

# List of standard materials (other materials on request)

## Body, adapters, stem and ball materials

Material	Pressure reduction in % of permissible operating temperature TB in °C													
	-60°	-50°	-40°	-30°	-20°	-10°	0°	+20°	+80°	+100°	+120°	+130°	+150°	+200°
Free-Cutting Steel (11SMn30, 1.0715), <b>not suitable for gas applications!</b>	Red			0%				0%			Red			
Low-Alloy Steel (S355J2+N, 1.0570)	25%			0%				0%			Red			
Stainless Steel 1.4571 (AISI 316Ti), 1.4404 (AISI 316L), 1.4401 (AISI 316)	0%						0%			11%				
Duplex Steel (1.4462)	Red		0%						20%					

## Ball seat material

Material	Pressure reduction in % of permissible operating temperature TB in °C													
	-60°	-50°	-40°	-30°	-20°	-10°	0°	+20°	+80°	+100°	+120°	+130°	+150°	+200°
POM (Delrin, Polyacetal)	Red		0%						Red					
Polyetheretherketone PEEK natural (unfilled)	Please see separate diagram on page 255													
Polyetheretherketone PEEK (graphite-filled, ATEX-approved)	Red			Please see separate diagram on page 255										
Cast Iron GG25	Red		0%						0%					
PTFE (Teflon, Fluon)	Please see separate diagram on page 255													

## Stem and adapter sealing materials

Material	Pressure reduction in % of permissible operating temperature TB in °C													
	-60°	-50°	-40°	-30°	-20°	-10°	0°	+20°	+80°	+100°	+120°	+130°	+150°	+200°
Acrylonitrile-butadiene-rubber (NBR, Buna N)	Red			0%						Red				
Low-temp NBR Compound	0%						Red							
Fluor Rubber (FPM, Viton)	Red				0%									
Low-temp Viton Compound	Red			0%										
Ethylene-Propylene-Diene Momomer Rubber (EPDM)	Red	0%						Red						
PTFE (Teflon, Fluon)	Please see separate diagram on page 255													

 permitted operating temperature       temperature not permitted

## Calculation example

### BKH-DN13-G1/2"-44g8

PN=500bar  
Body: 1.4571  
Ball seat: PEEK (graphite-filled)  
O-ring: FPM

### Application temperature: max. +180°C

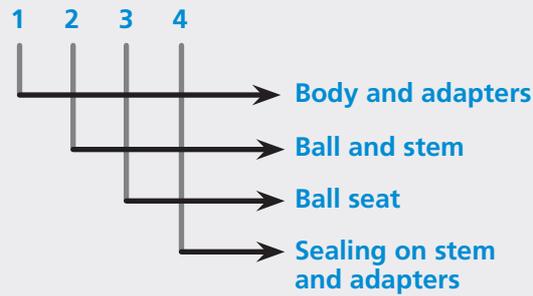
Pressure reduction body: 11% (500 bar - 11% = 445 bar)  
Pressure ball seat: 95 bar  
Pressure reduction O-ring: 0%



### Result:

P<sub>max</sub> (180°C) = 95 bar

# General material combinations of MHA products



## Digit 1 - Body and adapters

1	Body and adapters	Free-Cutting Steel
2	Body and adapters	Low-Alloy steel
4	Body and adapters	Stainless Steel
6	Body and adapters	Aluminum
8	Body	Low-Alloy Steel
	Adapters	Free-Cutting Steel
H	Body and adapters	Hastelloy
N	Body and adapters	Monell
T	Body and adapters	Titanium

## Digit 2 - Ball and stem

1	Ball and stem	Free-Cutting Steel
2	Ball	Stainless Steel
	Stem	Free-Cutting Steel
4	Ball and stem	Stainless Steel
9	Ball	Brass
	Stem	Free-Cutting Steel
H	Ball and stem	Hastelloy
N	Ball and stem	Monell
T	Ball and stem	Titan

## Digit 3 - Ball seat

2	POM
4	PTFE
7	PTFE-(fiber-glass reinforced)-encased
8	POM front side sealing
9	PTFE front side sealing
0	PVDF
a	PEEK with ATEX-certification
b	POM-encased
d	Pure graphite
f	Steel, Cast Iron
g	PEEK
m	PEEK with protection ring against erosion
E	PTFE-fiber-glass reinforced with O-ring arranged behind
F	Stainless Steel
H	POM with protection ring against erosion

