SOLUTIONS IN GLASS

QUARTZ GLASS

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GVB SOLUTIONS IN GLASS

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INDEX

03 OUR PRODUCT AND UNS
- QUARTZ GLASS BY GVB GMBH – SOLUTIONS IN GLASS

04 PROPERTIES OF OUR QUARTZ PLATES AND TUBES
CHEMICAL COMPOSITION
HYDROXYL (OH) CONTENT

05 THERMAL PROPERTIES
MECHANICAL PROPERTIES

06 ELECTRICAL PROPERTIES
OPTICAL PROPERTIES
SPECTRAL TRANSMITTANCE PLATES

07 SPECTRAL TRANSMITTANCE TUBES

09 TUBES
- STOCK TUBES
- POSSIBLE APPLICATIONS

13 RODS
- STOCK RODS

INDEX

15 GROUND JOINTS
-STOCK GROUND JOINTS
FUTHER PRODUCTS AVAILABLE ON REQUEST

18 PLATES AND BLOCKS
-POSSIBLE APPLICATIONS
-STOCK PLATES

22 TRATAMENT AND CLEANING OF QUARTZ GLASS
RECOMMENDATIONS FOR CLEANING

OUR PRODUCT AND US

Quartz glass by GVB GmbH - Solutions in Glass

You are in need of quartz glass components for your products? We are dedicated in supporting you to and the right material for your application quickly and easily.

GVB offers a wide range of products made of **natural quartz glass** as well as synthetic **fused silica**. You can choose between cylindrical and flat glasses in a broad variety of types.

All our materials have excellent

- chemical
- thermal
- electrical
- mechanical and
- optical

properties.

Since nevertheless certain specifications differ, we will be happy to advise you on the most suitable material for your application. Our team members are specialists in quartz glass: they select the right glass with you and, of course, keep an eye on the cost-benefit factor for you.

Whether plates for the protection of optics or as inspection windows in high-temperature applications, tubes for the production of special UV lamps or various quartz products for chemical and industrial applications: Benefit from our many years of experience in the procurement of raw materials and processing of quartz glass. Glasses with functional coatings and doped quartz materials are also available from GVB.

We offer you an extensive stock range as well as customized quartz glass products, individual advice and flexible delivery schedules. In doing so, we guarantee you an approved and consistently high quality.

Would you like individual advice? Please contact our Quartz Glass Team:

PROPERTIES OF OUR QUARTZ GLASS PLATES AND TUBES

Chemical Composition (ppm)

	Al	Li	K	Na	Ca	Fe	Ti	Mg	Cu	Cr	Ni	Mn	Co	SiO2
EN09	36,20	1,88	13,70	8,87	374	4,33	1,09	0,59	0,01	0,01	0,00	0,01	0,05	99,9900%
EN08Ti	15,88	1,99	0,63	3,42	0,95	0,40	99,40	0,09	0,01	0,01	0,00	0,02	0,00	
EN08	8,18	0,55	0,47	1,24	0,5	0,21	3,51	0,12	0,01	0,03	0,06	0,01	0,04	99,9950%
EN07	14,00	0,90	0,60	0,90	0,40	0,23	0,60	0,05	0,05	0,03	0,00	0,24	0,61	99,9980%
FN08	32,00	3,11	0,23	3,03	3,02	0,34	1,33	0,17	0,03	1,91	0,00	0,24	0,00	99,9950%
FN07	9,96	0,44	0,11	0,36	0,23	0,09	0,53	0,02	0,00	0,00	0,00	0,01	0,04	99,9980%
FS03	0,18	0,01	0,34	0,06	0,31	0,01	0,01	0,65	0,01	0,00	0,00	0,03	0,061	99,9995%

HYDROXYL (OH) CONTENT

	UB	NB	EB	SB
EN09	<150ppm	<50ppm	<20ppm	<2ppm
EN08	<150ppm	<50ppm	<20ppm	<2ppm
EN07	<150ppm	<50ppm	<5ppm	<1ppm
FN08	<175ppm	<50ppm	--	--
FN07	<175ppm	<50ppm	--	--
FS03	<175ppm	<50ppm	--	--

