



WHEN PERFORMANCE IS EVERYTHING

SUPERIOR METAL POWDERS FOR COMPLEX APPLICATIONS

HOT ISOSTATIC PRESSING AND NEAR NET SHAPES

Critical industrial environments often require parts with improved properties and reduced manufacturing cycles making Hot Isostatic Pressing (HIP) and production of Near Net Shapes (NNS) a preferred option. With the right materials partner, HIP and NNS yield consistent quality and improved strength with less machining.

HIP and NNS require highly spherical powders produced through gas atomization. Carpenter Powder Product's CarTech Micro-Melt® metal powders are engineered to deliver excellent reproducibility of particle size distribution, high packing density, consistency, and cleanliness.



Your Solutions Partner

The leading provider of metal powders, Carpenter has both the capability and capacity to provide materials solutions for your design challenges.

- HIP consolidated powder can be produced in billet form for forging or rolling into bar, or as semi-finished shapes.
- Heat-resistant and/or corrosion resistant powder alloys for bimetallic forms.
- Powders for HIP cladding.
- Standard packaging and sizes

Strategically Located, at Your Service

As the only major powder metals manufacturer with production facilities in both North America and Europe, we supply customers in a timely and cost-effective manner.

Our materials experts can provide guidance on materials selection, machine optimization, or development of customer solutions to meet your specifications.

With Carpenter, you have access to:

- Broad portfolio of metal powder grades
- Highest quality standards for performance applications
- Technical expertise to provide complete lifecycle solutions.
- A number of standard powder packaging options, including:
 - Bottles (5kg)
 - Buckets (25 kg)
 - Drums (100-250 kg)
 - Customized packaging options

To learn more contact Carpenter today.

Nominal Chemical Composition (typical values in wt.%)

CarTech® Micro-Melt®	C	Cr	Ni	Mo	Si	Mn	Fe	Others	UNS No.
23	£1.3	4.0	—	5.0	0.35	0.3	Bal	V: 3.1	T11323
4140	0.4	1.0	—	0.2	0.2	0.9	Bal	—	G41400
4340	0.4	0.8	1.8	0.25	0.25	0.7	Bal	—	G43400
A11	£1.3	4.2	—	5.0	0.35	0.3	Bal	W: 6.3, V: 3.1	T30111
A11LVC	1.8	5.2	—	1.3	0.9	0.5	Bal	V: 8.9	—
H13	0.4	5.0	—	1.3	1.0	0.3	Bal	V: 1.0	T20813
M4	1.4	4.3	—	5.0	0.4	0.4	Bal	W: 5.6, V: 4.1	T11304
M4T2	1.5	4.5	—	4.5	—	—	Bal	W: 5.8, V: 4.0	—
PD-1	1.10	7.8	—	1.6	1.2	0.3	Bal	V: 2.4, T: 1.1	—
T15	1.6	4.6	—	—	0.3	0.3	Bal	W: 12.5, Co: 5.0, V: 5.0	T12015
17-4	£0.1	16.0	4.0	—	£0.5	£0.5	Bal	Cu: 4.0, Nb: £0.5	S17400
304L	£0.03	18.5	10.0	—	£0.75	£2.0	Bal	—	S30403
316L	£0.03	17.0	10.5	2.5	£1.0	£2.0	Bal	Cu £1.0	S31683
410	£0.2	12.5	—	—	£1.0	£1.0	Bal	—	S41080
420	<0.5	13.5	—	—	—	—	Bal	—	S42080
440C	1.1	17.0	£1.0	0.6	£1.0	£1.0	Bal	—	S44004
420CW	<2.3	12.8	—	1.3	0.9	£0.5	Bal	V: <9.3	—
CCW	<0.2	28.0	10.0	5.5	£1.0	£1.0	£2.0	W: 4.5, Ta: 0.8, Co: Bal	—
CCM®	<0.2	28.0	£1.0	6.0	£1.0	£1.0	<0.8	Co: Bal	—
CCM Plus® ¹	0.25	28.0	—	6.0	—	—	—	Co: Bal	—
600	£0.1	15.5	Bal	—	—	—	7.5	—	—
622	£0.02	21.5	Bal	13.5	0.5	0.4	3.0	W: 3.0	—
625	£0.1	21.5	Bal	9.0	£0.5	£0.5	≤5.0	Nb: 3.6, Ti: <1.0, Al: <1.0	N06625
625 Plus® ²	£0.03	20.5	61.0	8.2	£0.2	£0.2	Bal	Ti: 1.3, Nb: 3.5, Others: <1.0	—
713	£0.2	13.0	Bal	4.5	£0.5	£0.25	£2.5	Al: 6.0, Nb: 2.3, Ti: 0.75, Co: £1.0	—
718	<0.1	19.0	Bal	3.0	<0.4	<0.4	£19.0	Nb: 5.1, Ti: 0.9, Others: <1.0	N07718
LC Astroloy	<0.1	15.0	Bal	5.0	—	—	—	Co: 17.0, Ti: 3.5, Al: 4.0, B: <0.1	—
NeuroSorb Plus® ³	<0.1	19.0	13.5	—	£0.75	£2.0	Bal	B: £2.5, Others: <1.0	—
DuoSorb® 316NU									
M247	—	8.4	Bal	0.7	—	—	—	Co: 10.0, W: 10.0, Al: 5.5, Ta: 3.0, Hf: 1.4, Ti: 1.0	—

1 U.S. Patent Number 5,462,575 2 U.S. Patent Number 5,556,594 3 U.S. Patent Numbers 4,891,080 & 5,017,437

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