INDUSTRIEARMATUREN

Borosilicate sight glass DIN 7081

Reflective and transparent borosilicate glasses

DIN 7081



USAGE

MAXOS® safety sight glasses are required everywhere where, under pressure, during thermal and chemical stress, the visual inspection of processes in containers must be ensured. High safety is achieved by a special borosilicate glass with good chemical resistance, extraordinary purity, and homogeneity. In conjunction with the typical low thermal expansion of this borosilicate glass, thermal pre-stressing (hardening) leads to particularly high thermal cycling resistance.

APPLICATION PROPERTIES

Through production and quality checks in the process flow, the property values of the glasses and the tight tolerances are guaranteed. With these excellent safety features, MAXOS® safety sight glasses can be used under extreme conditions.

Operating Conditions	Pressure	Temperature
Unprotected reflex and transparent sight glasses at saturated steam or hot water pressure	35 bar / 500 psi	243 °C / 470 °F
Glint protected transparent sight glasses at saturated steam or hot water pressure	103 bar / 1500 psi	320 °C / 608 °F
Reflex sight glasses in operation without steam and without technically significant glass attack	280 bar / 4000 psi	38 °C / 100 °F
For media without technically significant glass attack for transparent sight glasses	345 bar / 5000 psi	38 °C / 100 °F
High-pressure transparent sight glasses in special fittings	414 bar / 6000 psi	38 °C / 100 °F
Pay attention to pressure-temperature assignment!		

Technical Information:	
Coefficient of expansion at 20 °C/300 °C	4.1 x 10–6 K^{-1}
Elastic modulus	67 x 103 N/mm^2
Thermal conductivity at 90 °C	1.2 W/(m·K)
Stress-optical coefficient K	3.2 x 10–6 mm^2/N
Temperature cycling resistance	230 °C