THERMAL PROPERTIES

			Natural Quartz Glass	Synthetic Quartz Glass
Coefficient of Expansion	25-300°C	cm/cm°C	5.5 x10 $^{-7}$	5.4 x10 $^{-7}$
Thermal Conductivity	20°C	W/m°C	1,4	1,4
Specific Heat	20°C	J/Kg°C	670	670
Softening Point		°C	1670	1700
Annealing Point		°C	1200	1100
Strain Point		°C	1110	1000
Max. Working Temperature		°C	1650	1700
Continious		°C	1100	950
Short Term		°C	1240	1250

MECHANICAL PROPERTIES

Elastic Modulus	Pa	7.2 x 10^{10}
Density	kg/m³	2.2 x 10^{3}
Poissonsche Zahl		0,17
Tensile Strength	Pa	4.8 x 10^{7}
Compressive Strength	Pa	>1.1 x 10^{9}

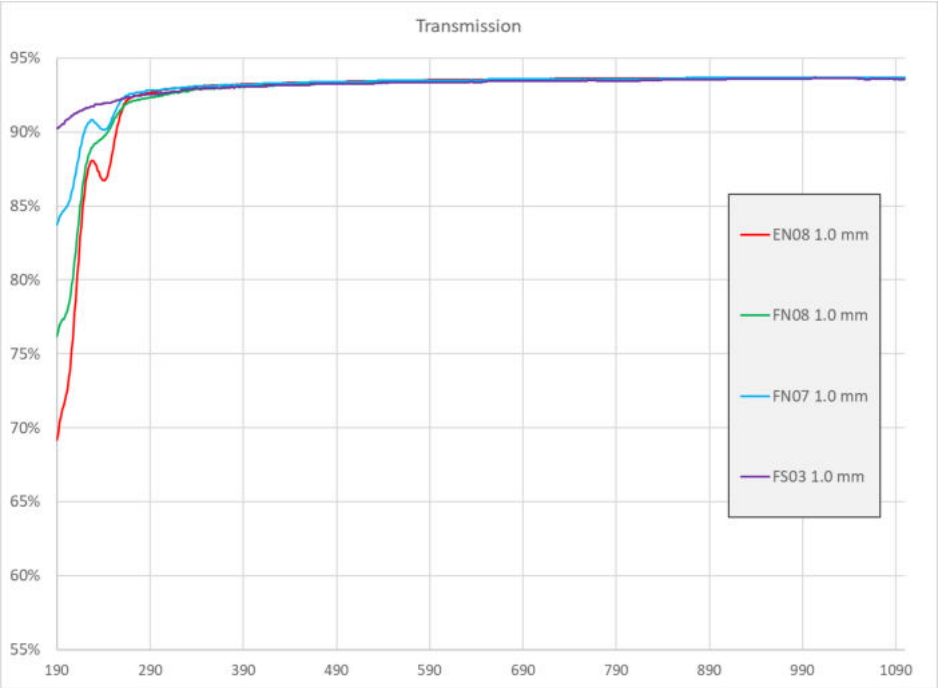
ELECTRICAL PROPERTIES

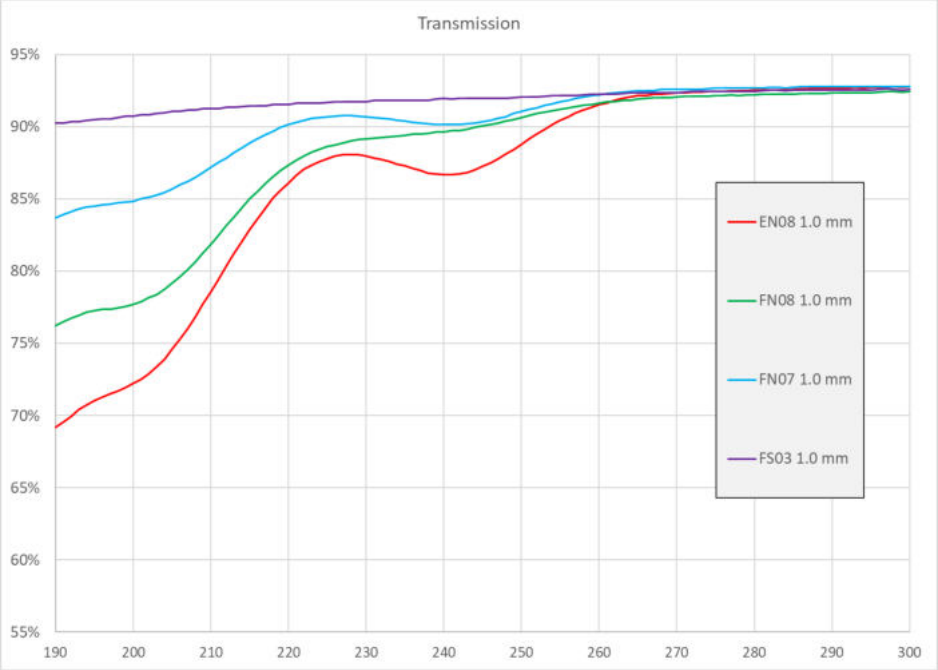
Loss Tangent	20°C and 1MHz		$<2 \times 10^{-4}$
Dielectric Constant	20°C and 1MHz		3.75
Resistivity	350	Ω·cm	7.0×10^{9}
Insulation Strength		V/m	5.0×10^{7}

