


**Standard configuration and scope of delivery SOXTHERM / MULTISTAT / SOXTHERM Manager**

Type	SOX 2-place	SOX 4-place	SOX 6-place	MULTISTAT <sup>1)</sup>	SOX-Manager <sup>1)2)</sup>
Number of extraction places	2	4	6	-	-
Glass extraction beaker	4	8	12	-	-
Holder for extraction thimbles	2	4	6	-	-
Extraction thimbles	25	25	25	-	-
Tongs for extraction beaker	1	1	1	-	-
Box of boiling stones, 250 g	1	1	1	-	-
Rack for 6 extraction beakers	1	1	1	-	-
Hose set, complete	1	1	1	-	-
Line filter	1	1	1	1	-
Plug for safety temperature 135 °C	1	1	1	-	-
Plug for safety temperature 200 °C	1	1	1	-	-
Plug for safety temperature 300 °C	1	1	1	-	-
Level control for solvent tank	yes	yes	yes	-	-
Visual and acoustic error messages	yes	yes	yes	-	-
RS-485 interface	2	2	2	2	-
RS 232 interface	-	-	-	1	-
Data cable RS-485	1	1	1	-	-
Data cable RS-232	-	-	-	-	1
USB/RS adapter	-	-	-	-	1
Language selection	-	-	-	yes	yes
Programmable methods	-	-	-	20	any
CSV data export	-	-	-	-	yes
Database with tables	-	-	-	-	yes
User name can be defined	-	-	-	-	yes

1) MULTISTAT or SOXTHERM-Manager are not included in scope of delivery of the SOXTHERM extraction systems and must be ordered separately (page 2).

2) PC / Laptop and printer are not included in scope of delivery of the SOXTHERM-Manager.

**Technical Data SOXTHERM**

Data	SOX 2-place	SOX 4-place	SOX 6-place	MULTISTAT	SOX-Manager
max. cooling water consumption [l/min]	3	3	3	-	-
Cooling water pressure <sup>2)</sup> [bar]	1 - 6	1 - 6	1 - 6	-	-
Nominal voltage [VAC]	230 / 115	230 / 115	230 / 115	230 / 115	-
Frequency [Hz]	50 - 60	50 - 60	50 - 60	50 - 60	-
Nominal wattage [W]	400	800	1200	6	-
Weight [kg]	28	36,5	43	2,5	-
Dimensions W / D / H [mm]	250 / 410 / 580	405 / 410 / 580	565 / 410 / 580	180 / 260 / 125	-
max. Temperature [°C]	300	300	300	-	-
Temperature accuracy [°C]	+/- 0,5	+/- 0,5	+/- 0,5	-	-

3) Pressure at device input

4) measured at a constant hot plate temperature of 190 °C

## ORDER INFORMATION

### Macro or Micro

Version Macro is equipped with extraction beakers macro with a liquid capacity of 50 - 150 ml, suitable for standard sample quantities. Version Micro is equipped with extraction beakers micro with a liquid capacity of 50 - 100 ml, suitable for small sample quantities to save solvent.

### SOXTHERM



Order No.	Type	Description
13-0005	SOX412	SOXTHERM 2-place, macro, 230 V
13-0004	SOX402	SOXTHERM 2-place, micro, 230 V
13-0017	SOX412	SOXTHERM 2-place, macro, 115 V
13-0016	SOX402	SOXTHERM 2-place, micro, 115 V
13-0105	SOX412	SOXTHERM 2-place, macro, 230 V (with O-rings Parofluor)
13-0106	SOX402	SOXTHERM 2-place, micro, 230 V (with O-rings Parofluor)
13-0104	SOX401	SOXTHERM 2-place, macro, 115 V (with O-rings Parofluor)
-	-	-



13-0007	SOX414	SOXTHERM 4-place, macro, 230 V
13-0006	SOX404	SOXTHERM 4-place, micro, 230 V
13-0019	SOX414	SOXTHERM 4-place, macro, 115 V
13-0018	SOX404	SOXTHERM 4-place, micro, 115 V
13-0107	SOX414	SOXTHERM 4-place, macro, 230 V (with O-rings Parofluor)
13-0102	SOX404	SOXTHERM 4-place, micro, 230 V (with O-rings Parofluor)
13-0103	SOX414	SOXTHERM 4-place, macro, 115 V (with O-rings Parofluor)
-	-	-



13-0009	SOX416	SOXTHERM 6-place, macro, 230 V
13-0008	SOX406	SOXTHERM 6-place, micro, 230 V
13-0021	SOX416	SOXTHERM 6-place, macro, 115 V
13-0020	SOX406	SOXTHERM 6-place, micro, 115 V
13-0109	SOX416	SOXTHERM 6-place, macro, 230 V (with O-rings Parofluor)
13-0108	SOX406	SOXTHERM 6-place, micro, 230 V (with O-rings Parofluor)
13-0110	SOX416	SOXTHERM 6-place, macro, 115 V (with O-rings Parofluor)
-	-	-

### MULTISTAT Control Unit



Order No.	Type	Description
13-0011	MS	MULTISTAT control unit 230 V, for control and monitoring of max. 4 SOXTHERM units.
13-0023	MS	MULTISTAT control unit 115 V, for control and monitoring of max. 4 SOXTHERM units.

