		
75003789	Replacement O-ring Kit		
Adapters for 8 x 50 mL Individually Sealed Rotor (set of 2)			
75005808	15 mL Conical Tube	8 x 15	17 x 121
75005804	10 mL Blood Collection Tube (16 x 100 mm)	8 x 10	16 x 110
75005805	7 mL Blood Collection Tube (13 x 100 mm)	8 x 7	13 x 110
75005806	3.5 mL Blood Collection Tube	16 x 3.5	11 x 75

Biocontainment Certificate

Centre of Emergency Preparedness and Response
Health Protection Agency
Porton Down
Salisbury
Wiltshire SP4 0JG
United Kingdom

Certificate of Containment Testing

Containment testing of Thermo Scientific Vessel 75003787

Report No. 77- 08 B

Report prepared for: Thermo Fisher
Issue Date: 1st June 2009

Test Summary

A Thermo Scientific vessel 75003787 with aerosol tight lid (Max rcf 7177 x g) was supplied by Thermo Fisher and containment tested at max rcf 7177 x g using the method described in Annex AA of EN 61010-2-020. The vessel was shown to contain a spill when tested in triplicate.

Report Written By **Report Authorised By**

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Thermo Scientific Auto-Lock Rotor Exchange

Rotor Installation

⚠	CAUTION
Unapproved or incorrectly combined accessories can cause serious damage to the centrifuge.	

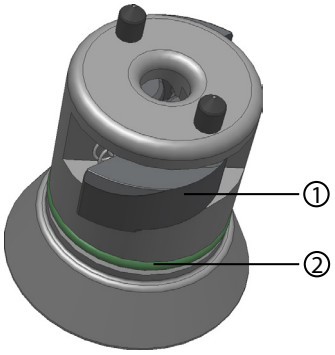
This rotor is equipped with a Thermo Scientific™ Auto-Lock™ rotor exchange.

This system is used to automatically lock the rotor to the centrifuge spindle. The rotor does not have to be bolted onto the centrifuge spindle.

Proceed as follows:

1. Open the door of the centrifuge and if necessary, remove any dust, foreign objects or residue from the chamber.

   Auto-Lock and O-ring must be clean and undamaged.



1	Auto-Lock
2	O-Ring

2. Place the rotor over the centrifuge spindle and lower it vertically slowly down the centrifuge spindle. If necessary, a light push may be required to ensure connection.

   The rotor clicks automatically into place.

⚠	CAUTION
Do not force the rotor onto the centrifuge spindle. If the rotor is very light, then it may be necessary to press it onto the centrifuge spindle with little pressure.	

3. Check if the rotor is properly installed by lifting it slightly on the handle or from beneath the rotor. If the rotor can be pulled up, then it must be reconnected to the centrifuge spindle.

⚠	**WARNING**

If the rotor cannot be properly locked in place after several attempts, then the Auto-Lock is defective, and you are not permitted to operate the rotor.

Check for any damage to the rotor: Damaged rotors must not be used.

Keep the centrifuge spindle area of the rotor clear of objects.

If in doubt, please call Thermo Fisher Scientific Service.

⚠	**CAUTION**

Check that the rotor is properly locked on the centrifuge spindle before each use by pulling it at its handle or from beneath the rotor. The rotor has to be locked tight.

4. If available close the rotor with the rotor lid.

☣	**CAUTION**

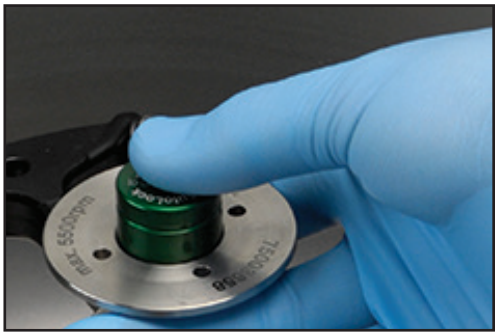
Be sure to check all seals before starting any aerosol-tight applications.

5. Close the centrifuge door.

Removing the Rotor

To remove the rotor, proceed as follows:

1. Open the centrifuge door.
2. Grab the rotor handle and fully depress the Auto-Lock button. At the same time, pull the rotor directly upwards and remove it from the centrifuge spindle. Make sure not to tilt the rotor while doing this.



3

Rotor Loading

Before a Run

1. Read and observe the precautions and the safety instructions in this manual and in the instruction manual of the centrifuge.
2. Check the rotor and all accessory parts for damages such as cracks, scratches or traces of corrosion.
3. Check the rotor chamber, the centrifuge spindle and the Auto-Lock.
4. Check the rotor suitability. (“Chemical Compatibility Chart” on page 67)

Rotor Temperature Range

⚠	CAUTION
Operate the rotor in a temperature range between -9 °C and +40 °C only. A pre-tempering in a freezer below -9 °C is not allowed.	

NOTICE
The rotors can warm up in ventilated centrifuges at high ambient temperatures. Temperature above 45 °C blood samples can be damaged. Let the rotor cool down between two runs.

Rotor Loading

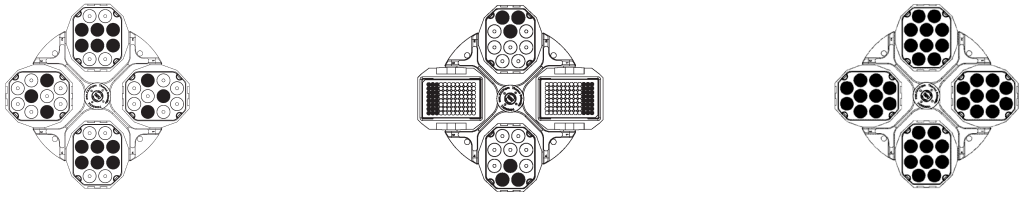
⚠	CAUTION
Failure to load all buckets may lead to damage or accident. All buckets and sleeves must be in place before starting the rotor.	

Always balance opposite loads. Balance opposite loads in number of tubes and by position to ensure safe and smooth operation.