OPTICAL PROPERTIES

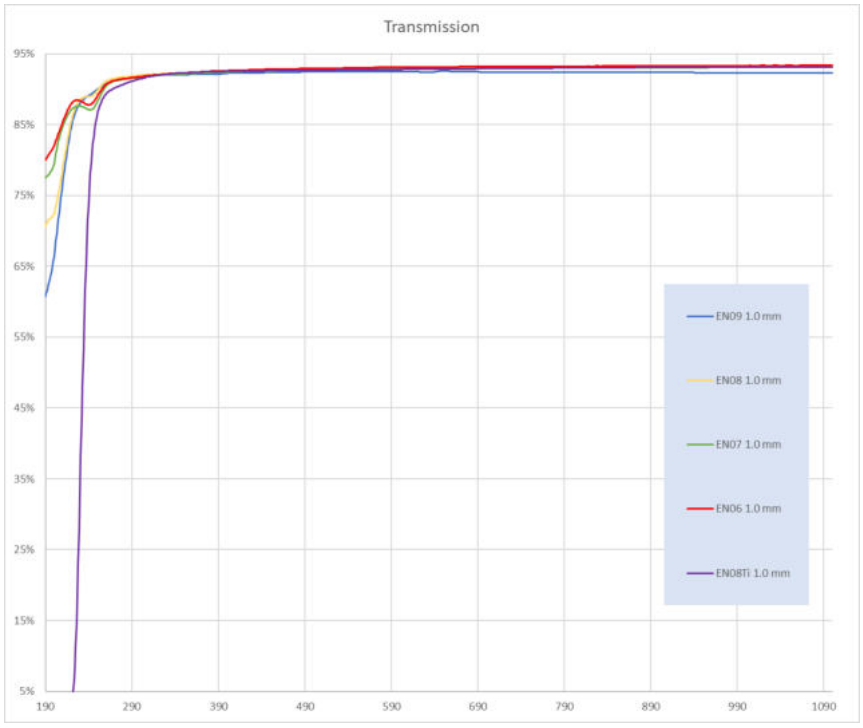
Index of Refraction			1.459

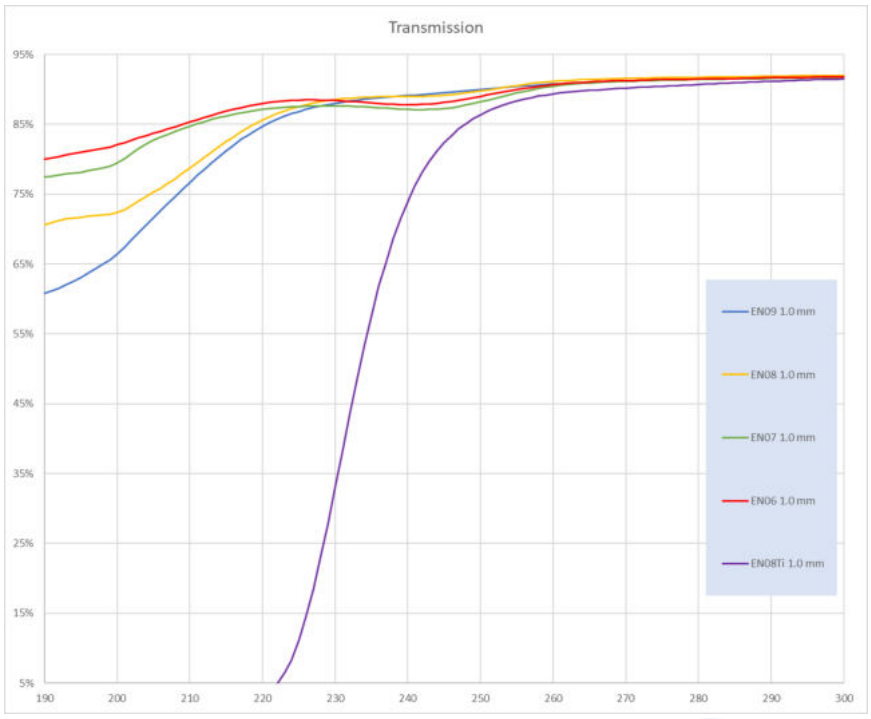
SPECTRAL TRANSMITTANCE PLATES





SPECTRAL TRANSMITTANCE TUBES





