Application:

Oventrop brass ball valves "Optibal" with full flow are used in industrial, commercial and domestic installations for the isolation of pipes transporting fluids. Depending on the model, they may be used for the following fluids: water, mineral, heating, hydraulic and diesel oil and air (see also table on the last page).

Nominal pressure PN 16 for water temperatures up to 100 °C.

Function:

The valve is opened/closed by turning the lever/handle by 90°. The position of the ball is indicated by the position of the lever or handle which moves parallel to the ball. Even if the lever or handle is removed, the stem with two flats still indicates the position of the ball.

Note: It is recommended to operate ball valves which are in a permanent position once or twice a year.

Advantages:

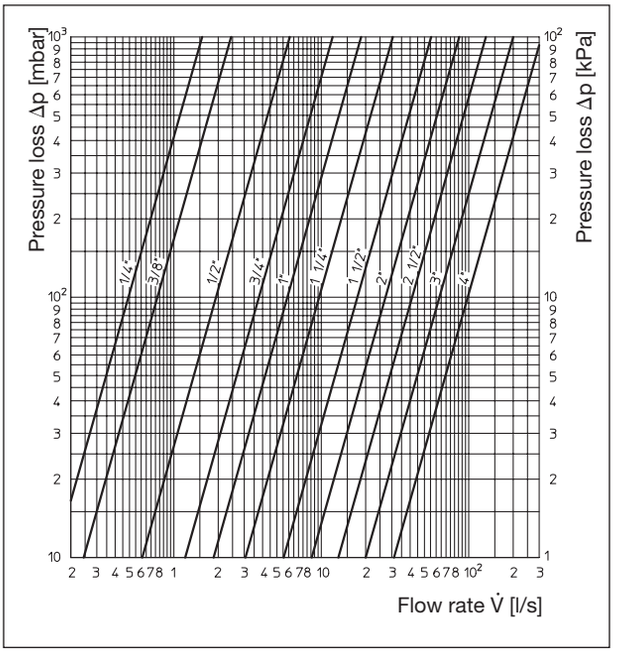
- full flow according to DIN 3357-4 and DIN EN 1983
- wide range of application
- all standard types of handles are available:
  - lever made of galvanised steel with red plastic coating
  - T-handle made of red lacquered metal
  - anthracite extended plastic handle with red cover plug
- suitable for high pressures due to blow-off proof stem and solid bodies
- PN 16
- ball valves with metal T-handle or steel lever may subsequently be equipped with an extended plastic handle by use of the conversion set, item no. 1076071-73
- simple insulation of the models with extended plastic handle or stem extension
- extended plastic handles may subsequently be equipped with a thermometer by use of the thermometer conversion set, item no. 1077181-83
- model with press connection for copper and stainless steel pipes available
- components and auxiliary materials free from silicone
- suitable for water and glycol mixtures with a maximum glycol proportion of 50 %

Insulation:

The Oventrop brass ball valves "Optibal" with extended plastic handle may be equipped with standard insulations according to the German Energy Saving Directive.

Oventrop offers insulations shells (see accessories) for the brass ball valves "Optibal" with female thread or press connection on both ports.

"Optibal"



Flow chart

Flow values (water):

The flow values may vary due to the different screw-in depths of the threaded pipes into the ball valve and a not fully opened switching ball.

DN	k_{VS} [m³/h]	DN	k_{VS} [m³/h]	DN	k_{VS} [m³/h]
8	5.6	25	67	65	470
10	8.8	32	99	80	720
15	22	40	143	100	1120
20	43	50	254		

“Optibal” Ball valves, brass, nickel plated, both ports female thread:

Application:
Heating systems, water, industry.

Pipeline fitting for fluids.

Up to DN 50:
Max. operating pressure p_S: 16 bar (PN 16), for cold water 20 bar, for air and other harmless gases*) 10 bar.
Operating temperature t_S: -10 °C up to +100 °C

DN 65 up to DN 100:
Max. operating pressure p_S: 16 bar at 70 °C (PN 16)
12 bar at 85 °C
8 bar at 100 °C

Operating temperature t_S: -10 °C up to +100 °C
Ball valve with galvanised steel lever, DN 65 - DN 100, item no. 1076020-32, CE marking according to directive 2014/68/EU.