Correct Balances

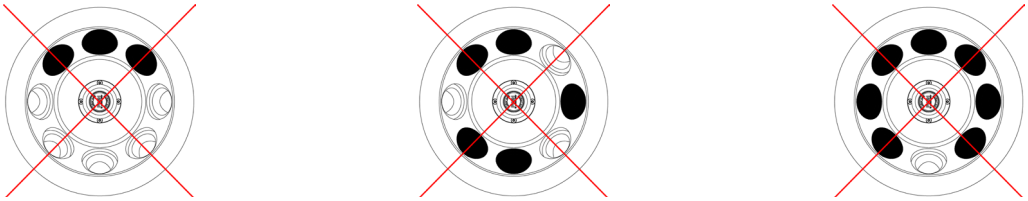
Fixed Angle Rotors

Swing Out Rotors

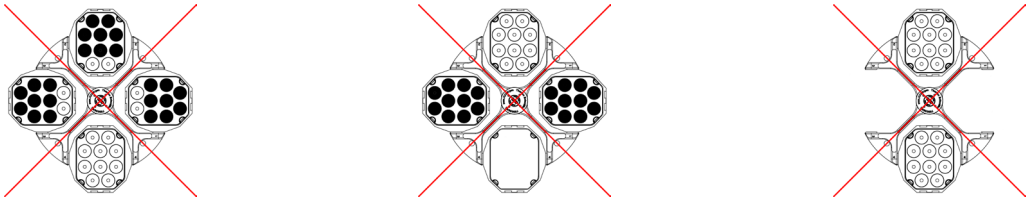


Incorrect Balances

Fixed Angle Rotors



Swing Out Rotors



Maximum Loading

The rotor can run at high speeds. Each rotor is specifically designed to run at its maximum speed with a defined load. For further details please refer to the rotor manual supplied with the rotor.

The safety system of the centrifuge requires that you do not overload the rotor.

The rotors are designed to work with solution with a density of up to 1.2 g/ml. Above this density or if total load is above the maximum weight the following steps should be taken:

- Reduce the fill level.
- Reduce the speed.

Use the table or the formula:

$$n_{adm} = n_{max} \sqrt{\frac{Maximum\ permissible\ Load}{Effective\ Load}}$$

n_{adm} = admissible speed

n_{max} = maximum speed

Explanation of RCF-Value

The relative centrifugal force (RCF) is given as a multiple of the force of gravity g. It is a unit less numerical value which is used to compare the separation or sedimentation capacity of various centrifuges, since it is independent of the type of device. Only the centrifuging radius and the speed are used for calculation:

RCF = 11.18 x $\left(\frac{n}{1000}\right)^2$ x r

r = centrifuging radius in cm

n = rotational speed in rpm

The maximum RCF value is related to the maximum radius of the tube opening.

Remember that this value is reduced depending on the tubes and adapters used.

This can be accounted for in the calculation above if required.

Once the rotor has been properly installed, the main switch turned on and the centrifuge door closed, you may start centrifuging.

Use of Tubes and Consumables

Care should be taken to ensure that the tubes and bottles used in the centrifuge are:

- Rated to or above the selected rcf to be spun at
- They are being used at or above their minimum fill volume
- They are not being used above their design life (age or number of runs)
- They are inspected for damage

Please refer to manufacturers data sheets for further information.

CAUTION

Make sure that the length and width of the tubes are fitting into the adapter and cavities. Do not use tubes that are too short or too thick for the adapter and the cavities.

Rotor Life Time

WARNING

Replace the rotor when the specified number of cycles is reached. Due to the mechanical load a rotor can break and damage the centrifuge. Replace the rotor and buckets when the specified number of cycles is reached.

The lifetime of rotors and buckets is dependent on the amount of mechanical load. Do not exceed them number of cycles recommended for rotors and buckets.

The maximum number of cycles is given in the rotor table in the rotor specification section.

The maximum number of cycles for buckets is marked on the buckets themselves.

Service Life Examples

Usage profile	Maximum service life at 50,000 cycles
Frequent use 20 runs / day 220 days / year	7 years

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Aerosol-tight Applications

Basic Principles

⚠	**CAUTION**

Biological seals are part of bio-containment systems as specified in international and national bio-safety guidelines and cannot relied on as the only means of safeguarding workers and the environment when handling pathogenic micro-organisms.

Mind the “Laboratory Biosafety Manual” of the World Health Organization (WHO) and the regulations in your country.

⚠	**CAUTION**

When centrifuging hazardous samples, do not open aerosol-tight rotors or buckets unless placed in a safety cabinet.

Always bear in mind the maximum permitted fill levels.

☣	**WARNING**

Be sure to check all seals before starting any aerosol-tight applications.

Check that the sample containers are well suited for the desired centrifugation process.

Placing O-Ring

The O-ring fulfills its purpose best, when it is neither stressed nor bulked. Meaning the O-ring should be equally placed in the groove of the lid.

Place the O-ring as follows:

1. Place the O-ring above the groove.
2. Push the O-ring on two opposite places into the groove. Make sure the rest of the O-ring is equally distributed.
3. Push the centers of the loose parts into the groove.
4. Push the remaining O-ring into place.

NOTE

If the O-ring seems to be too long or too short, take it off the lid and repeat the process.

Fill Level

The tubes are only to be filled to a level which ensures that the sample is unable to reach the top of the tube during centrifugation. Therefore, fill the tube only 2/3 of the rated level.

Checking the Aerosol-Tightness

The aerosol tightness testing of the rotors and buckets took place according to the microbiological test process in accordance with the EN 61010-2-020 Appendix AA.

Whether or not a rotor is aerosol-tight depends primarily on proper handling.

Check as needed to make sure your rotor is aerosol-tight.

The careful inspection of the seals and seal surfaces for signs of wear and damage such as cracks, scratches and embrittlement are extremely important.

Aerosol-tight applications are not possible if the bucket tops are open.

Aerosol-tightness requires the correct operation when filling the sample vessels and closing the rotor lid.

Quick Test

As a quick test, it is possible to test the aerosol-tight beaker and fixed-angle rotors using the following process:

1. Lubricate all seals lightly.

   Always use the special grease (part no. 76003500) when lubricating the seals.
2. Fill the bucket or the rotor with approx. 10 ml of carbonated mineral water.
3. Close the bucket or the rotor as explained in the handling instructions.
4. Shake the bucket or the rotor vigorously using your hands.

   This releases the carbonic acid gas which is bound in the water, resulting in excess pressure. Do not apply pressure to the lid when doing so!

   Leaks can be detected by escaping water or the sound of escaping gas.

   Replace the seals if you detect any leaks. Then repeat the test.
5. Dry the bucket, rotor, rotor cover and the cover seal.

CAUTION

Prior to each use, the seals in the rotor are to be inspected in order to assure that they are correctly seated and are not worn or damaged.

Damaged seals are to be replaced immediately.

Replacement seals are supplied with the rotors and can also be re-ordered as a spare part set.