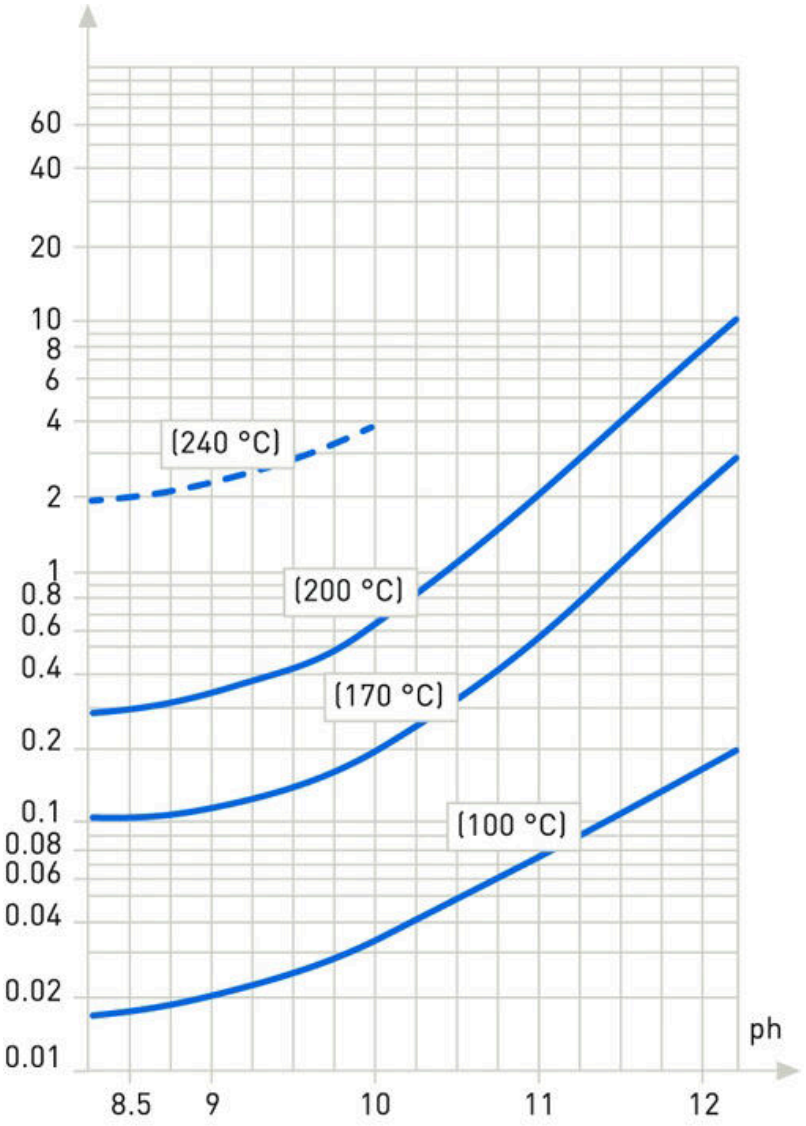
CHEMICAL RESISTANCE

Chemical Resistance	
Water resistance according to DIN ISO 719/720	Hydrolysis class 1
Acid resistance according to DIN 12116	Acid class 1
Alkali resistance according to DIN 52332	Alkali class 2

Tolerances ≤ 30 mm width			Tolerances > 30 mm width
	≤ 250 mm	> 250 mm	All lengths
Length	±0,8 mm	±1 mm	0 / -1,5 mm
Width	±0,8 mm	±0,8 mm	+0,2 / -0,8 mm
Thickness 17 mm	±0,5 mm	+1,5 / -0,5 mm	±0,5 mm

DEDUCTION RATES

The material removal of MAXOS sight glass plates according to DIN 7081 in aqueous phase at various temperatures as a function of pH can be seen in the adjacent diagram.



Transparent glass according to DIN 7081 - 30 mm width				
Length in mm	Width in mm	Thickness in mm	MAXOS® Product code	ACI Article number
115	30	17	2071768	12-7081-115-30-17-00
140	30	17	2071769	12-7081-140-30-17-00
165	30	17	2071770	12-7081-165-30-17-00
190	30	17	2071771	12-7081-190-30-17-00
220	30	17	2071772	12-7081-220-30-17-00
250	30	17	2071773	12-7081-250-30-17-00
280	30	17	2071774	12-7081-280-30-17-00
320	30	17	2071775	12-7081-320-30-17-00
340	30	17	2071776	12-7081-340-30-17-00

Transparent glass according to DIN 7081 - 34 mm width				
Length in mm	Width in mm	Thickness in mm	MAXOS® Product code	ACI Article number
95	34	17	2071817	12-7081-095-34-17-00
115	34	17	2071777	12-7081-115-34-17-00
140	34	17	2071778	12-7081-140-34-17-00
165	34	17	2071779	12-7081-165-34-17-00
190	34	17	2071780	12-7081-190-34-17-00
220	34	17	2071781	12-7081-220-34-17-00
250	34	17	2071782	12-7081-250-34-17-00
280	34	17	2071783	12-7081-280-34-17-00
300	34	17	2071784	12-7081-300-34-17-00
320	34	17	2071785	12-7081-320-34-17-00
340	34	17	2071786	12-7081-340-34-17-00
370	34	17	2071787	12-7081-370-34-17-00
400	34	17	2071788	12-7081-400-34-17-00
420	34	17	2071789	12-7081-420-34-17-00
430	34	17	2071790	12-7081-430-34-17-00
460	34	17	2071791	12-7081-460-34-17-00
480	34	17	2071792	12-7081-480-34-17-00
500	34	17	2071793	12-7081-500-34-17-00