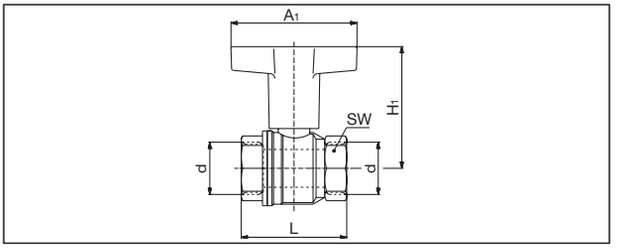
Attention: Prevent formation of ice as it can destroy the pipework and valve.

*) not for gaseous fluids group 1 according to directive 2014/68/EU (e.g. toxic or flammable gases) and not for oxygen.

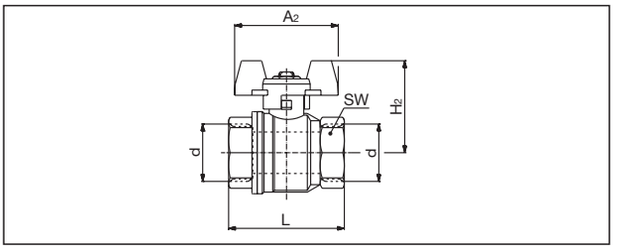
Construction:
Two-piece body made of brass, nickel plated, full flow, ball made of chrome plated brass with PTFE seats, brass stem with double FKM O-ring seal.

DN	d ISO 228	A_1	A_2	A_2	H_1	H_2	H_3	L	SW*
8	G ¼	-	-	100	-	-	38	39	20
10	G ⅜	60	50	100	64	38.5	38	39	20
15	G ½	60	50	100	68	43	43	50	25
20	G ¾	80	60	120	73	49	50	54	31
25	G 1	80	60	120	77	53	54	67	38
32	G 1¼	120	113	160	116	84	73	77	48
40	G 1½	120	-	160	122	-	79	90	54
50	G 2	120	-	160	129	-	86	106	66
65	G 2½	-	-	250	-	-	134	136	85
80	G 3	-	-	250	-	-	141	157	99
100	G 4	-	-	250	-	-	156	191	125

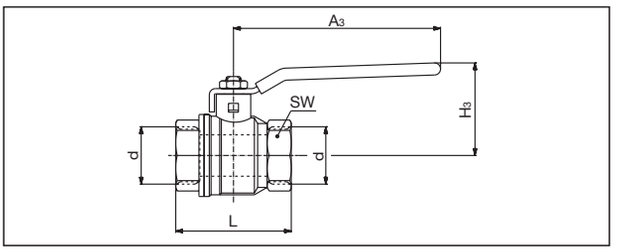
*SW = Spanner size



Dimensions item no. 1077103-16 (DN 10 up to DN 50)
Extended plastic handle



Dimensions item no. 1076103-10 (DN 10 up to DN 32)
Metal T-handle (up to DN 25 aluminium, DN 32 galvanised steel)



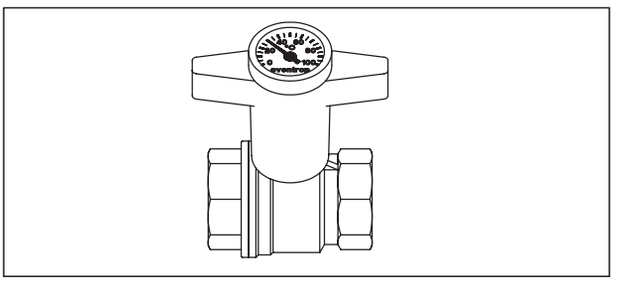
Dimensions item no. 1076002-32 (DN 8 up to DN 100)
Lever made of galvanised steel with plastic coating

“Optibal” Ball valves, brass, nickel plated, both ports female thread, with thermometer (anthracite):

Application, construction and dimensions (except for height of handle) identical to item no. 10771..

Display range: 0 °C up to 100 °C

Due to the thermometer, the dimension H_1 is increased by about 10 mm.


Dimensions item no.1078003 - 16 (DN 10 up to DN 50)
Extended plastic handle with thermometer

“Optibal” Ball valves, brass, nickel plated
one port female thread, one port male thread:

Application:
Heating systems, water, industry.

Pipeline fitting for fluids.