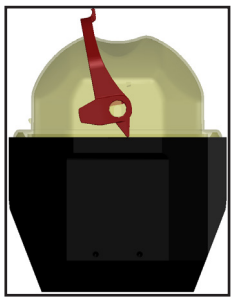
When loading the rotor, ensure that the rotor lid closes securely.

Damaged or clouded rotor covers are to be replaced immediately.

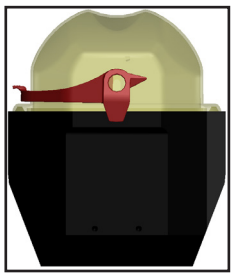
Aerosol-tight Closure with ClickSeal

1. If necessary, grease the lid joint before closing the lid. Use grease (76003500) for this.
2. Raise the latch.

   The cap can now be easily placed on the bucket.



3. Lower the latch to close the bucket aerosol-tight; be sure the latch clicks into place.



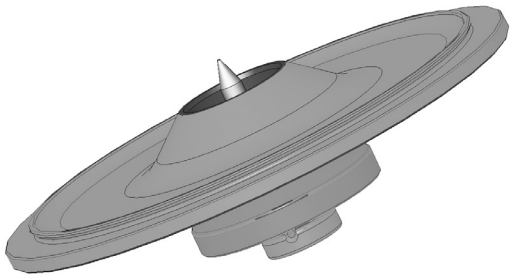
⚠	**CAUTION**
If the latch is not flipped down, the caps could be damaged during centrifuging. If the latch has not clicked into place, the bucket is not aerosol-tight. Never raise the bucket at its latch.	

Removing of Aerosol-tight Rotors

For your protection when using an aerosol tight lid, the rotor should only be removed with the lid closed.

NOTICE

Rotors supplied with a lid for aerosol-tight applications come with a mandrel, which belongs to the Auto-Lock. Be sure not to place the lid onto this mandrel to prevent it from being damaged.



CAUTION

Skin can be pierced by sharp mandrel tip.

Do not touch the mandrel.

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Maintenance and Care

Cleaning Intervals

For the sake of personal, environmental, and material protection, it is your duty to clean and if necessary, disinfect the centrifuge on a regular basis.

Maintenance	Recommended Interval
Rotor Chamber (Bowl)	Daily or when polluted
Rotor	Daily or when polluted
Accessories	Daily or when polluted

CAUTION

Refrain from using any other cleaning or decontamination procedure than those recommended here, if you are not entirely sure that the intended procedure is safe for the equipment.

Use only approved cleansers.

If in doubt, contact Thermo Fisher Scientific.

Basics

CAUTION

Not rated procedures or agents could deteriorate the materials of the centrifuge and lead to malfunction.

Refrain from using any other cleaning or decontamination procedure than those recommended here, if you are not entirely sure that the intended procedure is safe for the equipment.

Use only approved cleansers.

If in doubt, contact Thermo Fisher Scientific.

- Use warm water with a neutral detergent that is suitable for use with the materials of the centrifuge. If in doubt contact the manufacturer of the cleaning agents.
- Never use caustic cleaning agents such as soap suds, phosphoric acid, bleaching solutions or scrubbing powder.
- Remove rotor and clean bowl with a small amount of cleaning agent, applied to a clean cloth.
- Use a soft brush without metal bristles to remove stubborn residue.
- Afterwards rinse with a small amount of distilled water and remove any excess with absorbent towels.
- Use only disinfectants with a pH of 6-8.

Rotor and Accessories Inspection

After thoroughly cleaning rotors, they should be inspected for damage, wear and corrosion.

Metal Parts

Ensure that the black protective coating is complete. It can be removed through wear and chemical attack and can lead to unseen corrosions. Any signs of corrosions, such as rust or white / metallic pitting, the rotor or accessories should be immediately removed from service. Particular attention should be taken with the bottom of buckets on swing out rotors and tube cavities on fixed angle rotors.

Plastic Parts

Check for signs plastic crazing, fading, bruising or cracking.

⚠	**CAUTION**
Do not run any rotor or accessories with sign of damage. Ensure that the rotor, buckets and accessories are within the service life and number of cycles. It is recommend that you have rotors and accessories inspected yearly as part of your routine service to ensure safety.	

Cleaning

⚠	**CAUTION**
Before using any cleaning methods except those recommended by the manufacturer. Users should check with the manufacturer of the cleaning agents that the proposed method will not damage the equipment.	

Clean as follows:

1. Clean rotor, buckets and accessories outside of the centrifuge bowl.
2. Separate all rotors, buckets, lids, adapters and tubes to allow thorough cleaning.
3. Rinse rotor and all accessories with warm water and a neutral detergent that is suitable for use with the materials of the centrifuge. If in doubt contact the manufacturer of the cleaning agents. Ensure grease on rotor trunnions (pivot point for swinging buckets) is cleaned away.
4. Use a soft brush without metal bristles to remove stubborn residue.
5. Rinse rotor and all accessories with distilled water.
6. Place the rotors on a plastic grate with their cavities pointing down, to allow to fully drain and dry.
7. Dry all of the rotors and accessories after cleaning with a cloth or in a warm air cabinet at a maximum temperature of 50 °C. If drying boxes are used, the temperature must never exceed 50 °C, since higher temperatures could damage the material and shorten the lifetime of the parts.

   Once clean and dry, inspect the rotor and accessories.

   After cleaning, treat the entire surface of aluminum parts including the cavities with corrosion protection oil (70009824).

   Treat the bolt of the swing out rotor with bolt grease (75003786).

⚠	**CAUTION**
Drive and lid lock can be damaged by entering liquids. Do not allow liquids, especially organic solvents, to get on the drive shaft, the drive bearings or the centrifuge door locks. Organic solvents break down the grease in the motor bearing. The drive shaft could lock up.	

Disinfection

WARNING

A hazard of infection is possible when touching the contaminated rotor and centrifuge parts. Infectious material can get into the centrifuge when a tube breaks or as a result of spills.

In case of contamination, make sure that others are not put at risk.

Disinfect the affected parts immediately.

CAUTION

Equipment can be damaged by inappropriate disinfection methods or agents.

Before using any cleaning or disinfection methods except those recommended by the manufacturer, users should check with the manufacturer that the proposed method will not damage the equipment.

Observe the safety precautions and handling instructions for the cleaning agents used.

The rotor chamber and the rotor should be treated preferably with a neutral disinfectant.

