

thyssenkrupp Materials
Trading

Metal- powder

Product Program



thyssenkrupp



How to use this catalogue

You can access the required product under the name of the main alloy element, e.g. **ferrochromium** under **Chrome**, **boron carbide** under **boron** etc. In the table of contents, click on the requested product and the product specification is displayed. To go back to the table of contents, click on the back key at the end of the specification.

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Product Catalogue

thyssenkrupp Raw Materials offers an almost complete variety of metals and their alloys in powder shape:

Crushed Metal Powders

Production of welding commodities and surface cladding materials
⇒ specifications to be found in this catalogue

Water Atomised Powders

irregular, filter materials
⇒ Customer specific types, please contact us

Gas Atomised Powders

spherical shape, for use in powder metallurgy, MIM powders
⇒ customer specific types, please contact us

⇒ Super Fine Powders
spherical shape, for use in powder metallurgy, magnetic materials, MIM powders
⇒ Customer specific types, please contact us

Spray Materials

thermal spray powders
⇒ customer specific types, please contact us

Powder for 3D printing

Additive manufacturing processes, customer specific powder metals
⇒ customer specific types, please contact us

Brazing Metal Powders

high temperature brazing materials
⇒ customer specific types, please contact us

CONTENTS

Materials	Page
Aluminium	
Aluminium Metal Powder	6
Ferro Aluminium Metal Powder	6
Aluminium Magnesium Powder	7
Boron	
Boron Carbide Powder	8
Ferro Boron Powder	8
Chromium	
Chromium Metal Powder	9
Chromium Boride Powder	9
Chromium Carbide C1 C2 C3 Powder	10
L.C. Ferro Chromium Powder	10
L.C. Ferro Chromium containing N	11
Ferro Chromium 4 – 6 % C	11
H.C. Ferro Chromium 6-8 % C	12
H.C. Ferro Chromium 8 – 9 % C	12
E.H.C. Ferro Chromium 9 - 10 % C	13
Ferro Silicon Chromium Powder	13
Cobalt	
Cobalt Metal Powder	14
Copper	
Copper Metal Powder	15
Magnesium	
Magnesium Metal Powder	16
Manganese	
Electrolytic Manganese Powder	17
H.C. Ferro Manganese Powder	17
M.C. Ferro Manganese Powder	18
Molybdenum	
Molybdenum Metal Powder	19
Molybdenum Carbide Powder	19
Ferro Molybdenum Powder	20

Nickel		
	Carbonyl Nickel Metal Powder	21
	Nickel Metal Powder	21
Niobium		
	Niobium Carbide Powder	22
	Ferro Niobium Powder	22
Silicon		
	Silicon Metal Powder	23
	Silicon Carbide Powder	23
	Ferro Silicon Manganese L.C. and M.C. Powder	24
	Ferro Silicon 45 Powder	24
Tantalum		
	Tantalum Carbide Powder	25
Titanium		
	Titanium Metal Powder	26
	Titanium Carbide Powder	26
	Ferro Titanium 30 Powder	27
	Ferro Titanium 40 Powder	27
Tungsten		
	Tungsten Metal Powder	28
	Fused Tungsten Carbide Powder	28
	Ferro Tungsten Metal Powder	29
Vanadium		
	Vanadium Carbide Powder	30
	Ferro Vanadium Powder	30
Zircon		
	Zircon Carbide Powder	31
	Ferro Silicon Zircon Powder	31

Aluminium

Aluminium Metal Powder

Chemical Composition	Al metallic	min. 98.5 %
	Various grades of purity available on request	
Particle Size	< 0.400; < 0.300; < 0,200 mm	< 40; < 50; <70 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums on pallets	
	Other packing on request	

[back](#)

Ferro Aluminium Metal Powder

Chemical Composition	Al	min. 50 %
	Fe	min. 48 %
	C	max. 0.10 %
	Si	max. 0.20 %
	Mn	max. 0.40 %
	P	max. 0.040 %
	S	max. 0.040 %
	others	max. 0.50 %
Particle size	< 0.075; < 0.250 mm	< 200; < 60 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums on pallets	
	Other packing on request	

[back](#)

Aluminium Magnesium Powder

Chemical Composition	Al	48 - 52 %
	Mg	48 - 52 %
	P	max. 0.030 %
	S	max. 0.030 %
Particle Size	< 0.100; < 0.250; <0.315 mm	< 140; < 60; < 50 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums on pallets	

[back](#)