Max. operating pressure p_S:16 bar (PN 16), for cold water 20 bar, for air and other harmless gases*) 10 bar.
Operating temperature t_S: -10 °C up to +100 °C

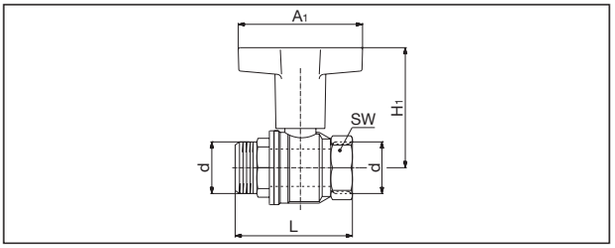
Attention: Prevent formation of ice as it can destroy the pipework and valve.

*) not for gaseous fluids group 1 according to directive 2014/68/EU (e.g. toxic or flammable gases) and not for oxygen.

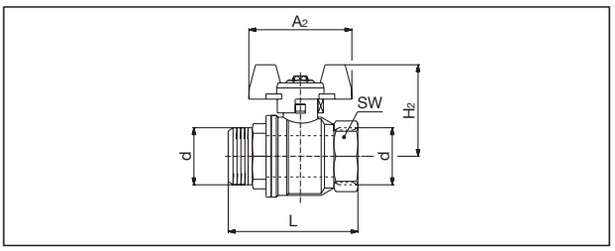
Construction:
Two-piece body made of brass, nickel plated, full flow, ball made of chrome plated brass with PTFE seats, brass stem with double FKM O-ring seal.

DN	d ISO 228	A_1	A_2	A_2	H_1	H_2	H_3	L	SW*
10	G ⅜	60	50	100	64	38.5	38	49	20
15	G ½	60	50	100	68	43	43	60	25
20	G ¾	80	60	120	73	49	50	65.5	31
25	G 1	80	60	120	77	53	54	77.5	38
32	G 1¼	120	113	160	116	84	73	89	48
40	G 1½	120	-	-	122	-	-	100	54
50	G 2	120	-	-	129	-	-	117	66

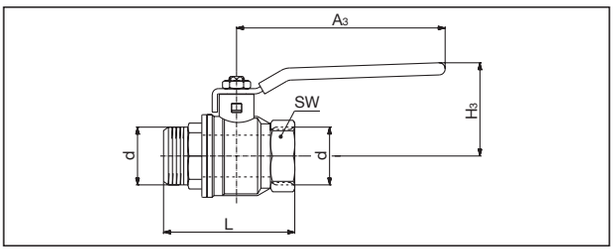
*SW = Spanner size



Dimensions item no. 1077303-16 (DN 10 up to DN 50)
Extended plastic handle



Dimensions item no. 1076303-10 (DN 10 up to DN 32)
Metal T-handle (up to DN 25 aluminium, DN 32 galvanised steel)



Dimensions item no. 1076203-10 (DN 10 up to DN 32)
Lever made of galvanised steel with plastic coating

“Optibal” Ball valves, brass, nickel plated
with press connection:

Application:
Heating systems, water, industry.

Pipeline fitting for fluids

Max. operating pressure p_S:16 bar (PN 16), for cold water 20 bar, for air and other harmless gases*) 10 bar.
Operating temperature t_S: -10 °C up to +100 °C

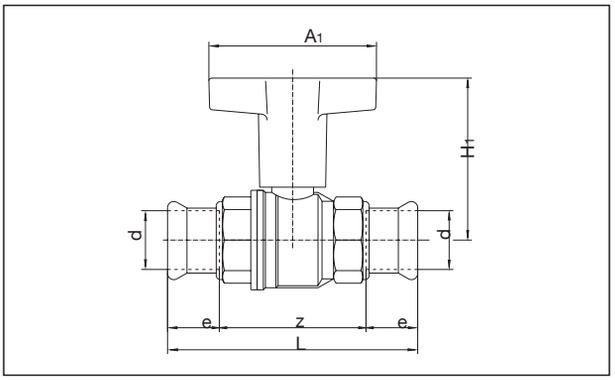
Attention: Prevent formation of ice as it can destroy the pipework and valve.

*) not for gaseous fluids group 1 according to directive 2014/68/EU (e.g. toxic or flammable gases) and not for oxygen.