Contact the Service Department of Thermo Fisher Scientific for questions regarding the use of other disinfectants. For details, see “Basics” on page 61.

Disinfect as follows:

1. Disinfect rotor, buckets and accessories outside of the centrifuge bowl.
2. Separate all rotors, buckets, lids, adapters and tubes to allow thorough disinfection.
3. Treat the rotor and accessories according to the instructions for the disinfectant. Adhere strictly to the given application times.

   Be sure the disinfectant can drain off the rotor.
4. Rinse the rotor and accessories thoroughly with water and then rub down.
5. Place the rotors on a plastic grate with their cavities pointing down, to allow to fully drain and dry.
6. Dispose the disinfectant according to the applicable guidelines.

Clean the rotor after disinfecting as described in “Cleaning” on page 62.

Decontamination

WARNING

Radiation is possible when touching the contaminated rotor and centrifuge parts. Radioactive material can get into the centrifuge when a tube breaks or as a result of spills.

In case of contamination, make sure that others are not put at risk.

Decontaminate the affected parts immediately.

CAUTION

Equipment can be damaged by inappropriate decontamination methods or agents.

Before using any cleaning or decontamination methods except those recommended by the manufacturer, users should check with the manufacturer that the proposed method will not damage the equipment.

Observe the safety precautions and handling instructions for the cleaning agents used.

For general radioactive decontamination use a solution of equal parts of 70 % ethanol, 10 % SDS (Sodium Dodecyl Sulfate) and water.

Decontaminate as follows:

1. Decontaminate rotor, buckets and accessories outside of the centrifuge bowl.
2. Separate all rotors, buckets, lids, adapters and tubes to allow thorough decontamination.
3. Treat the rotor and accessories according to the instructions for the decontamination solution. Adhere strictly to the given application times.

   Be sure the decontamination solution can drain off the rotor.
4. Rinse the rotor first with ethanol and then with deionized water.

   Adhere strictly to the given application times.
5. Be sure the decontamination solution can drain off the rotor.
6. Rinse the rotor and accessories thoroughly with water.
7. Place the rotors on a plastic grate with their cavities pointing down, to allow to fully drain and dry.
8. Dispose of the decontamination solution according to the applicable guidelines.

Clean the rotor after disinfecting as described in “Cleaning” on page 62.

Autoclaving

⚠	**CAUTION**
Never exceed the permitted temperature and duration when autoclaving.	

NOTE
No chemical additives are permitted in the steam.

1. Before autoclaving clean rotor and accessories as described above.
2. Place the rotor on a flat surface.

- Rotors and adapter can be autoclaved at 121 °C.
- The maximum permissible autoclave cycle is 20 minutes at 121 °C.

Clean the rotor before autoclaving and rinse it with distilled water. Remove all accessories (tubes, adapters) from the rotor. Place the rotor on a flat surface.

Service of Thermo Fisher Scientific

Thermo Fisher Scientific recommends having the centrifuge and accessories serviced once a year by an authorized service technician. The service technicians check the following:

- electrical equipment safety;
- suitability of the set-up site;
- door lock, imbalance and safety system;
- rotor;
- fixation of rotor and drive shaft.

Before service, centrifuge and rotors should be thoroughly cleaned and decontaminated to ensure full and safe inspection can be completed.

Thermo Fisher Scientific offers inspection and service contracts for this work. Any necessary repairs are performed for free during the warranty period and afterwards for a charge.

This is only valid if the centrifuge has only been maintained by an authorized Thermo Scientific service technician.

Storage

Any moisture left on a metal rotor can initiate corrosion, so after cleaning ensure proper storage:

- Remove all adapters from rotor cavities when not in use.
- Dry and store upside-down on a plastic matting to allow for airflow or a ventilated shelf to avoid gathering condensation in the cavity or bucket bottom.

Shipping and Disposal

WARNING

When removing the centrifuge and accessories from use for disposal you have to clean and if necessary disinfect or decontaminate the entire system. In doubt contact the Thermo Fisher Scientific customer service.

For the disposal of the centrifuge mind the regulations in your country. Contact the Thermo Fisher Scientific Customer Service for the disposal of the centrifuge. For contact information check the back page of this manual or visit www.thermofisher.com/centrifuge

For the countries of the European Union the disposal is regulated by the European Union's Waste Electrical & Electronic Equipment (WEEE) Directive 2012/19/EU. ("WEEE Compliance" on page 2)