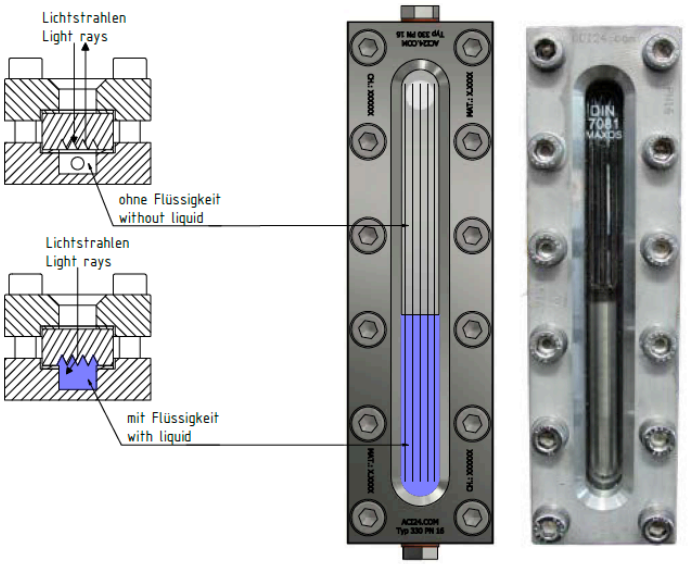
Reflective glass according to DIN 7081 - 30 mm width				
Length in mm	Width in mm	Thickness in mm	MAXOS® Product code	ACI Article number
115	30	17	2071675	12-7081-115-30-17-01
140	30	17	2071676	12-7081-140-30-17-01
165	30	17	2071677	12-7081-165-30-17-01
190	30	17	2071678	12-7081-190-30-17-01
220	30	17	2071679	12-7081-220-30-17-01
250	30	17	2071680	12-7081-250-30-17-01
280	30	17	2071681	12-7081-280-30-17-01
320	30	17	2071682	12-7081-320-30-17-01
340	30	17	2071683	12-7081-340-30-17-01

Reflective glass according to DIN 7081 - 34 mm width				
Length in mm	Width in mm	Thickness in mm	MAXOS® Product code	ACI Article number
95	34	17	2071716	12-7081-095-34-17-01
115	34	17	2071684	12-7081-115-34-17-01
140	34	17	2071685	12-7081-140-34-17-01
165	34	17	2071686	12-7081-165-34-17-01
190	34	17	2071687	12-7081-190-34-17-01
220	34	17	2071688	12-7081-220-34-17-01
250	34	17	2071689	12-7081-250-34-17-01
280	34	17	2071690	12-7081-280-34-17-01
300	34	17	2071713	12-7081-300-34-17-01
320	34	17	2071691	12-7081-320-34-17-01
340	34	17	2071692	12-7081-340-34-17-01
370	34	17	2071693	12-7081-370-34-17-01
400	34	17	2071694	12-7081-400-34-17-01
430	34	17	2071695	12-7081-430-34-17-01
460	34	17	2071696	12-7081-460-34-17-01
500	34	17	2071697	12-7081-500-34-17-01

REFLECTIVE AND TRANSPARENT GLASS

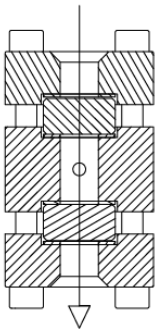
Reflective glass:

For dark media, dark or unlit containers, and a closed level gauge, it is advisable to use a reflective sight glass. (see adjacent image) The light refraction in the embedded prisms may provide a better visibility of the fill level. The liquid area is usually brighter than the area without liquid. If the color of the medium needs to be identifiable, transparent glasses should be used, as reflective glasses make a color change of the medium difficult to detect. However, reflective glass is not suitable for saturated steam or aggressive media, as these cannot be protected with mica protective glasses without losing their function.



