

Clear fused quartz cylinders Ilmasil™ PN and PL for diffusion furnace flanges

High-performance materials for diffusion processes

Electrically plasma fused quartz. High purity. Exceptional thermal stability.
Very low OH-content. Engineered for diffusion furnace flanges.

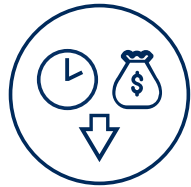
Diffusion refers to a high-temperature process that uses thermal diffusion to drive dopant atoms to migrate within semiconductor materials – typically silicon substrates or more commonly epitaxial layers according to process requirements, forming a specific concentration distribution that alters the electrical properties of the silicon material. SCHOTT's electrically fused quartz materials Ilmasil™ PN and PL are ideal for diffusion processes due to their very low OH-content and low alkali metals.



Electrically fused quartz with
very low OH-content



Extremely low impurity levels reduce
contamination risk



Near-net cylinder shape,
reduce time and cost of processing
into flanges



Excellent performance at diffusion
working high temperatures

Available sizes in Ilmasil™ PN/Ilmasil™ PL

Outer diameter (mm)	Maximum inner diameter (mm)	Minimum inner diameter (mm)
Tolerance: +10/-0	Tolerance: +0/-10	Tolerance: +0/-10
105	95	90
120	105	90
130	117	105
160	145	90
180	150	120
200	170	140
220	190	140
240	210	160
260	230	160
280	245	170
300	265	175
320	280	185
330	290	200
350	310	200
370	330	250
390	340	260
410	360	270
440	390	290
460	420	300
500	440	340
510	440	340
520	460	340
540	480	360
570	510	370

Material shapes and sizes

Heavy-walled cylinders are available in a wide range of sizes with cut, ground or polished surface.

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Chemical properties

Typical trace elements of Ilmasil™ PN

Element	Typical content in ppm	Maximum content in ppm
Al	15	20
Ca	0.8	1.5
Cr	< 0.05	0.05
Cu	< 0.03	0.05
Fe	0.3	1
K	0.7	1.5
Li	0.5	1.5
Mn	0.05	0.1
Na	1	1.5
Ni	< 0.02	0.02
Ti	1.5	2
Zr	1.5	2.7
OH-content*	30	45

Typical trace elements of Ilmasil™ PL

Element	Typical content in ppm	Maximum content in ppm
Al	8	10
Ca	0.7	1.1
Cr	< 0.05	0.05
Cu	< 0.03	0.05
Fe	0.2	0.4
K	0.2	0.3
Li	0.2	0.4
Mn	< 0.01	0.03
Na	0.2	0.4
Ni	< 0.01	0.02
Ti	1.4	2
Zr	1	2
OH-content*	30	45

OH-content

Typical: 30 ppm*

Tolerance: max. 45 ppm*

Stability: after thermal treatment, a decrease of maximum 3 ppm is obtainable by tempering the material at 1000 °C under vacuum for a period of 30 hours.

* OH-content: values are applicable for non-flameworked material only

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