Chemical Compatibility Chart

CHEMICAL	MATERIAL	ALUMINIUM	ANODIC COATING for ALUMINIUM	BUNA N	CELLULOSE ACETATE BUTYRATE	POLYURETHANE ROTOR PAINT	COMPOSITE Carbon Fiber/Epoxy	DELRIN™	ETHYLENE PROPYLENE	GLASS	NEOPRENE	NORYL™	NYLON	PET1, POLYCLEAR™,CLEARCRIMP™	POLYALLOMER	POLYCARBONATE	POLYESTER, GLASS THERMOSET	POLYTHERMIDE	POLYETHYLENE	POLYPROPYLENE	POLYSULFONE	POLYVINYL CHLORIDE	RULON A™, TEFLON™	SILICONE RUBBER	STAINLESS STEEL	TITANIUM	TYGON™	VITON™
2-mercaptoethanol		S	S	U	/	S	M	S	/	S	U	S	S	U	S	S	/	S	S	S	S	U	S	S	S	S	S	S
Acetaldehyde		S	/	U	U	/	/	/	M	/	U	/	/	/	M	U	U	U	M	M	/	M	S	U	/	S	/	U
Acetone		M	S	U	U	S	U	M	S	S	U	U	S	U	S	U	U	U	S	S	U	U	S	M	M	S	U	U
Acetonitrile		S	S	U	/	S	M	S	/	S	S	U	S	U	M	U	U	/	S	M	U	U	S	S	S	S	U	U
Alconox™		U	U	S	/	S	S	S	/	S	S	S	S	S	S	M	S	S	S	S	S	S	S	S	S	S	S	U
Allyl Alcohol		/	/	/	U	/	/	S	/	/	/	/	S	/	S	S	M	S	S	S	/	M	S	/	/	S	/	/
Aluminum Chloride		U	U	S	S	S	S	U	S	S	S	S	M	S	S	S	S	/	S	S	S	S	S	M	U	U	S	S
Formic Acid (100 %)		/	S	M	U	/	/	U	/	/	/	/	U	/	S	M	U	U	S	S	/	U	S	/	U	S	/	U
Ammonium Acetate		S	S	U	/	S	S	S	/	S	S	S	S	S	S	S	U	/	S	S	S	S	S	S	S	S	S	S
Ammonium Carbonate		M	S	U	S	S	S	S	S	S	S	S	S	S	S	U	U	/	S	S	S	S	S	S	M	S	S	S
Ammonium Hydroxide (10 %)		U	U	S	U	S	S	M	S	S	S	S	S	/	S	U	M	S	S	S	S	S	S	S	S	S	M	S
Ammonium Hydroxide (28 %)		U	U	S	U	S	U	M	S	S	S	S	S	U	S	U	M	S	S	S	S	S	S	S	S	S	M	S
Ammonium Hydroxide (conc.)		U	U	U	U	S	U	M	S	/	S	/	S	U	S	U	U	S	S	S	/	M	S	S	S	S	/	U
Ammonium Phosphate		U	/	S	/	S	S	S	S	S	S	S	S	/	S	S	M	/	S	S	S	S	S	S	M	S	S	S
Ammonium Sulfate		U	M	S	/	S	S	U	S	S	S	S	S	S	S	S	S	/	S	S	S	S	S	S	U	S	S	U
Amyl Alcohol		S	/	M	U	/	/	S	S	/	M	/	S	/	M	S	S	S	S	M	/	/	/	U	/	S	/	M
Aniline		S	S	U	U	S	U	S	M	S	U	U	U	U	U	U	U	/	S	M	U	U	S	S	S	S	U	S
Sodium Hydroxide (<1 %)		U	/	M	S	S	S	/	/	S	M	S	S	/	S	M	M	S	S	S	S	S	S	M	S	S	/	U
Sodium Hydroxide (10 %)		U	/	M	U	/	/	U	/	M	M	S	S	U	S	U	U	S	S	S	S	S	S	M	S	S	/	U
Barium Salts		M	U	S	/	S	S	S	S	S	S	S	S	S	S	S	M	/	S	S	S	S	S	S	M	S	S	S
Benzene		S	S	U	U	S	U	M	U	S	U	U	S	U	U	U	M	U	M	U	U	U	S	U	U	S	U	S
Benzyl Alcohol		S	/	U	U	/	/	M	M	/	M	/	S	U	U	U	U	U	U	U	/	M	S	M	/	S	/	S
Boric Acid		U	S	S	M	S	S	U	S	S	S	S	S	S	S	S	S	U	S	S	S	S	S	S	S	S	S	S
Cesium Acetate		M	/	S	/	S	S	S	/	S	S	S	S	/	S	S	/	/	S	S	S	S	S	S	M	S	S	S
Cesium Bromide		M	S	S	/	S	S	S	/	S	S	S	S	S	S	S	/	/	S	S	S	S	S	S	M	S	S	S
Cesium Chloride		M	S	S	U	S	S	S	/	S	S	S	S	S	S	S	/	/	S	S	S	S	S	S	M	S	S	S

CHEMICAL	MATERIAL	ALUMINIUM	ANODIC COATING for ALUMINIUM	BUNA N	CELLULOSE ACETATE BUTYRATE	POLYURETHANE ROTOR PAINT	COMPOSITE Carbon Fiber/Epoxy	DELRIN™	ETHYLENE PROPYLENE	GLASS	NEOPRENE	NORYL™	NYLON	PET1, POLYCLEAR™, CLEARCRIMP™	POLYALLOMER	POLYCARBONATE	POLYESTER, GLASS THERMOSET	POLYTHERMIDE	POLYETHYLENE	POLYPROPYLENE	POLYSULFONE	POLYVINYL CHLORIDE	RULON A™, TEFLON™	SILICONE RUBBER	STAINLESS STEEL	TITANIUM	TYGON™	VITON™
Cesium Formate		M	S	S	/	S	S	S	/	S	S	S	S	S	S	S	/	/	S	S	S	S	S	S	M	S	S	S
Cesium Iodide		M	S	S	/	S	S	S	/	S	S	S	S	S	S	S	/	/	S	S	S	S	S	S	M	S	S	S
Cesium Sulfate		M	S	S	/	S	S	S	/	S	S	S	S	S	S	S	/	/	S	S	S	S	S	S	M	S	S	S
Chloroform		U	U	U	U	S	S	M	U	S	U	U	M	U	M	U	U	U	M	M	U	U	S	U	U	U	M	S
Chromic Acid (10 %)		U	/	U	U	S	U	U	/	S	S	S	U	S	S	M	U	M	S	S	U	M	S	M	U	S	S	S
Chromic Acid (50 %)		U	/	U	U	/	U	U	/	/	/	S	U	U	S	M	U	M	S	S	U	M	S	/	U	M	/	S
Cresol Mixture		S	S	U	/	/	/	S	/	S	U	U	U	U	U	U	/	/	U	U	/	U	S	S	S	S	U	S
Cyclohexane		S	S	S	/	S	S	S	U	S	U	S	S	U	U	U	M	S	M	U	M	M	S	U	M	M	U	S
Deoxycholate		S	S	S	/	S	S	S	/	S	S	S	S	S	S	S	/	/	S	S	S	S	S	S	S	S	S	S
Distilled Water		S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Dextran		M	S	S	S	S	S	S	/	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	M	S	S	S
Diethyl Ether		S	S	U	U	S	S	S	U	S	U	U	S	U	U	U	U	U	U	U	U	U	S	S	S	S	M	U
Diethyl Ketone		S	/	U	U	/	/	M	/	S	U	/	S	/	M	U	U	U	M	M	/	U	S	/	/	S	U	U
Diethylpyro-carbonate		S	S	U	/	S	S	S	/	S	S	U	S	U	S	U	/	/	S	S	S	M	S	S	S	S	S	S
Dimethylsulfoxide		S	S	U	U	S	S	S	/	S	U	S	S	U	S	U	U	/	S	S	U	U	S	S	S	S	U	U
Dioxane		M	S	U	U	S	S	M	M	S	U	U	S	U	M	U	U	/	M	M	M	U	S	S	S	S	U	U
Ferric Chloride		U	U	S	/	/	/	M	S	/	M	/	S	/	S	/	/	/	S	S	/	/	/	M	U	S	/	S
Acetic Acid (Glacial)		S	S	U	U	S	S	U	M	S	U	S	U	U	U	U	U	M	S	U	M	U	S	U	U	S	/	U
Acetic Acid (5 %)		S	S	M	S	S	S	M	S	S	S	S	S	M	S	S	S	S	S	S	S	M	S	S	M	S	S	M
Acetic Acid (60 %)		S	S	U	U	S	S	U	/	S	M	S	U	U	M	U	S	M	S	M	S	M	S	M	U	S	M	U
Ethyl Acetate		M	M	U	U	S	S	M	M	S	S	U	S	U	M	U	U	/	S	S	U	U	S	M	M	S	U	U
Ethyl Alcohol (50 %)		S	S	S	S	S	S	M	S	S	S	S	S	U	S	U	S	S	S	S	S	S	S	S	M	S	M	U
Ethyl Alcohol (95 %)		S	S	S	U	S	S	M	S	S	S	S	S	U	S	U	/	S	S	S	M	S	S	S	U	S	M	U
Ethylene Dichloride		S	/	U	U	/	/	S	M	/	U	U	S	U	U	U	U	U	U	U	/	U	S	U	/	S	/	S
Ethylene Glycol		S	S	S	S	S	S	S	S	S	S	S	S	/	S	U	S	S	S	S	S	S	S	S	M	S	M	S
Ethylene Oxide Vapor		S	/	U	/	/	U	/	/	S	U	/	S	/	S	M	/	/	S	S	S	U	S	U	S	S	S	U
Ficoll-Hypaque™		M	S	S	/	S	S	S	/	S	S	S	S	/	S	S	/	S	S	S	S	S	S	S	M	S	S	S
Hydrofluoric Acid (10 %)		U	U	U	M	/	/	U	/	/	U	U	S	/	S	M	U	S	S	S	S	M	S	U	U	U	/	/
Hydrofluoric Acid (50 %)		U	U	U	U	/	/	U	/	/	U	U	U	U	S	U	U	U	S	S	M	M	S	U	U	U	/	M
Hydrochloric Acid (conc.)		U	U	U	U	/	U	U	M	/	U	M	U	U	M	U	U	U	/	S	/	U	S	U	U	U	/	/
Formaldehyde (40 %)		M	M	M	S	S	S	S	M	S	S	S	S	M	S	S	S	U	S	S	M	S	S	S	M	S	M	U
Glutaraldehyde		S	S	S	S	/	/	S	/	S	S	S	S	S	S	S	/	/	S	S	S	/	/	S	S	S	/	/
Glycerol		M	S	S	/	S	S	S	S	S	S	S	S	S	S	S	S	/	S	S	S	S	S	S	S	S	S	S
Guanidine Hydrochloride		U	U	S	/	S	S	S	/	S	S	S	S	S	S	S	/	/	S	S	S	S	S	S	U	S	S	S
Haemo-Sol™		S	S	S	/	/	/	S	/	S	S	S	S	S	S	S	/	/	S	S	S	S	S	S	S	S	S	S
Hexane		S	S	S	/	S	S	S	/	S	S	U	S	U	M	U	S	S	U	S	S	M	S	U	S	S	U	S