Transparent glass

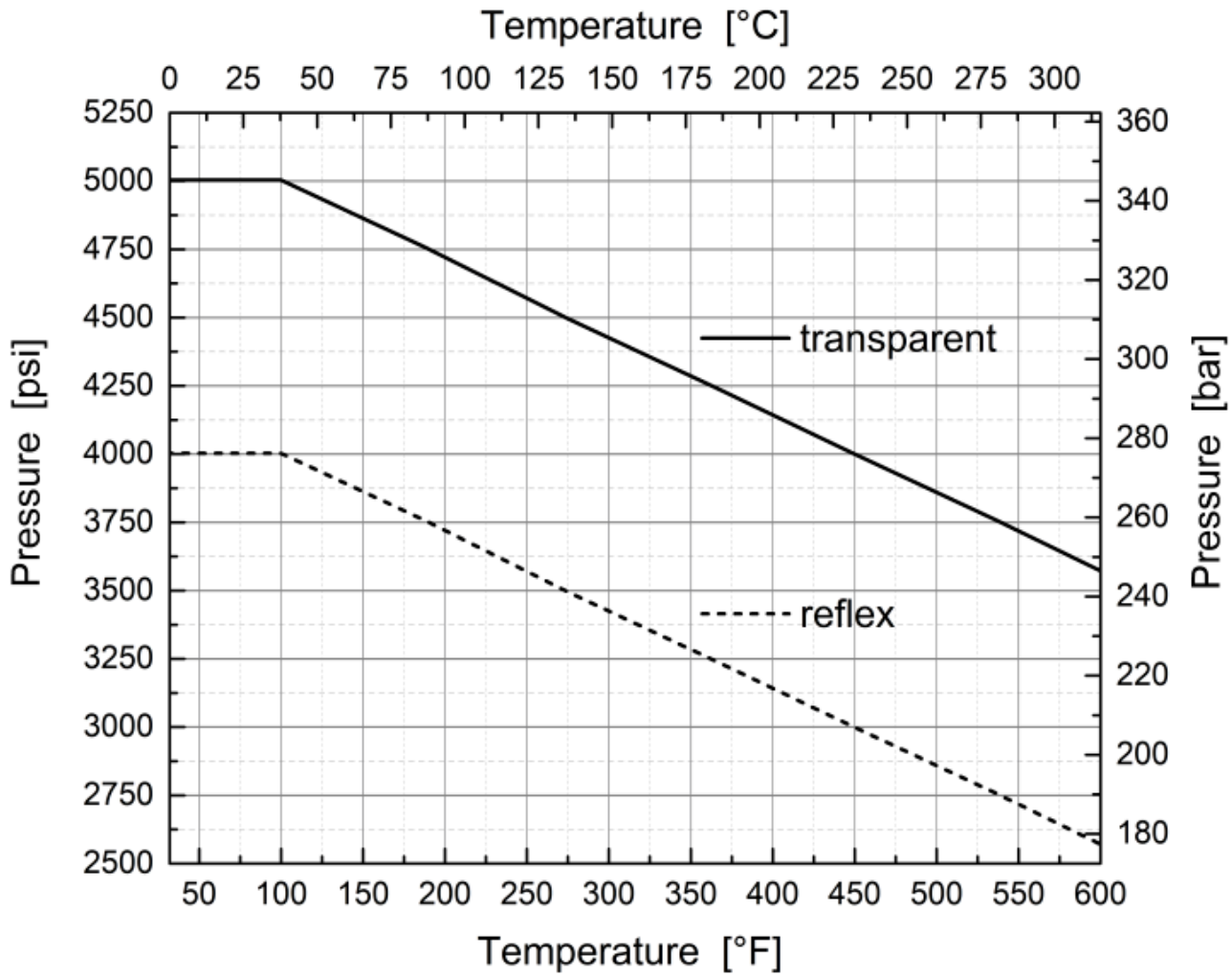
Transparent glasses are often used in illuminated containers and transparent indicators (adjacent image). They are also used when the medium is very bright or when the color of the medium needs to be recognizable. In transparent indicators, light can shine through the indicator, making the fill level and medium color very visible. (adjacent images) For saturated steam or aggressive media, the transparent glasses should be protected with a mica protective glass. In this case, it is generally advisable to have an additional light mounted on the back of the transparent indicator, as the mica protection slightly darkens the transparent glasses.





PRESSURE-TEMPERATURE ASSIGNMENT

The following pressure-temperature diagram provides the operating conditions for MAXOS longitudinal sight glass plates in accordance with DIN 7081. The diagram may vary depending on the medium and pH value. We are happy to assist you in selecting suitable glass types.



ACI Industriearmaturen GmbH

info@aci24.com
www.aci24.com
Königskamp 19 · 52428 Jülich · Germany
+49 (0) 2461 91634 00
+49 (0) 2461 91634 44