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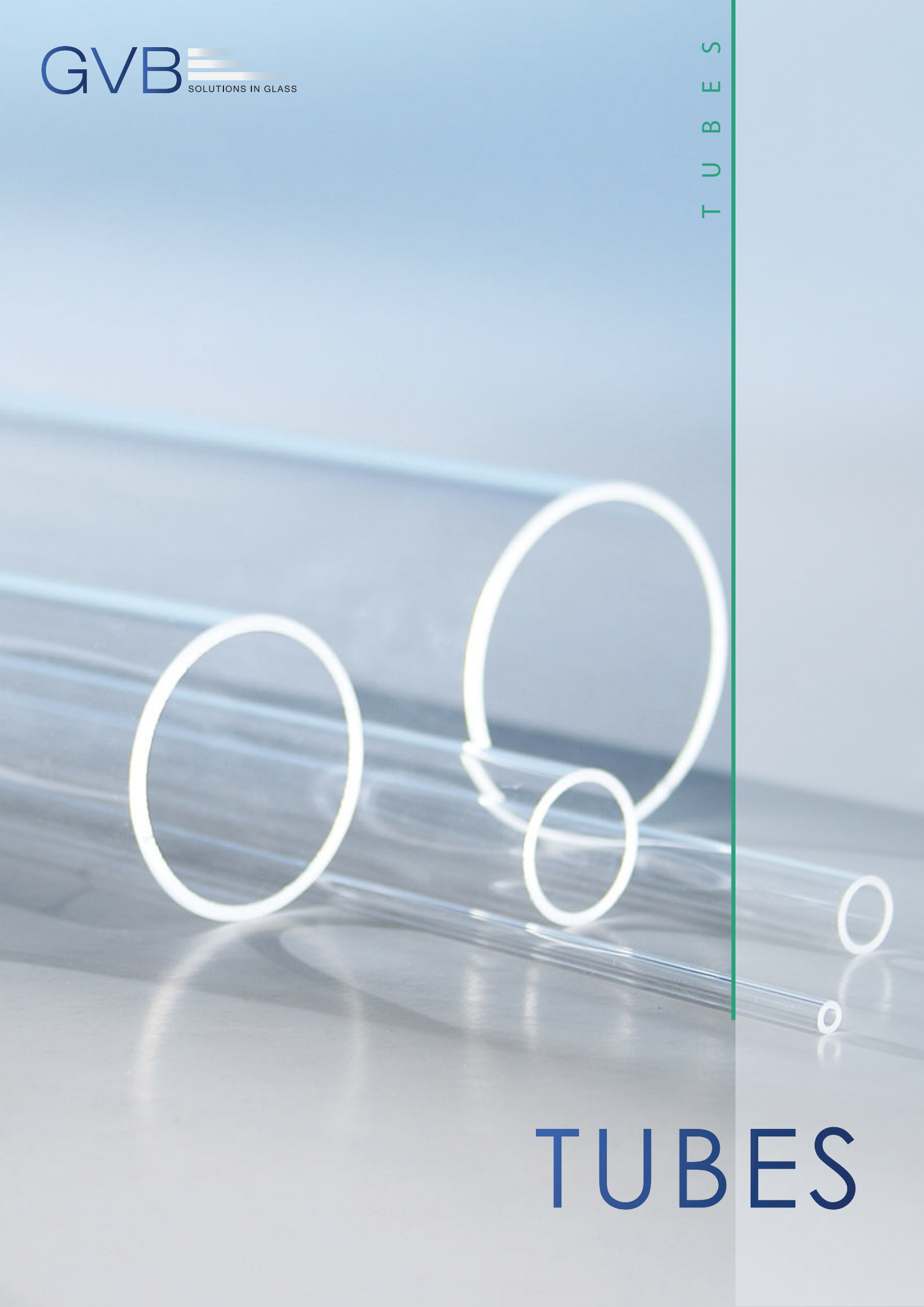
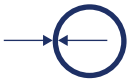
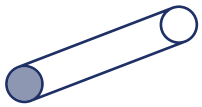
TUBES