CHEMICAL	MATERIAL	ALUMINIUM	ANODIC COATING for ALUMINIUM	BUNA N	CELLULOSE ACETATE BUTYRATE	POLYURETHANE ROTOR PAINT	COMPOSITE Carbon Fiber/Epoxy	DELRIN™	ETHYLENE PROPYLENE	GLASS	NEOPRENE	NORYL™	NYLON	PET1, POLYCLEAR™, CLEARCRIMP™	POLYALLOMER	POLYCARBONATE	POLYESTER, GLASS THERMOSET	POLYTHERMIDE	POLYETHYLENE	POLYPROPYLENE	POLYSULFONE	POLYVINYL CHLORIDE	RULON A™, TEFLON™	SILICONE RUBBER	STAINLESS STEEL	TITANIUM	TYGON™	VITON™
Isobutyl Alcohol		/	/	M	U	/	/	S	S	/	U	/	S	U	S	S	M	S	S	S	/	S	S	S	/	S	/	S
Isopropyl Alcohol		M	M	M	U	S	S	S	S	S	U	S	S	U	S	U	M	S	S	S	S	S	S	S	M	M	M	S
Iodoacetic Acid		S	S	M	/	S	S	S	/	S	M	S	S	M	S	S	/	M	S	S	S	S	S	M	S	S	M	M
Potassium Bromide		U	S	S	/	S	S	S	/	S	S	S	S	S	S	S	S	S	S	S	/	S	S	S	M	S	S	S
Potassium Carbonate		M	U	S	S	S	S	S	/	S	S	S	S	S	S	U	S	S	S	S	S	S	S	S	S	S	S	S
Potassium Chloride		U	S	S	/	S	S	S	S	S	S	S	S	S	S	S	/	S	S	S	S	S	S	S	U	S	S	S
Potassium Hydroxide (5 %)		U	U	S	S	S	S	M	/	S	S	S	S	/	S	U	S	S	S	S	S	S	S	M	U	M	S	U
Potassium Hydroxide (conc.)		U	U	M	U	/	/	M	/	M	S	S	/	U	M	U	U	U	S	M	/	M	U	/	U	U	/	U
Potassium Permanganate		S	S	S	/	S	S	S	/	S	S	S	U	S	S	S	M	/	S	M	S	U	S	S	M	S	U	S
Calcium Chloride		M	U	S	S	S	S	S	S	S	S	S	S	S	S	M	S	/	S	S	S	S	S	S	M	S	S	S
Calcium Hypochlorite		M	/	U	/	S	M	M	S	/	M	/	S	/	S	M	S	/	S	S	S	M	S	M	U	S	/	S
Kerosene		S	S	S	/	S	S	S	U	S	M	U	S	U	M	M	S	/	M	M	M	S	S	U	S	S	U	S
Sodium Chloride (10 %)		S	/	S	S	S	S	S	S	/	/	/	S	S	S	S	S	/	S	S	S	S	/	S	S	M	/	S
Sodium Chloride (sat'd)		U	/	S	U	S	S	S	/	/	/	/	S	S	S	S	S	/	S	S	/	S	/	S	S	M	/	S
Carbon Tetrachloride		U	U	M	S	S	U	M	U	S	U	U	S	U	M	U	S	S	M	M	S	M	M	M	M	U	S	S
Aqua Regia		U	/	U	U	/	/	U	/	/	/	/	/	U	U	U	U	U	U	U	/	/	/	/	/	S	/	M
Solution 555 (20 %)		S	S	S	/	/	/	S	/	S	S	S	S	S	S	S	/	/	S	S	S	/	S	S	S	S	S	S
Magnesium Chloride		M	S	S	/	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	M	S	S	S
Mercaptoacetic Acid		U	S	U	/	S	M	S	/	S	M	S	U	U	U	U	/	S	U	U	S	M	S	U	S	S	S	S
Methyl Alcohol		S	S	S	U	S	S	M	S	S	S	S	S	U	S	U	M	S	S	S	S	S	S	S	M	S	M	U
Methylene Chloride		U	U	U	U	M	S	S	U	S	U	U	S	U	U	U	U	U	M	U	U	U	S	S	M	U	S	U
Methyl Ethyl Ketone		S	S	U	U	S	S	M	S	S	U	U	S	U	S	U	U	U	S	S	U	U	S	S	S	S	U	U
Metrizamide™		M	S	S	/	S	S	S	/	S	S	S	S	/	S	S	/	/	S	S	S	S	S	S	M	S	S	S
Lactic Acid (100 %)		/	/	S	/	/	/	/	/	/	M	S	U	/	S	S	S	M	S	S	/	M	S	M	S	S	/	S
Lactic Acid (20 %)		/	/	S	S	/	/	/	/	/	M	S	M	/	S	S	S	S	S	S	S	M	S	M	S	S	/	S
N/Butyl Alcohol		S	/	S	U	/	/	S	/	/	S	M	/	U	S	M	S	S	S	S	M	M	S	M	/	S	/	S
N/Butyl Phthalate		S	S	U	/	S	S	S	/	S	U	U	S	U	U	U	M	/	U	U	S	U	S	M	M	S	U	S
N, N-Dimethyl-formamide		S	S	S	U	S	M	S	/	S	S	U	S	U	S	U	U	/	S	S	U	U	S	M	S	S	S	U
Sodium Borate		M	S	S	S	S	S	S	S	S	S	S	U	S	S	S	S	/	S	S	S	S	S	S	M	S	S	S
Sodium Bromide		U	S	S	/	S	S	S	/	S	S	S	S	S	S	S	S	/	S	S	S	S	S	S	M	S	S	S
Sodium Carbonate (2 %)		M	U	S	S	S	S	S	S	S	S	S	S	S	S	U	S	S	S	S	S	S	S	S	S	S	S	S