Boron

Boron Carbide Powder

Chemical Composition	B	min. 78 %
	C	min. 19.5 %
	Si	max. 0.20 %
	Fe	max. 0.20 %
	S	max. 0.030 %
	P	max. 0.030 %
	Al	max. 0.10 %
	O	max. 0.40 %
	others total	max. 0.50 %
Particle Size	< 0.250; < 0.160; < 0.045 mm < 60; < 90; < 325 mesh (ASTM)	
	Additional particle size distributions on request	
Packing	Small steel drums à 50 kg, big bags on pallets	

[back](#)

Ferro Boron Powder

Chemical Composition	B	18 – 20 %
	C	max. 0.5 %
	Si	max. 1.5 %
	S	max. 0.01 %
	P	max. 0.04 %
	Al	max. 1.5 %
	Fe	bal.
Particle Size	< 0,400 mm; < 0,250 mm <40; < 60 mesh (ASTM)	
	Additional particle size distributions on request	
Packing	Steel drums, big bags on pallets	

[back](#)

Chromium

Chromium Metal Powder

Chemical Composition	Cr	min. 99.0 %
	C	max. 0.05 %
	Al	max. 0.50 %
	Fe	max. 0.50 %
	Si	max. 0.20 %
	P	max. 0.015 %
	S	max. 0.03 %
Particle Size	< 0.250 mm	< 60 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums à 500 kg, big bags on pallets	
	Other packing on request	

[back](#)

Chromium Boride Powder

Chemical Composition	C	4 - 7 %
	B	17 - 20 %
	others	max. 2.0 %
Particle Size	< 0.315 mm	< 50 mesh (ASTM)
Packing	Steel drums à 50 kg on pallets	

[back](#)

Chromium Carbide C1 C2 C3 Powder

Chemical Composition	C1	C2	C3
Cr	min. 86.0 %	min. 86.0 %	min 78.0 %
C	9.0 - 12.0 %	12.0 - 14.0 %	18.0 - 22.0 %
Si	max. 0.25 %	max. 0.25 %	max. 0.25 %
P	max. 0.01 %	max. 0.04 %	max. 0.04 %
S	max. 0.04 %	max. 0.04 %	max. 0.04 %
Al	max. 0.20 %	max. 0.20 %	max. 0.20 %
Fe	max. 0.5 %	max. 1.0 %	max. 0.5 %
Particle Size	<0.315; < 0.250 mm		< 50 ; < 60 mesh (ASTM)
	Additional particle size distributions on request		
Packing	Steel drums à 200 or 250 kg, big bags on pallets		

[back](#)

L.C. Ferro Chromium Powder

Chemical Composition	Cr	70 – 75 %
	C	< 0.03 % ; < 0.05 % ; < 0.10 %
	Si	max. 1.5 %
	P	max. 0.03 %
	S	max. 0.03 %
	Fe	bal.
Particle Size	< 0.400; < 0.250 mm	< 40; < 60 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums, big bags on pallets	
	Other packing on request	

[back](#)

L.C. Ferro Chromium containing N

Chemical Composition	Cr	61 - 66 %
	N	8 - 10 %
	Si	max. 1.5 %
	C	max. 0.1 %
	P	max. 0.04 %
	S	max. 0.02 %
	Fe	bal.
Particle Size	< 0.250; < 0.400 mm	< 60; < 40 mesh (ASTM)
Packing	Steel drums on pallets	

[back](#)

Ferro Chromium 4 – 6 % C

Chemical Composition	Cr	min. 67 %
	C	4 - 6 %
	Si	max. 1.0 %
	P	max. 0.04 %
	S	max. 0.05 %
	Fe	bal.
Particle Size	< 0.400; < 0.315; <0.250 mm	< 40; < 50; < 60 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums, big bags on pallets	
	Other packing on request	

[back](#)

H.C. Ferro Chromium 6-8 % C

Chemical Composition	Cr	65 - 70 %
	C	6 - 8 %
	Si	max. 1.5 %
	P	max. 0.03 %
	S	max. 0.05 %
	Fe	bal.
Particle Size	< 0.315; < 0.250 mm	< 50; < 60 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums, big bags on pallets	

[back](#)

H.C. Ferro Chromium 8 – 9 % C

Chemical Composition	Cr	68 - 72 %
	C	8 – 8.9 %
	Si	max. 1.0 %
	P	max. 0.03 %
	S	max. 0.03 %
	Fe	bal.
Particle Size	< 0.315; < 0.250 mm	< 50; < 60 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums, big bags on pallets	
	Other packing on request	

[back](#)