### SOXTHERM-Manager



Order No.	Type	Description
13-0012	SXPC	Software for control and monitoring of max. 4 SOXTHERM units. CD with controlling software, GerBus adapter and Software key. PC / Laptop* and printer are not included in scope of delivery.

\*System requirements: Windows XP, Windows 7, Windows 10, Windows 11  
1 x USB-interface or 1 x serial interface.

## ACCESSORIES AND CONSUMABLES

Make sure to use only original C. Gerhardt spare parts in order to obtain the best possible results. These parts have been tested thoroughly in the C. Gerhardt application lab.

### COMPRESSOR



Order No.	Type	Description
13-0010	KOM	Compressor for compressed air supply of the SOX THERM units. Prepared for the operation with SOX THERM. 230 V, 50 Hz, max. 8 bar., W / D / H mm: 290 / 340 / 340
		Note If connected to the in-plant compressed air supply, no compressor is needed. However, the air must be dried and filtered (5 µ).

### CONNECTION PIECE FOR COMPRESSOR



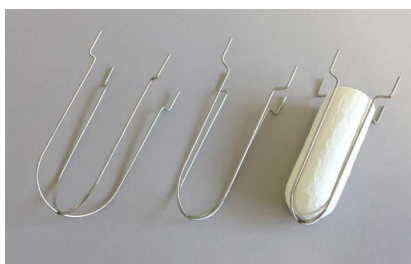
Order No.	Type	Description
1006270		Connection piece with quick coupling NW 2.7, for connection to compressor no. 13-0010. Allows the connection of up to 4 SOX THERM units to only one compressor.

### EXTRACTION THIMBLES



Order No.	Type	Description
13-0054	SE33A	Extraction thimbles Ø 33 x 80 mm, 25 pc. in box
13-0057	SE33B	Extraction thimbles Ø 33 x 94 mm, 25 pc. in box
13-0095	SE34GL	<b>Glass extraction thimble, slitted, Ø 34 x 94 mm, acid and heat resistant</b>
13-0096	SE40GL	<b>Glass extraction thimble, slitted, Ø 40 x 94 mm, acid and heat resistant</b>

### HOLDER FOR EXTRACTION THIMBLES



Order No.	Type	Description
13-0062	SHK2	for Ø 33 mm thimbles, 1 pc. fits in extraction beaker 13-0050, 13-0051, 13-0098
13-0063	SHK3	for Ø 40 mm thimbles, 1 pc. fits in extraction beaker 13-0050, 13-0098
13-0061	SHK1	for Ø 25 mm thimbles, 1 pc. fits in extraction beaker 13-0050, 13-0051, 13-0098

### BOILING STONES



Order No.	Type	Description
1000774	ST250	Boiling stones Type A, in 250 g package
13-0047	ST50	Boiling stones resistant, 50 g bottle

## EXTRACTION BEAKERS GLASS



Order No.	Type	Description
13-0050	SEBMA	Extraction beaker Ø 54 x 130 mm, Macro version, Standard model, 4 pc. in box
13-0051	SEBMI	Extraction beaker Ø 46 x 130 mm, Micro version, Version with smaller cylinder diameter. For small sample quantities, to save solvent, 1 pc.
13-0077	SEBMA	Extraction beaker Ø 54 x 130 mm, Macro version <b>Barcode</b> . Same as extraction beaker 13-0050, with Barcode, 1 pc.