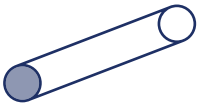


TUBES

STOCK TUBES

Outer Diameter		Wall Thickness	Length	Material Code
				Nr.
mm		mm	mm	
4	± 0,08	1,0±0,08	1500±10	EN09NB
5	± 0,10	1,0±0,08	1500±10	EN09NB
6	± 0,10	1,0±0,08	1500±10	EN07NB
7	± 0,11	1,0±0,08	1500±10	EN07NB
8	± 0,12	1,0±0,08	1500±10	EN07NB
9	± 0,12	1,0±0,08	1500±10	EN09NB
10	± 0,12	1,0±0,08	1500±10	EN07NB
11	± 0,17	1,0±0,08	1500±10	EN09NB
12	± 0,12	1,0±0,08	1500±10	EN07NB
13	± 0,20	1,0±0,08	1500±10	EN09NB
14	± 0,21	1,0±0,08	1500±10	EN09NB
15	± 0,23	1,2±0,10	1500±10	EN09NB
16	± 0,24	1,2±0,10	1500±10	EN09NB
17	± 0,26	1,2±0,10	1500±10	EN09NB
18	± 0,27	1,2±0,10	1500±10	EN09NB
19	± 0,29	1,5±0,12	1500±10	EN09NB
20	± 0,30	1,5±0,12	1500±10	EN07NB
22	± 0,33	1,5±0,12	1500±10	EN09NB
24	± 0,36	1,5±0,12	1500±10	EN07NB
25	± 0,40	1,5±0,12	1500±10	EN07NB
26	± 0,39	1,5±0,12	1500±10	EN09NB
28	± 0,48	1,5±0,12	1500±10	EN07NB

STOCK TUBES

Outer Diameter		Wall Thickness	Length	Material Code
				Nr.
mm		mm	mm	
30	± 0,45	1,5±0,12	1500±10	EN09NB
32	± 0,64	1,0±0,08	1500±10	EN07NB
34	± 0,68	1,0±0,08	1500±10	EN09NB
36	± 0,72	1,0±0,08	1500±10	EN09NB
38	± 0,76	1,0±0,08	1500±10	EN09NB
40	± 0,80	1,0±0,08	1500±10	EN07NB
45	± 1,35	1,0±0,08	1500±10	EN09NB
50	± 1,00	1,0±0,08	1500±10	EN07NB
55	± 0,50	1,0±0,08	1500±10	EN07NB
60	± 0,80	1,0±0,08	1500±10	EN09NB
65	± 0,85	1,0±0,08	1500±10	EN09NB
70	± 1,00	1,2±0,10	1500±10	EN09NB
75	± 1,00	1,2±0,10	1500±10	EN09NB
75	± 1,00	1,2±0,10	1500±10	EN09NB
80	± 1,20	1,2±0,10	1500±10	EN09NB
85	± 0,80	1,5±0,12	1500±10	EN07NB
90	± 1,00	1,5±0,12	1500±10	EN07NB
95	± 1,00	1,5±0,12	1500±10	EN07NB
100	± 0,80	1,5±0,12	1500±10	EN07NB
100	± 1,50	1,5±0,12	1500±10	EN09NB

Further products available on request.

POSSIBLE APPLICATIONS

Material Code	
EN09UB	-Sleeves of ozone free Lamps for 254 nm application.
EN08NB	-As Lamp Tubes of low pressure ozone producing for UV desinfection -Long life lamp tube for IR heating, UV curing, printing etc. -Glass apparatus
EN07EB	-Sleeves of medium pressure UV germicidal Lamps -Lamp Tubes of ozone producing Lamps -Low cost Product for semiconductor Application -Several UV and hig Temperature -Fiber Optics -Furnace Tubes, Vaccum Tubes
EN08TiEB	-Low pressure ozone free UV germicidal Lamp Tubes for 185 nm application.