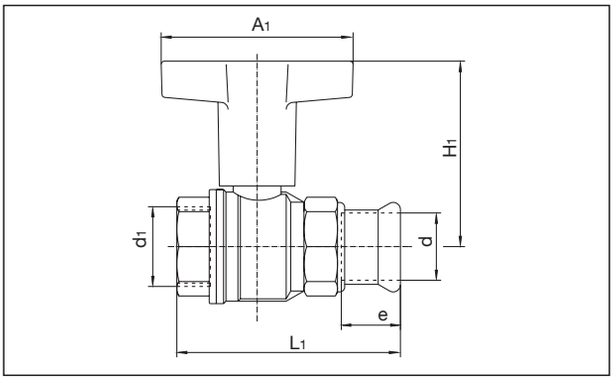
Construction:
Two-piece body made of brass, nickel plated, full flow, ball made of chrome plated brass with PTFE seats, brass stem with double FKM O-ring seal, both ports press connection made of bronze or one port female thread and one port press connection.

Press connection:
For the direct connection of copper pipe according to EN 1057 and stainless steel pipe “NiroSan”.
Pressing must be carried out to tighten the connection.
Only use press jaws with the original contours SANHA (SA), Geberit-Mapress (MM) or Viega (Profipress) in corresponding size.

DN	d	d_1	L	L_1	e	z	A_1	H_1
15	15	G ½	91.2	70.5	18.1	55	60	68
15	18	G ½	95.2	72.5	20.1	55	60	68
20	22	G ¾	109	81.5	24	61	80	73
25	28	G 1	128	97.5	27	78	80	77
32	35	G 1¼	150	113.5	32	86	120	114



Dimensions item no. 1077162 – 66 (Ø 15 – Ø 35),
Extended plastic handle



Dimensions item no.1077152 – 56 (G ½ x Ø 15 – G 1 ¼ x Ø 35),
Extended plastic handle

“Optibal” Ball valves, brass, nickel plated, with draining valve, both ports female thread:

Application:
Heating systems, water, industry.

Pipeline fitting for fluids.
Max. operating pressure p_S: 16 bar (PN 16), for cold water 20 bar, for air and other harmless gases*) 10 bar.
Operating temperature t_S: -10 °C up to +100 °C

Attention: Prevent formation of ice as it can destroy the pipework and valve.

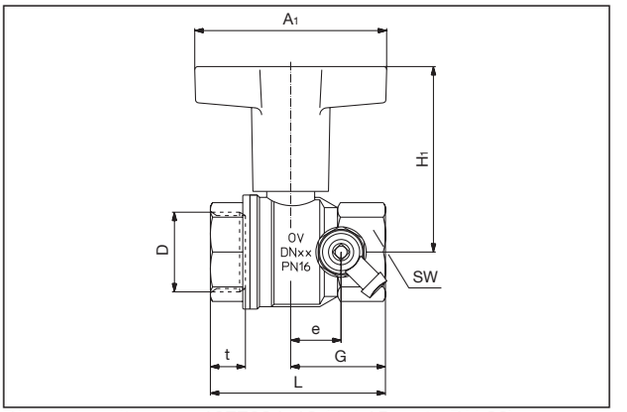
*) not for gaseous fluids group 1 according to directive 2014/68/EU (e.g. toxic or flammable gases) and not for oxygen.

Construction:
Two-piece body made of brass, nickel plated, full flow, ball made of chrome plated brass with PTFE seats, brass stem with double FKM O-ring seal.

Two lateral draining orifices G ¼, one side with plug, one side with draining valve. Draining valve with rotating outlet.

DN	D	t	L	SW*	A_1	H_1	G	e
15	G ½	11	56	25	60	68	31	16
20	G ¾	12	59.5	31	80	73	32.5	17
25	G 1	14	79.5	40	80	77	39	21
32	G 1¼	15	90.5	49	120	116	44	25

*SW = Spanner size



Dimensions item no. 1077804-10 (DN 15 up to DN 32),
Extended plastic handle

“Optibal” Ball valves, brass, nickel plated, one port female thread, one port detachable coupling with male thread:

Application:
Heating and cooling water.

Pipe fitting for central heating and cooling systems.
Max. operating pressure p_S: 16 bar (PN 16), for cold water 20 bar, for air and other harmless gases*) 10 bar.
Operating temperature t_S: -10 °C up to +100 °C

Attention: Prevent formation of ice as it can destroy the pipework and valve.