## EXTRACTION BEAKER STAINLESS STEEL



Order No.	Type	Description
13-0098	SEBES	Stainless steel extraction beaker set, ideally suited for extraction with petroleum ether and n-hexane. Set consisting of: - 1 x Extraction beaker stainless steel - 1 x Sealing ring, Teflon - 1 x Adapter ring, Teflon

## EXTRACTION BEAKER WITH UV-FILTER



Order No.	Type	Description
13-0080	SEBBR	Especially for the residue analysis of plant protection products. The UV filter prevents the pesticides from decomposing during the analysis. - 1 x Set with 4 Extraction beakers brown Ø 54 x 130 mm

## RATE CONTROLLER FOR COOLING WATER



Rate controller with double function:  
 - Setting the cooling water flow rate to solve cooling water  
 - Adapter for the serial connection of a second SOX THERM-extraction unit

Order No.	Type	Description
1002528	KMR	Rate controller for cooling water SOX THERM with quick coupling NW 5

## INSERT RACK



Order No.	Type	Description
13-0073	EGMA	Insert rack 6-place, stainless steel Suitable for all extraction beaker macro and micro

**JOINT RINGS (O-RINGS)**


The standard delivery for SOXThERM includes Viton O-rings. Depending of the solvent used we offer O-rings made of different material (**see "table of solvents"**).

Order No.	Type	Description
1000578	O-VIT	O-Ring Viton Ø 55 x 4 mm, 1 pc. (green)
1000594	O-EPD	O-Ring EPDM Ø 55 x 4 mm, 1 pc. (black)
1000595	O-PAR	O-Ring Parofluor Ø 55 x 4 mm, 1 pc. (black)

**TABLE OF SOLVENTS**

Used SOLVENT	Micro version	Boiling point [°C]	Hotplate temperature [°C]	T-class	Solvent reduction interval [min]	Solvent reduction interval [s]	O-Ring VITON No. 1000578	O-Ring EPDM No. 1000594	O-Ring PAROFLUOR No. 1000595
Acetone	yes	56,2	180	200	4,5	1		✓	✓
Acetone: n-Hexan 1:1	yes		180	200	3	1			✓
Acetonitril	yes	81,5						✓	
Benzene	yes	80-81					✓		✓
1-Butanol (n-Butanol)	no	117,2							✓
2-Butanol	no	99							✓
tert-Butanol	no	82,2	280	300	4	1	✓	✓	✓
Chloroform (Trichlormethane)	yes	61,7	190	200	5	1	✓		✓
Cyclohexane	yes	80,7	190	200	5	1	✓		✓
Dichloromethane <sup>2</sup>	yes	40	150	200	4	1			✓
Diethyl Ether <sup>2</sup>	yes	34,6	125	135	3	1			✓
1,4-Dioxane	no	101							✓
Ethanol	yes	78,5	290	300	5	1		✓	✓
Ethyl Acetate	no	77	190	200	4	1			✓
Ethylene Dichlorid	no	83					✓		✓
Ethylenglykol <sup>1</sup>	-	-	-	-	-	-			
n-Heptane	no	98	180	200	3,5	1	✓		✓
n-Hexane	yes	68,9	180	200	3,5	1	✓		✓
n-Hexane / Isopropanol 3:1	yes		220	300	4	1	✓		✓
Isopropanol	no	82	280	300	4	1	✓	✓	✓
Methanol	yes	65	270	300	4	1		✓	✓
Methylene Chloride	yes	40	150	200	4	1			✓
Methyl-tert.-butylether (MTBE)	yes	55	180	200	4	1			✓
n-Pentane	yes	36					✓		✓
Petroleum Ether 40/60	yes	40-60	150	200	3,5	1	✓		✓
Petroleum Benzine	yes	40-60	150	200	3,5	1	✓		✓
1-Propanol (n-Propanol)	yes	97,4					✓	✓	✓
Tetrachlormethane	no	76,8					✓		✓
Tetrahydrofuran	-	66	170	200	5	1			✓
Toluene	no	110,6	270	300	5	1			✓
1,1,1-Trichlorethane	no	70-88					✓		✓
1,1,2-Trichlorethane	no	111-114					✓		✓
Trichlorethylen	no	87					✓		✓
Trichlormethan	no	61,7	190	200	5	1	✓		✓
Wasser	no	100	291	300	15	1	✓	✓	✓
Xylol	no	137-143	280	300	15	1			✓

The hotplate temperature was determined at a cooling water temperature of 15 °C. All information without engagement.

<sup>1</sup> not applicable with SOXThERM - required hotplate temperature too high.

<sup>2</sup> required cooling water temperature 15 °C.

## RECIRCULATING COOLER FL



Recirculating cooler optimised to work with C. Gerhardt analytical systems SOXTHERM, VAPODEST, SMA and COD.