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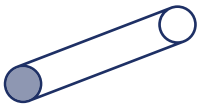
RODS

RODS

STOCK RODS

Diameter		Length	Material Code
			Nr.
mm		mm	
4	± 0,1	1240±10	EN09UB
5	± 0,1	1240±10	EN09UB
6	± 0,1	1240±10	EN09UB
7	± 0,1	1240±10	EN09UB
8	± 0,2	1240±10	EN09UB
9	± 0,1	1240±10	EN09UB
10	± 0,1	1240±10	EN09UB

Further products available on request.

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GROUND JOINTS

GROUND JOINTS

STOCK GROUND JOINTS

NS – Sockets according to DIN 12 250

NS	Order-Nr.
5/13	183630101
7/16	183630102
10/19	183630103
12/21	183630104
14/23	183630105
19/26	183630106
24/29	183630107
29/32	183630108
34/35	183630109
45/40	183630110

NS – Cones according to DIN 12 250

NS	Order-Nr.
5/13	183630001
7/16	183630002
10/19	183630003
12/21	183630004
14/23	183630005
19/26	183630006
24/29	183630007
29/32	183630008
34/35	183630009
45/40	1836300010

KS – Ground Joint(Ball) according to DIN 12 265

KS	Order-Nr.
13	1836300020
19	1836300021
29	1836300022
35	1836300023
40	1836300024

KS – Ground Joint (Cup) according to DIN 12 265

KS	Order-Nr.
13	1836300025
19	1836300026
29	1836300027
35	1836300028
40	1836300029

FURTHER PRODUCTS AVAILABLE ON REQUEST

RINGS

LAMP BULBS

TWIN TUBES

SLEEVES

SPIRALS

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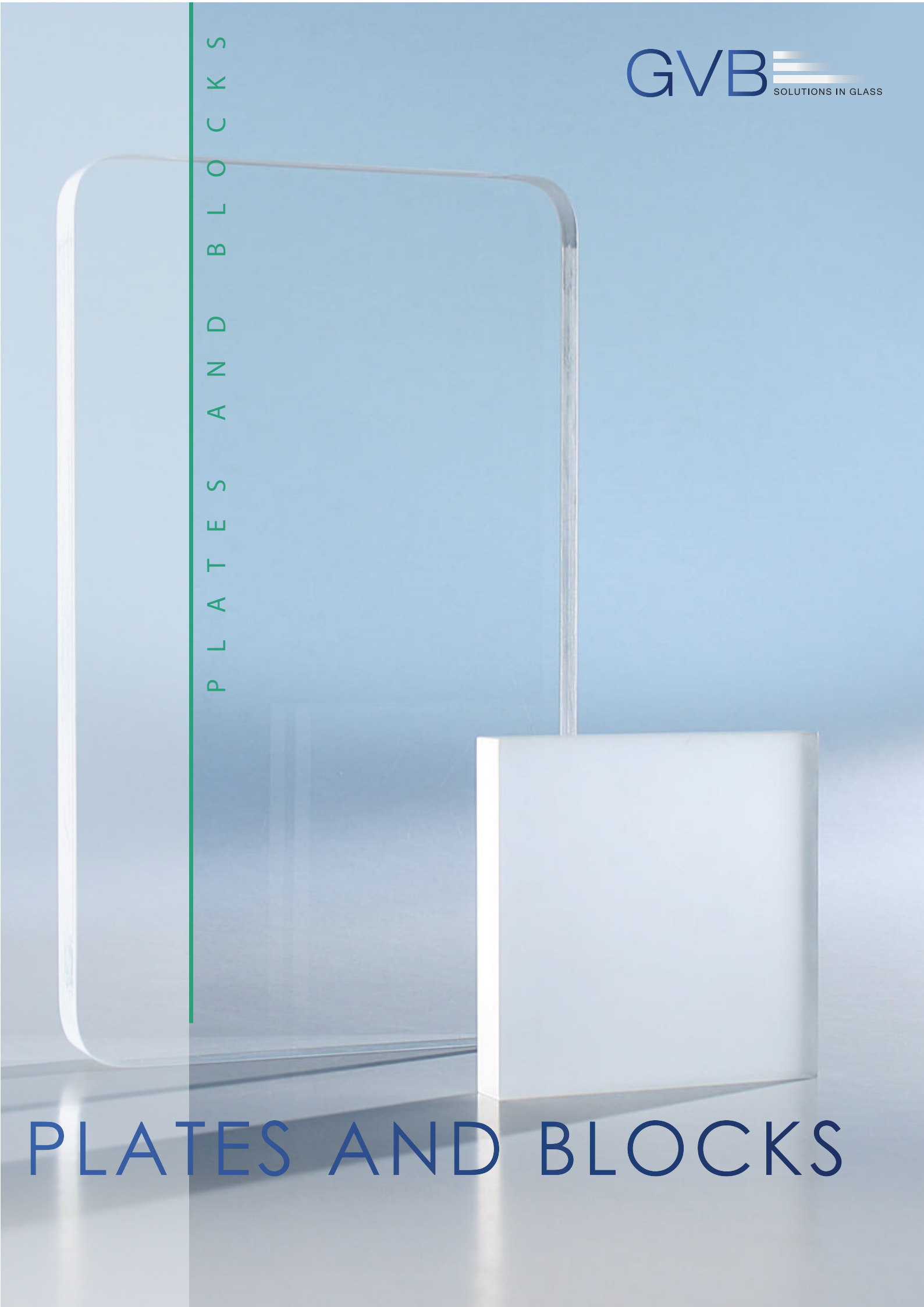
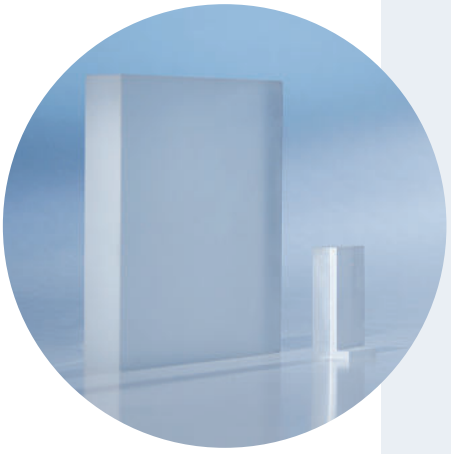
PLATES AND BLOCKS