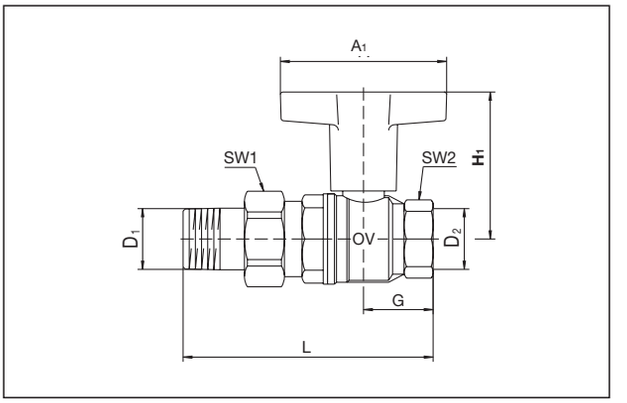
*) not for gaseous fluids group 1 according to directive 2014/68/EU (e.g. toxic or flammable gases) and not for oxygen.

Construction:
Two-piece body made of brass, nickel plated, full flow, ball made of chrome plated brass with PTFE seats, brass stem with double FKM O-ring seal.

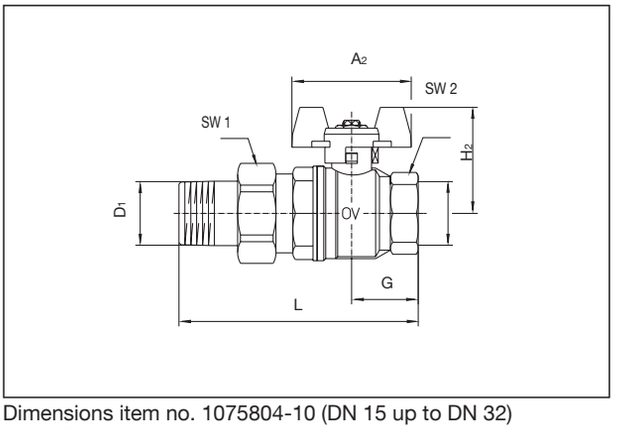
Detachable coupling with male threaded tailpipe, tapered connection to ball valve with additional EPDM O-ring.

D_1	D_2	H_1	H_2	A_1	A_2	G	L	SW_1*	SW_2*
R ½	G ½	68	43	60	50	25	87	30	25
R ¾	G ¾	73	49	80	60	27	98	37	31
R 1	G 1	77	53	80	60	33.5	115	46	38
R 1¼	G 1¼	116	84	120	113	38.5	130	52	48

*SW = Spanner size



Dimensions item no. 1075704-10 (DN 15 up to DN 32)
Extended plastic handle



Dimensions item no. 1075804-10 (DN 15 up to DN 32)
Metal T-handle (up to DN 25 aluminium, DN 32 galvanised steel)

Accessories:

Conversion set plastic handle (anthracite)

For subsequent insulation of the pipework with mounted ball valves with metal lever or T-handle, the conversion to an extended plastic handle is recommended.

Sizes	Distance *)	Item no.:
up to DN 15	35 mm	1076071
DN 20 + DN 25	36 mm	1076072
DN 32 – DN 50	64 mm	1076073

*) Distance between the upper edge of the body and the lower edge of the handle = space for the insulation

Thermometer conversion set (anthracite)

Consisting of and anthracite thermometer 0 – 100 °C and a special screw.

Sizes	Item no.:
up to DN 15	1077181
DN 20 + DN 25	1077182
DN 32 – DN 50	1077183

Stem extension

To upgrade ball valves with metal lever or T-handle. The swivel insulation shell can be sealed at the insulation by use of silicon for a diffusion tight insulation of cooling systems for instance.

Sizes	Extension	Item no.:
up to DN 15	38.5 mm	1076081
DN 20 + DN 25	39 mm	1076082
DN 32 – DN 50	64 mm	1076083
DN 65 – DN 100	85 mm	1076084

Blue cover plug for riser identification

For replacement of the existing red cover plug of the extended plastic handle.

Sizes		Item no.:
DN 10 + DN 15	Set of 10 pieces	1077171
DN 20 + DN 25	Set of 10 pieces	1077172
DN 32 – DN 50	Set of 5 pieces	1077173

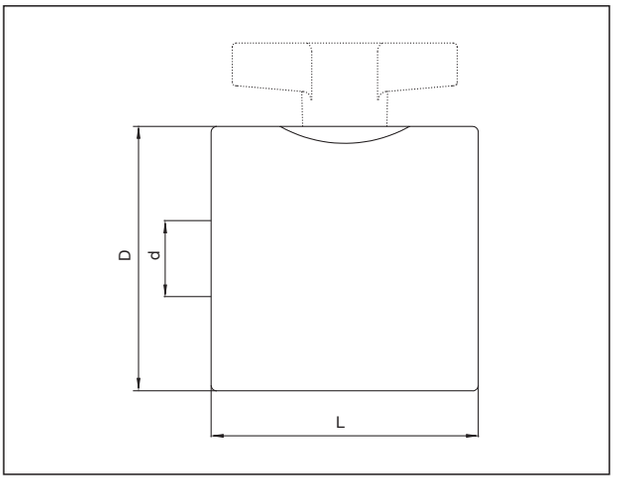
Insulation shells:

For ball valves with female thread or press connection with extended plastic handle and subsequently installed stem extension.