E.H.C. Ferro Chromium 9 - 10 % C

Chemical Composition	Cr	min. 67 %
	C	9 - 10 %
	Si	max. 1.0 %
	P	max. 0.03 %
	S	max. 0.03 %
	Fe	bal.
Particle Size	< 0.400; < 0.315; < 0.250 mm	< 40; < 50; < 60 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums, big bags on pallets	
	Other packing on request	

[back](#)

Ferro Silicon Chromium Powder

Chemical Composition	Cr	31 - 34 %
	Si	45 - 49 %
	C	max. 0.1 %
	P	max. 0.03 %
	S	max. 0.03 %
	Fe	bal.
Particle Size	< 0.400 mm	< 40 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums, big bags on pallets	
	Other packing on request	

[back](#)

Cobalt

Cobalt Metal Powder

Chemical Composition	Co	min. 99.2 %
	S	max. 0.02 %
	Ni+Fe+Si	max. 0.8 %
	C	max. 0.04 %
Particle Size	< 0.200 mm	< 75 mesh (ASTM)
	Additional particle size distributions on request	
Particle Shape	Irregular / water atomized	
Packing	Steel drums	
	Other packing on request	

[back](#)

Copper

Copper Metal Powder

Chemical Composition	Cu	min. 99 %
	Various qualities available (purity, particle shape)	
Particle Size	< 0.250 mm	< 60 mesh
	Additional particle size distributions on request	
Packing	Steel drums, big bags on pallets	
	Other packing on request	

[back](#)

Magnesium

Magnesium Metal Powder

Chemical Composition	Mg	min. 98 %
	S	max. 0.030 %
	P	max. 0.030 %
	C	max. 0.1 %
	Optional: Passivation by e.g. spindle oil	
Particle Size	< 0.315; < 0.180 mm	< 50; < 80 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums on pallets	

[back](#)

Manganese

Electrolytic Manganese Powder

Chemical Composition

Mn	min. 99.0 %
S	max. 0.030 %
C	max. 0.025 %
P	max. 0.01 %

Particle Size < 0.400; < 0.250 mm < 40; < 60 mesh (ASTM)

Additional particle size distributions on request

Packing Steel drums, big bags on pallets

Other packing on request

[back](#)

H.C. Ferro Manganese Powder

Chemical Composition	Mn	75 - 80 %
	C	6 - 8 %
	Si	max. 1.5 %
	S	max. 0.15 %
	P	max. 0.25 %
	Fe	bal.

Particle Size < 0.800; < 0.250 mm < 20; < 60 mesh

Additional particle size distributions on request

Packing Steel drums, big bags on pallets

Other packing on request

[back](#)

M.C. Ferro Manganese Powder

Chemical Composition	Mn	78 - 81 %
	C	max. 1.5 %
	Si	max. 1.50 %
	S	max. 0.03 %
	P	max. 0.20 %
	Fe	bal.
Particle Size	< 0.400; < 0.250 mm	< 40; < 60 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums, big bags on pallets	
	Other packing on request	

[back](#)

Molybdenum

Molybdenum Metal Powder

Chemical Composition	Mo	min. 99.0 %
	C	max. 0.02 %
	P	max. 0.01 %
	S	max. 0.02 %
	Fe	max. 0.03 %
	O	max. 0.25 %
Particle Size	< 0.250 mm	< 60 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums on pallets	
	Other packing on request	

[back](#)

Molybdenum Carbide Powder

Chemical Composition	Mo ₂ C	min. 98.5 %
	C _{total}	min. 5.85 %
	C _{free}	max. 0.20 %
	O	max. 0.30 %
	Fe	max. 0.40 %
	Ca	max. 0.02 %
	Al	max. 0.01 %
	N	max. 0.10 %
	Si	max. 0.05 %
	Na	max. 0.02 %
Particle Size	< 0.180 mm	< 80 mesh (ASTM)
	Finer grades on request	
Packing	Steel drums à 50 kg on pallets	
	Other packing on request	

[back](#)

Ferro Molybdenum Powder

Chemical Composition	Mo	min. 68 %
	C	max. 0.10 %
	Si	max. 1.5 %
	P	max. 0.06 %
	S	max. 0.10 %
	Cu	max. 0.5 %
	Fe	bal.
Particle Size	< 0.400; < 0.250 mm	< 40; < 60 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums on pallets	

[back](#)

Nickel

Carbonyl Nickel Metal Powder

Chemical Composition	Ni	min 99,9 %
	Fe	max. 0,003 %
	S	max. 0,0003 %
	C	max. 0,007 %
	Cu	max. 0,0001 %
Particle Size	< 6 micron (FSSS)	
Packing	Steel drums on pallets	
	Other packing on request	