PLATES AND BLOCKS

POSSIBLE APPLICATIONS

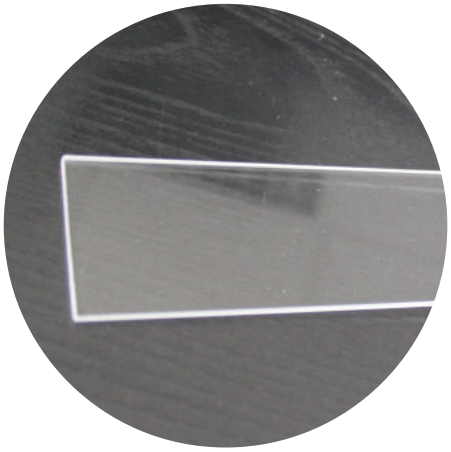
Material Code	Definition	Field of application
EN08	Electric fused Natural Quartz Glass	Protective glass for UV-, infrared- or camera- applications, good transmission incipient from 254nm wavelength.
EN07	Electric fused Natural Quartz Glass	Protective glass for optical applications, filter discs, good transmission incipient from 220nm.
FN08	Flame fused Natural Quartz Glass	Viewing window for high temperature ovens, used in water disinfection applications, good transmission incipient from 254nm wavelength.
FN07	Flame fused Natural Quartz Glass	Filter disc, protective glass for UV- and infrared applications, good transmission incipient from 220nm wavelength.
FS03	Flame fused Synthetic Quartz Glass	Filter disc, very good transmission in the UVC area.