## Digit 4 - Sealing on stem and adapters

0	Sealing on stem	Isocyanate sealing
	Sealing on adapters	FPM
4	Sealing on stem	PTFE sealing
	Sealing on adapters	FPM
8	Sealing on stem and adapters	FPM
d	Sealing on stem and adapters	Pure graphite
k	Sealing on stem and adapters	FFKM
m	Sealing on stem and adapters	FEPM
A	Sealing on stem and adapters	NBR
B	Sealing on stem and adapters	EPDM
E	Sealing on stem and adapters	PU
S	Sealing on stem and adapters	VMQ
N	Sealing on stem and adapters	Cr

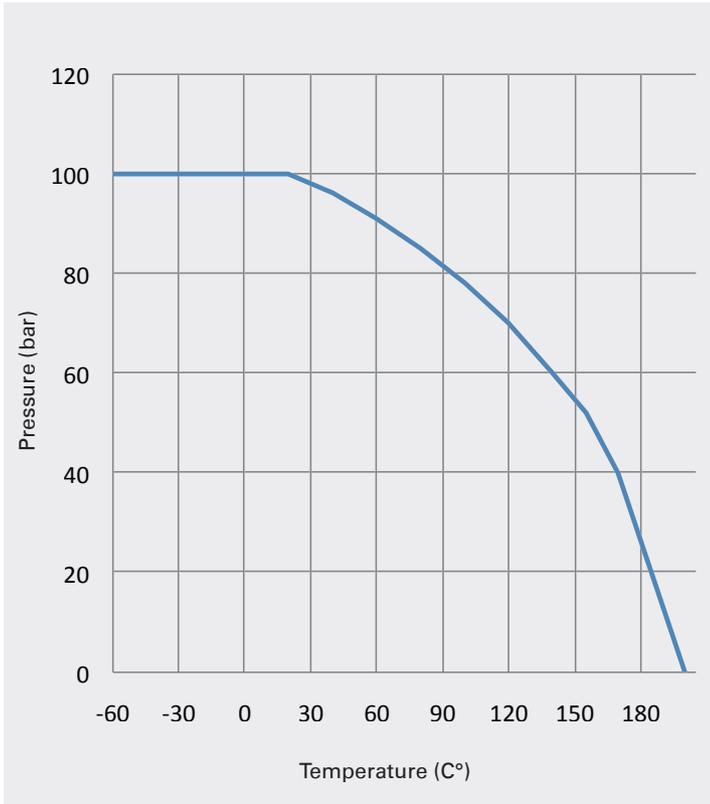


**Other materials on request.**

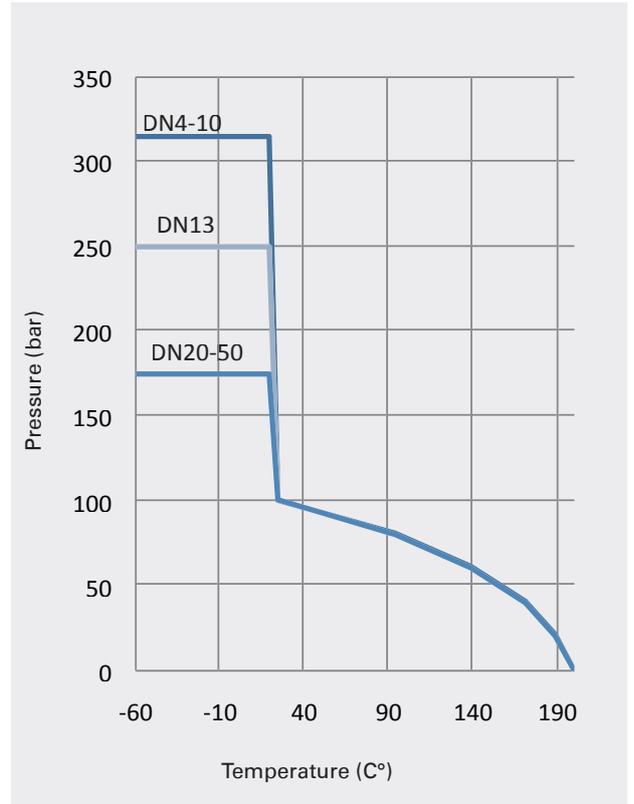
# Pressure / Temperature curves

## Admissible working pressure of MHA ball valves

Pure PTFE ball seat



Teflon-fiber-glass-reinforced ball seat



PEEK ball seat