CHEMICAL	MATERIAL	ALUMINIUM	ANODIC COATING for ALUMINIUM	BUNA N	CELLULOSE ACETATE BUTYRATE	POLYURETHANE ROTOR PAINT	COMPOSITE Carbon Fiber/Epoxy	DELRIN™	ETHYLENE PROPYLENE	GLASS	NEOPRENE	NORYL™	NYLON	PET1, POLYCLEAR™,CLEARCRIMP™	POLYALLOMER	POLYCARBONATE	POLYESTER, GLASS THERMOSET	POLYTHERMIDE	POLYETHYLENE	POLYPROPYLENE	POLYSULFONE	POLYVINYL CHLORIDE	RULON A™, TEFLON™	SILICONE RUBBER	STAINLESS STEEL	TITANIUM	TYGON™	VITON™
Sodium Dodecyl Sulfate		S	S	S	/	S	S	S	/	S	S	S	S	S	S	S	/	S	S	S	S	S	S	S	S	S	S	S
Sodium Hypochlorite (5 %)		U	U	M	S	S	M	U	S	S	M	S	S	S	M	S	S	S	S	M	S	S	S	M	U	S	M	S
Sodium Iodide		M	S	S	/	S	S	S	/	S	S	S	S	S	S	S	/	/	S	S	S	S	S	S	M	S	S	S
Sodium Nitrate		S	S	S	/	S	S	S	S	S	S	S	S	S	S	S	S	/	S	S	S	S	S	U	S	S	S	S
Sodium Sulfate		U	S	S	/	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	M	S	S	S
Sodium Sulfide		S	/	S	S	/	/	/	S	/	/	/	S	S	S	U	U	/	/	S	/	/	/	S	S	M	/	S
Sodium Sulfite		S	S	S	/	S	S	S	S	M	S	S	S	S	S	S	M	/	S	S	S	S	S	S	S	S	S	S
Nickel Salts		U	S	S	S	S	S	/	S	S	S	/	/	S	S	S	S	/	S	S	S	S	S	S	M	S	S	S
Oils (Petroleum)		S	S	S	/	/	/	S	U	S	S	S	S	U	U	M	S	M	U	U	S	S	S	U	S	S	S	S
Oils (Other)		S	/	S	/	/	/	S	M	S	S	S	S	U	S	S	S	S	U	S	S	S	S	/	S	S	M	S
Oleic Acid		S	/	U	S	S	S	U	U	S	U	S	S	M	S	S	S	S	S	S	S	S	S	M	U	S	M	M
Oxalic Acid		U	U	M	S	S	S	U	S	S	S	S	S	U	S	U	S	S	S	S	S	S	S	S	U	M	S	S
Perchloric Acid (10 %)		U	/	U	/	S	U	U	/	S	M	M	/	/	M	U	M	S	M	M	/	M	S	U	/	S	/	S
Perchloric Acid (70 %)		U	U	U	/	/	U	U	/	S	U	M	U	U	M	U	U	U	M	M	U	M	S	U	U	S	U	S
Phenol (5 %)		U	S	U	/	S	M	M	/	S	U	M	U	U	S	U	M	S	M	S	U	U	S	U	M	M	M	S
Phenol (50 %)		U	S	U	/	S	U	M	/	S	U	M	U	U	U	U	U	S	U	M	U	U	S	U	U	U	M	S
Phosphoric Acid (10 %)		U	U	M	S	S	S	U	S	S	S	S	U	/	S	S	S	S	S	S	S	S	S	U	M	U	S	S
Phosphoric Acid (conc.)		U	U	M	M	/	/	U	S	/	M	S	U	U	M	M	S	S	S	M	S	M	S	U	M	U	/	S
Physiologic Media (Serum, Urine)		M	S	S	S	/	/	S	/	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Picric Acid		S	S	U	/	S	M	S	S	S	M	S	U	S	S	S	U	S	S	S	S	U	S	U	M	S	M	S
Pyridine (50 %)		U	S	U	U	S	U	U	/	U	S	S	U	U	M	U	U	/	U	S	M	U	S	S	U	U	U	U
Rubidium Bromide		M	S	S	/	S	S	S	/	S	S	S	S	S	S	S	/	/	S	S	S	S	S	S	M	S	S	S
Rubidium Chloride		M	S	S	/	S	S	S	/	S	S	S	S	S	S	S	/	/	S	S	S	S	S	S	M	S	S	S
Sucrose		M	S	S	/	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Sucrose, Alkaline		M	S	S	/	S	S	S	/	S	S	S	S	S	S	U	S	S	S	S	S	S	S	S	M	S	S	S
Sulfosalicylic Acid		U	U	S	S	S	S	S	/	S	S	S	U	S	S	S	/	S	S	S	/	S	S	S	U	S	S	S
Nitric Acid (10 %)		U	S	U	S	S	U	U	/	S	U	S	U	/	S	S	S	S	S	S	S	S	S	M	S	S	S	S
Nitric Acid (50 %)		U	S	U	M	S	U	U	/	S	U	S	U	U	M	M	U	M	M	M	S	S	S	U	S	S	M	S
Nitric Acid (95 %)		U	/	U	U	/	U	U	/	/	U	U	U	U	M	U	U	U	U	M	U	U	S	U	S	S	/	S
Hydrochloric Acid (10 %)		U	U	M	S	S	S	U	/	S	S	S	U	U	S	U	S	S	S	S	S	S	S	S	U	M	S	S
Hydrochloric Acid (50 %)		U	U	U	U	S	U	U	/	S	M	S	U	U	M	U	U	S	S	S	S	M	S	M	U	U	M	M
Sulfuric Acid (10 %)		M	U	U	S	S	U	U	/	S	S	M	U	S	S	S	S	S	S	S	S	S	S	U	U	U	S	S
Sulfuric Acid (50 %)		M	U	U	U	S	U	U	/	S	S	M	U	U	S	U	U	M	S	S	S	S	S	U	U	U	M	S
Sulfuric Acid (conc.)		M	U	U	U	/	U	U	M	/	/	M	U	U	S	U	U	U	M	S	U	M	S	U	U	U	/	S
Stearic Acid		S	/	S	/	/	/	S	M	S	S	S	S	/	S	S	S	S	S	S	S	S	S	M	M	S	S	S
Tetrahydrofuran		S	S	U	U	S	U	U	M	S	U	U	S	U	U	U	/	M	U	U	U	U	S	U	S	S	U	U

