



## BÖHLER E185 AMPO

# GAS ATOMIZED POWDER FOR ADDITIVE MANUFACTURING

The newly developed, patent pending, BÖHLER E185 AMPO is an AM powder, fulfilling the highest demands from various industries, ranging from motorsport to engineering components and any kind of prototype applications. This low alloyed steel with easy printability and the possibility for surface treatments (e.g. case hardening) was developed especially for the demands of the 3D printing industry.

BÖHLER E185 AMPO Patent pending	Chemical composition [wt. %]							Co-free
	Element	C	Si	Mn	Cr	Ni	Mo	
Mass - %	0.19	0.22	0.3	0.95	1.25	0.2	0.15	

### PARTICLE SIZE DISTRIBUTION 15 - 45 µm

Flowability*	Apparent density*	Sphericity*
3s / 50g (Carney flow)	3.77 g/cm <sup>3</sup>	0.92

\* Measurement of flowability and apparent density are based on ASTM B964 and DIN EN ISO 3923-1 and relates to our typical measured values

### ACHIEVABLE MECHANICAL PROPERTIES AS PRINTED

Tensile strength	Yield strength	Elongation	Hardness	Impact toughness (Charpy V)
1150 ± 50 MPa	1050 ± 50 MPa	15 ± 1 %	37 - 39 HRc	140 ± 10 J

### HEAT TREATED

Tensile strength	Yield strength	Elongation	Hardness	Impact toughness (Charpy V)
1370 ± 50 MPa	1150 ± 50 MPa	13 ± 1 %	43 - 45 HRc	85 ± 10 J

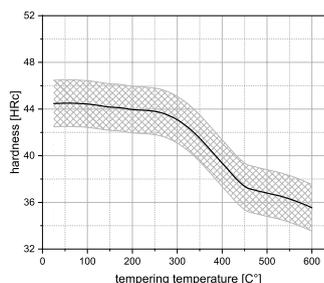
### HEAT TREATMENT

**Hardening** 850°C (30 min / water quenched)

**Tempering** 200°C (2 h / air cooling)

### CASE HARDENED

Surface hardness	Case hardening depth
750 ± 20 HV30	0.8 - 0.9 mm



**Heat treatment**  
Hardening  
temperature 850°C /  
soaking time 30 min /  
water quenched;  
single tempering at  
mentioned  
temperatures for 2h /  
air cooling

After each heat  
treatment step the  
material has to cool  
down until room  
temperature