[back](#)

Nickel Metal Powder

Chemical Composition	Ni	min. 99.8 %
	Co	max. 0.15 %
	Cu	max. 0.01 %
	C	max. 0.03 %
	S	max. 0.03 %
	Fe	max. 0.02 %
Particle Size	< 0.300 mm	< 50 mesh (ASTM)
	a) focus on coarse range within the limits b) focus on fine range within the limits	
Packing	Steel drums on pallets	

[back](#)

Niobium

Niobium Carbide Powder

Chemical Composition	NiC	min. 99.5 %
	C _{total}	min. 11.1 %
	C _{free}	max. 0.20 %
	O	max. 0.30 %
	Fe	max. 0.40 %
	Ca	max. 0.03 %
	Al	max. 0.01 %
	N	max. 0.02 %
	Si	max. 0.02 %
	Na	max. 0.02 %
Particle Size	< 0.180 mm	< 80 mesh (ASTM)
	Finer grades on request	
Packing	Steel drums à 50 kg on pallets	
	Other packing on request	

[back](#)

Ferro Niobium Powder

Chemical Composition	Nb	65 - 68 %
	Ta	max. 1.0 %
	Al	max. 1.5 %
	Si	max. 3.0 %
	C	max. 0.2 %
	P	max. 0.20 %
	S	max. 0.10 %
	Fe	bal.
Particle Size	< 0.315; < 0.250 mm	< 50; < 60 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums on pallets	
	Other packing on request	

[back](#)

Silicon

Silicon Metal Powder

Chemical Composition	Si	approx. 98 %
	C	approx. 0.1 %
	Al	max. 1.0 %
	Fe	max. 1.0 %
Particle Size	< 0.075 mm	< 200 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Paper bags on pallets	
	Other packing on request	

[back](#)

Silicon Carbide Powder

Chemical Composition	SiC	approx. 98.6 %
	C _{free}	approx. 0.15 %
	Si _{free}	approx. 0.15 %
	Fe ₂ O ₃	approx. 0.05 %
	SiO ₂	approx. 0.25 %
Particle Size	< 0.400; < 0.315; < 0.250 mm	< 40; < 50; < 60 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Paper bags, steel drums, big bags on pallets	
	Other packing on request	

[back](#)

Ferro Silicon Manganese L.C. and M.C. Powder

Chemical Composition	L.C.	M.C.
Mn	58 - 65 %	65 - 75 %
Si	28 - 32 %	15 - 25 %
C	max. 0.20 %	0.5 - 2 %
P	max. 0.1 %	max. 0.2 %
S	max. 0.02 %	max. 0.02 %
Fe	bal.	bal.
Particle Size	< 0.315; < 0.250 mm	< 50; < 60 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums, big bags on pallets	
	Other packing on request	

[back](#)

Ferro Silicon 45 Powder

Chemical Composition	Si	43 - 47 %
	C	max. 0.10 %
	P	max. 0.05 %
	S	max. 0.02 %
	Al	max. 1.0 %
	Mn	max. 1.0 %
	Fe	bal.
Particle Size	< 0.315; < 0.250; < 0.150 mm	< 40; < 60; < 100 mesh (ASTM)
	Additional particle size distributions on request	
Particle Shape	Irregular, passivated	
Packing	Steel drums à 400 kg, big bags on pallets	
	Other packing on request	

[back](#)

Tantalum

Tantalum Carbide Powder

Chemical Composition	TaC	min. 99.5 %
	C _{total}	min. 6.18 %
	C _{free}	max. 0.10 %
	O	max. 0.30 %
	Fe	max. 0.40 %
	Ca	max. 0.03 %
	Al	max. 0.01 %
	N	max. 0.02 %
	Si	max. 0.01 %
	Na	max. 0.01 %
Particle Size	< 0.180 mm	< 80 mesh (ASTM)
	Finer grades on request	
Packing	Drums à 50 kg on pallets	
	Other packing on request	

[back](#)

Titanium

Titanium Metal Powder

Chemical Composition	Ti	min. 98 %
	Fe	max. 1.5 %
	other each	max. 0.5 %
Particle Size	< 0.250 mm	< 60 mesh (ASTM)
	Additional particle size distributions on request	
Packing:	Steel drums on pallets	

Grades 1, 2, 5 and 23 (5 ELI) are available.