CHEMICAL	MATERIAL	ALUMINIUM	ANODIC COATING for ALUMINIUM	BUNA N	CELLULOSE ACETATE BUTYRATE	POLYURETHANE ROTOR PAINT	COMPOSITE Carbon Fiber/Epoxy	DELRIN™	ETHYLENE PROPYLENE	GLASS	NEOPRENE	NORYL™	NYLON	PET[1], POLYCLEAR™, CLEARCRIMP™	POLYALLOMER	POLYCARBONATE	POLYESTER, GLASS THERMOSET	POLYTHERMIDE	POLYETHYLENE	POLYPROPYLENE	POLYSULFONE	POLYVINYL CHLORIDE	RULON A™, TEFLON™	SILICONE RUBBER	STAINLESS STEEL	TITANIUM	TYGON™	VITON™
Toluene		S	S	U	U	S	S	M	U	S	U	U	S	U	U	U	S	U	M	U	U	U	S	U	S	U	U	M
Trichloroacetic Acid		U	U	U	/	S	S	U	M	S	U	S	U	U	S	M	/	M	S	S	U	U	S	U	U	U	M	U
Trichloroethane		S	/	U	/	/	/	M	U	/	U	/	S	U	U	U	U	U	U	U	U	U	S	U	/	S	/	S
Trichloroethylene		/	/	U	U	/	/	/	U	/	U	/	S	U	U	U	U	U	U	U	U	U	S	U	/	U	/	S
Trisodium Phosphate		/	/	/	S	/	/	M	/	/	/	/	/	/	S	/	/	S	S	S	/	/	S	/	/	S	/	S
Tris Buffer (neutral pH)		U	S	S	S	S	S	S	/	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Triton X/100™		S	S	S	/	S	S	S	/	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Urea		S	/	U	S	S	S	S	/	/	/	/	S	S	S	M	S	S	S	S	/	S	S	S	M	S	/	S
Hydrogen Peroxide (10 %)		U	U	M	S	S	U	U	/	S	S	S	U	S	S	S	M	U	S	S	S	S	S	S	M	S	U	S
Hydrogen Peroxide (3 %)		S	M	S	S	S	/	S	/	S	S	S	S	S	S	S	S	M	S	S	S	S	S	S	S	S	S	S
Xylene		S	S	U	S	S	S	M	U	S	U	U	U	U	U	U	M	U	M	U	U	U	S	U	M	S	U	S
Zinc Chloride		U	U	S	S	S	S	U	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	U	S	S	S
Zinc Sulfate		U	S	S	/	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Citric Acid (10 %)		M	S	S	M	S	S	M	S	S	S	S	S	S	S	S	S	M	S	S	S	S	S	S	S	S	S	S

[1]Polyethlyeneterephtalate

Key

S – Satisfactory.

M – Moderate attack, may be satisfactory for use in centrifuge depending on length of exposure, speed involved, etc.; suggest testing under actual conditions of use.

U – Unsatisfactory, not recommended.

/ – Performance unknown; suggest testing, using sample to avoid loss of valuable material.

NOTICE

Chemical resistance data is included only as a guide to product use. Because no organized chemical compatibility data exists for materials under the stress of centrifugation, when in doubt we recommend pretesting sample lots.

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Thermo Electron LED GmbH
Zweigniederlassung Osterode
Am Kalkberg, 37520 Osterode am Harz
Germany

thermofisher.com/rotors

Australia +61 39757 4300
Austria +43 1 801 40 0
Belgium +32 9 272 54 82
China +800 810 5118, +400 650 5118
France +33 2 2803 2180
Germany national toll free 0800 1 536 376
Germany international +49 6184 90 6000
India toll free +1800 22 8374
India +91 22 6716 2200
Italy +39 02 95059 552

Japan +81 3 5826 1616
Korea +82 2 2023 0600
Netherlands +31 76 579 55 55
New Zealand +64 9 980 6700
Nordic / Baltic / CIS countries +358 10 329 2200
Russia +7 812 703 42 15, +7 495 739 76 41
Singapore +82 2 3420 8700
Spain / Portugal +34 93 223 09 18
Switzerland +41 44 454 12 12

UK / Ireland +44 870 609 9203
USA / Canada +1 866 984 3766

Other Asian Countries +852 3107 7600
Countries not listed +49 6184 90 6000

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50143334 is the original instruction manual.

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