STOCK PLATES

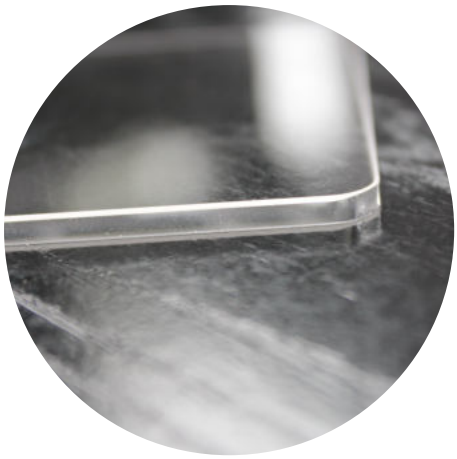
Material code	Dimensions and Tolerances in mm
EN08	100±0,5x100±0,5x1±0,3
EN08	100±0,5x100±0,5x2±0,3
FN08	100±0,5x100±0,5x3±0,3
EN08	150±0,5×150±0,5×1±0,3
EN08	150±0,5×150±0,5×2±0,3
EN08	200±0,5×200±0,5×2±0,3
FN08	200±0,5×200±0,5×3±0,3
FN08	200±0,5×200±0,5×4±0,4
FN08	200±0,5×200±0,5×5±0,5
FN08	200±0,5×200±0,5×6±0,5
FN08	250±1,0x250±1,0x2±0,3
FN08	300±1,0×300±1,0×3±0,3
FN08	350±1,0x350±1,0x3±0,3
FN08	350±1,0x350±0,1x4±0,4
FN08	350±1,0x350±1,0x5±0,5
FN08	500x2,0×500±2,0×2±0,3
FN08/EN08	500±2,0×500±2,0×3±0,3
FN08	500±2,0×500±2,0×4±0,5
FN08	500±2,0×500±2,0×5±0,5
FN08	500±2,0×500±2,0×6±0,5
FN08	500±2,0×500±2,0×7±0,5
FN08	500±2,0×500±2,0×8±0,5
FN08	500±2,0×500±2,0×10±0,5
FN08	600±2,0×600±2,0×10±0,5

Further products available on request

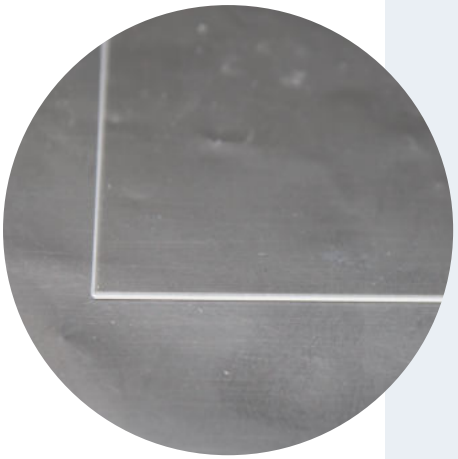


2500mm PLATE

ROUND DISC



ROUNDED POLISHED CORNERS



FILTER DISC 222 nm

OPAQUE QUARTZ GLASS

TREATMENT AND CLEANING OF QUARTZ GLASS

A thorough and appropriate cleaning and treatment of quartz glass products is essential to maintain the properties. The following recommendations should be noticed:

RECOMMENDATIONS FOR CLEANING

- Do not clean parts of quartz glass with alkali detergents.
- Contaminations with fat can be removed with alcohol.
- Acids in 5 % hydrofluoric acids for 2-3 minutes.
- Subsequent cleaning in distilled or deionised water.
- After cleaning, touch the quartz glass only with clean gloves.
- If possible, process quartz glass only after cleaning or pack it carefully.

Quartz glass should always be touched only with gloves. You should also take care that the rooms, tools and machines meet high cleanness demands.

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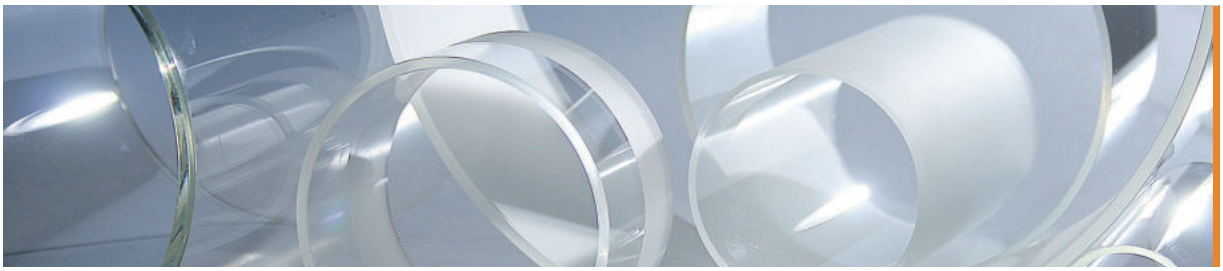
We also offer:

OPTICAL GLASS

PRODUCT FINISHING

BOROSILICATE GLASS



COLOURED GLASS

GVB
SOLUTIONS IN GLASS

Your satisfaction is our future

Your GVB team

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SOLVENCY CERTIFICATE

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