[back](#)

Titanium Carbide Powder

Chemical Composition	TiC	min. 98 %
	C _{free}	approx. 2.0 %
	P	max. 0.030 %
	S	max. 0.030 %
	Fe	max. 0.40 %
	O	max. 0.50 %
Particle Size	< 0.180 mm	< 80 mesh (ASTM)
	Finer grades on request	
Packing	Steel drums on pallets	

[back](#)

Ferro Titanium 30 Powder

Chemical Composition	Ti	28 - 32 %
	Al	max. 7.0 %
	Si	max. 4.0 %
	C	max. 0.1 %
	P	max. 0.04 %
	S	max. 0.03 %
	Fe	bal.
Particle Size	< 0.315 mm	< 50 mesh (ASTM)
Packing	Steel drums on pallets	
	Other packing on request	

[back](#)

Ferro Titanium 40 Powder

Chemical Composition	Ti	38 - 42 %
	Al	max. 8 %
	Si	max. 3.5 %
	P	max. 0.03 %
	S	max. 0.03 %
	C	max. 0.10 %
	Mn	max. 2.5 %
	Fe	bal.
Particle Size	< 0.315 mm	< 50 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums on pallets	
	Other packing on request	

[back](#)

Tungsten

Tungsten Metal Powder

Chemical Composition	Al	approx. 5 ppm
	Ca	approx. 2 ppm
	Co	approx. 5 ppm
	Fe	approx. 5 ppm
	Mo	approx. 20 ppm
	Ni	approx. 5 ppm
	O	approx. 330 ppm
	S	approx. 5 ppm
	Si	approx. 10 ppm
Particle Size	3 µm (FSSS)	
	Additional particle size distributions on request	
Packing	Drums on pallets	
	Other packing on request	

[back](#)

Fused Tungsten Carbide Powder

Chemical Composition	C _{total}	3.8 - 4.1 %
	C _{free}	max. 0.1 %
	others	max. 0.7 %
	W	bal.
Particle Size	< 0.400; < 0.250; < 0.180 mm	< 40; < 60; < 80 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums à 50 kg on pallets	
	Other packing on request	

[back](#)

Ferro Tungsten Metal Powder

Chemical Composition	W	76 - 81 %
	C	max. 0.10 %
	Si	max. 1.0 %
	Mn	max. 0.5 %
	P	max. 0.06 %
	S	max. 0.07 %
	As	max. 0.06 %
	Sn	max. 0.06 %
	Cu	max. 0.15 %
	As + Sb + Sn	max. 0.18 %
	Fe	bal.
Particle Size	< 0.400; < 0.250 mm	< 40; < 60 mesh (ASTM)
	Additional particle size distributions on request	
Packing	Steel drums on pallets	
	Other packing on request	

[back](#)

Vanadium

Vanadium Carbide Powder

Chemical Composition	C _{total}	17.7 %
	C _{free}	max. 1.0 %
	O	max. 1.0 %
	Fe	max. 0.40 %
	Ca	max. 0.03 %
	Al	max. 0.01 %
	N	max. 0.10 %
	Si	max. 0.05 %
	Na	max. 0.02 %
Particle Size	< 0.180 mm	< 80 mesh (ASTM)
	Finer grades on request	
Packing	Steel drums à 50 kg on pallets	
	Other packing on request	

[back](#)

Ferro Vanadium Powder

Chemical Composition	V	78 - 82 %
	C	max. 0.25 %
	Si	max. 1.0 %
	Al	max. 1.5 %
	P	max. 0.05 %
	S	max. 0.05 %
	Fe	bal.
Particle Size	< 0.250 mm	< 60 mesh
	Additional particle size distributions on request	
Packing	Steel drums on pallets	

[back](#)

Zircon

Zircon Carbide Powder

Chemical Composition	ZrC	min. 98.0 %
	C _{total}	min. 11.2 %
	C _{free}	max. 0.7 %
	O	max. 1.0 %
	Fe	max. 0.40 %
	Ca	max. 0.03 %
	Al	max. 0.01 %
	N	max. 0.10 %
	Si	max. 0.02 %
	Na	max. 0.02 %
Particle Size	< 0.180 mm	< 80 mesh (ASTM)
	finer grades on request	
Packing	Steel drums à 50 kg on pallets	
	Other packing on request	

[back](#)

Ferro Silicon Zircon Powder

Chemical Composition	Zr	28.0 – 35.0 %
	Si	43.0 – 52.0 %
	C	max. 0.50 %
Particle Size	< 0.160; < 0.250 mm	< 100; < 60 mesh (ASTM)
Packing	Steel drums on pallets	
	Other packing on request	

[back](#)