Order No.	Type	Description
10-0045	FL1201	Recirculating cooler 230 V, 1200 W, cooling water support of: - up to <b>four</b> SOXTHERM extraction units, 2-place - up to <b>three</b> SOXTHERM extraction units, 4-place - up to <b>two</b> SOXTHERM extraction units, 6-place
10-0046	FL601	Recirculating cooler 230 V, 600 W, cooling water support of: - up to <b>three</b> SOXTHERM extraction units, 2-place - up to <b>two</b> SOXTHERM extraction units, 4-place - <b>one</b> SOXTHERM extraction unit, 6-place

## Data cables + Adapter

Order No.	Type	Description
10-0199		USB-GerBus Adapter, USB/RS485
10-0193		Data cable DK45 grey, 5 m, 2 x RS485 Plug
10-0192		Data cable DK42 grey, 2 m, 2 x RS485 Plug



## SUPPORT AND SERVICE

In addition to its high quality instruments, C. Gerhardt offers comprehensive services to maintain the functionality and efficiency of your equipment.

### INSTALLATION / EQUIPMENT QUALIFICATION

Order no.	Type	Description
99-0203	ABI-SOX	Installation and Instruction SOXTHERM - Installation and connection of the unit - functional check - operating instructions
99-0207	GQF-SOX	Equipment Qualification (IQ/OQ) SOXTHERM - Installation of the unit and instruction - Installation <b>Q</b> ualification <b>I</b> Q and <b>O</b> perational <b>Q</b> ualification <b>O</b> Q, Guidance for <b>P</b> erformance <b>Q</b> ualification <b>P</b> Q - Training of laboratory personnel with certificate - Individual training certificates, if requested

### SERVICING AND MAINTENANCE CONCEPTS

For detailed information on servicing and maintenance concepts, please contact your local authorised C. Gerhardt representative.

### WORKSHOPS / SEMINARS / APPLICATIONS TRAINING

For detailed information on trainings and workshops, please contact your local authorised C. Gerhardt representative.

## APPLICATION SERVICE

The following listed applications are examples from our comprehensive application data base. Please contact your local C. Gerhardt representative or write to [application@gerhardt.de](mailto:application@gerhardt.de) to ask for one of the listed application data sheets or to ask for an application which is not yet listed.

### FAT DETERMINATION IN FOOD



Selection	Description
<input type="checkbox"/>	Fat in margarine
<input type="checkbox"/>	Fat in milk and dairy products
<input type="checkbox"/>	Fat in meat products LVU
<input type="checkbox"/>	Total fat in meat and meat products
<input type="checkbox"/>	Total fat in fish and fish products
<input type="checkbox"/>	Free fat in grain and grain products Fett
<input type="checkbox"/>	Total fat in grain and grain products
<input type="checkbox"/>	Total fat in bread and other baking goods
<input type="checkbox"/>	Free fat in potato chips
<input type="checkbox"/>	Free fat in cocoa
<input type="checkbox"/>	Total fat in chocolate
<input type="checkbox"/>	Crude fat in mustard seed
<input type="checkbox"/>	Total fat in mayonnaise
<input type="checkbox"/>	Extract content in coffee powder

### FAT IN FEED AND OILSEEDS



Selection	Description
<input type="checkbox"/>	Crude fat in feed
<input type="checkbox"/>	Crude fat in seed - Special method for foaming samples
<input type="checkbox"/>	Crude fat in oilseeds, peeled fruit and seeds

### EXTRACTION FOR SAMPLE PREPARATION / GRAVIMETRIC ANALYSIS / OTHER



Selection	Description
<input type="checkbox"/>	Organic halogens (EOX) in soil
<input type="checkbox"/>	Oil and fat in water and waste water
<input type="checkbox"/>	Hydrocarbons from soil
<input type="checkbox"/>	Fat coating of artificial fertilizers - Solvent cyclohexane
<input type="checkbox"/>	Fat coating of artificial fertilizers - Solvent chloroform
<input type="checkbox"/>	Fat coating of artificial fertilizers - Solvent petroleum ether
<input type="checkbox"/>	Coatings and Finishes of Textiles
<input type="checkbox"/>	Residue of Resin in Pulp Pre-Products
<input type="checkbox"/>	Residue of Resin in Cellulose
<input type="checkbox"/>	Fat in Leather
<input type="checkbox"/>	Cross-Linking Degree of Polymers in EVA
<input type="checkbox"/>	Paraffin in Wood Chips
<input type="checkbox"/>	Fat in Downy Feathers



## TABLE OF CONFIGURATION

Please arrange the required system

### EXTRACTION UNITS / CONTROLLER

Quantity	Order No.	Type	Description

### ACCESSORIES

Quantity	Order No.	Type	Description

### SUPPORT AND SERVICE

Quantity	Order No.	Type	Description

Send offer to:

Customer No.	
Company	
Name	
Address	
Tel.	
E-Mail	
Web	