The double insulation shells made of anthracite coloured expanded polypropylene are easy to use and can be reused.

Building material class B2 according to DIN 4102.
Thermal conductivity 0.035 W/mK.

Meets the requirements of the German Energy Saving Directive according to appendix 5, table 1, line 5.



DN	d	D	L
10 + 15	½	74	74
20	¾	81	78
25	1	94	95
32	1¼	114	107
40	1½	132	116
50	2	166	135

Dimensions item no. 1078092-97 (DN 10 up to DN 50)

Resistance of the ball valves to fluids being transported:

The indications in the table are for general orientation. Unknown factors may impair the resistance considerably. Therefore the given values are not binding. The “Optibal” ball valves are not DVGW registered.

Values of resistance:
1 : low or no affect
2 : low or moderate affect
3 : strong affect, may not be used
- : no data existing

Fluid	Value of resistance	
	107 6x 10771 (without press connection) 10773 10780	10757 10758 10771 (with press connection) 10778
Amyl alcohol, 60 °C	3	3
Air, compressed air, dry	1	1
Air, compressed air, oily	1	3
Barium sulphate	1	1
Barium sulphide	3	3
Beer, 20 °C	2	2
Benzene	2	3
Borax, aqueous, 60 °C	1	1
Butane, gaseous, 20 °C	1	3
Carbon dioxide, dry, 60 °C	1	1
Carbon disulphide, 20 °C	3	3
Chlorine, dry, gaseous, 20 °C	3	3
Chloroform, dry, 20 °C	2	3
Citric acid, aqueous	3	3
Crude oil, 20 °C	1	3
Diesel oil, 60 °C	1	3
Ethyl alcohol, 30-96 %, 20 °C	2	2
Gasoline, trade quality	1	3
Glucose, aqueous, 80 °C	1	1
Glycerine, aqueous, 100 °C	1	1
Heating oil, 60 °C	1	3
Hydraulic oil	1	3
Hydrogen, 20 °C	1	1
Lactic acid, aqueous, 10 %, 20 °C	3	3
Linseed oil, 60 °C	2	2
Machine oil, mineral, 80 °C	2	2
Magnesium hydroxide	2	2
Magnesium sulphate, aqueous, 100 °C	3	3
Methane, 20 °	1	2
Methyl alcohol (methanol)	3	3
Methyl chloride	2	3
Methylene chloride, 20 °C	2	3
Mineral oil	1	3

Fluid	Value of resistance	
	107 6x 10771 (without press connection 10773 10780	10757 10758 10771 (with press connection) 10778
Natural gas, 20 °C	1	2
Nitrogen, gaseous, 20 °C	1	1
Oxalic acid, aqueous, 100 °C	3	3
Paraffin, aqueous, 60 °C	1	3
Petroleum, 60 °C	1	3
Petroleum ether, 60 °C	1	3
Potassium chloride, aqueous, 60 °C	3	3
Propane, gaseous, 20 °C	1	3
Refrigerating agents according to DIN 8960:		
R 11	2	3
R12	2	2
R 13	1	1
R 13 B1	2	2
R 14	1	1
R 32	3	3
R 113	2	3
R 115	2	2
R C318	2	2
Saturated steam	1	1
Sea water, 20 °C	2	2
Silicone oil, 20 °C	1	1
Soap solution, aqueous, 20 °C	2	2
Sodium bicarbonate, aqueous, 20 °C	3	3
Sodium silicate, aqueous, 60 °C	2	2
Sodium sulphate, aqueous, 60 °C	2	2
Sulphur dioxide, dry, 80 °C	2	2
Starch, aqueous, 60 °C	1	1
Tartaric acid, aqueous	3	3
Trichloroethylene, dry, 20 °C	2	3
Turpentine, 60 °C	2	3
Water	1	1
Water glycol mixture, 100 °C	1	1

Subject to technical modifications without notice.

Product range 2.2
ti 91-EN/10/MW
Edition 2020