



SPECIALTY ALLOYS FOR AEROSPACE

BÖHLER TM UDDEHOLM

SPECIALTY ALLOYS FOR AEROSPACE

Faster, lighter, higher — terms of our times which must be taken literally, especially in the aerospace industry. Fulfilling these requirements demands everything of materials.

Böhler-Uddeholm provides the materials that aerospace engineers need — in the grade and dimension they want.

Each and every step of production — from melting to delivery — is in our own hands and means the highest, most consistent quality for you. This is why Böhler-Uddeholm has become one of the most reliable partners of the international aircraft industry.





WING COMPONENTS

- Engine Pylons
- Engine Mounts
- Panels
- Bearing
- Flap Tracks
- Slat Tracks

LANDING GEAR COMPONENTS

- Lower Arm
- Cylinder
- Support
- Main Landing Gear Fitting
- Brakes

ENGINE COMPONENTS

- Shaft
- Compressor Blades / Vanes
- Bearing
- Gear
- Casing / Seal

FUSELAGE COMPONENTS

- Doors
- Cargo Systems



APPROVALS



MAIN SYSTEM APPROVALS

**NADCAP, AS9100:2003 (by BSI),
ISO9001:2000 (by BSI)**

- GE S1000
- PWA 300
- Rolls Royce SABRE
- Snecma
- MTU (MTV)
- ITP (acc. AS9100)
- Agusta (acc. AQM-002)
- Airbus Germany (acc. QVA-V06-02-00)
- Airbus UK Ltd. (acc. AUK/SA/001-3)
- BAE Systems (Operations) Ltd.
- BAE Systems Regional Aircraft (RALOA/00503/3)
- Böhler Schmiedetechnik
- Boeing (D1-4426)
- Bombardier Aerospace (Code 121017)
- Hawker Beechcraft Corp. (Code HBIFSAS/Part3/0815)
- Korean Air
- Messier Dowty (SAFRAN Group)
- NHBB
- Westland Helicopters
- SKF Aeroengines France (SNFA)

MAIN LABORATORY APPROVALS

NADCAP	Chemical, Mechanical, Corrosion Testing, Metallography and Hardness, Heat Treatment
GE Aero Engines	S400
Pratt & Whitney	LCS/MCS MCL F17*
Snecma Moteurs	FAL n°310 acc. PRO 0430
Rolls Royce	MSRR 9951
Airbus France	MM 049
Boeing	D1-4426

* P&W LCS requirements have to be ordered specifically.

MAIN NDT APPROVALS

NADCAP	AMS 2154
GE Aero Engines	P3TF34
Pratt & Whitney	SIM 14, SIS 45
Snecma Moteurs	DMC 0022
Rolls Royce	RPS 707
Airbus UK	
Boeing	D1-4426

Being one of the largest and most renowned special steel producers in the world, Böhler-Uddeholm offers a wide range of special steels and nonferrous metal alloys.

Below is a survey of our common materials for the aircraft industry. We supply materials according to all current specifications and standards.



Premium Melted — Ni Based Alloys

Standards, Customer Specifications & Approvals

GRADE	MARKET GRADE	MELTING ROUTE		STANDARDS				INDUSTRY SPECIFICATIONS	PRODUCTS SIZE RANGE
		VIM ESR	VIM VAR	AMS	W Nr./ UNS	ASTM	OTHERS		
BÖHLER L718	Alloy 718		•	5662 5663	2.4668/ N07718	B637	NiCr19NbMo	Snecma DMD 424-22 GE B50TF15 A/D/E; C50TF6; B50A809C* P&W PWA-S-5662H Cl.2, PWA-S-5663E Cl.2 Goodrich AMS5662* Boeing D1 4426 (PC694, PC696)* MTU - MTS 1424-1*	Round Bars: 14.5 – 203.2mm (0.57" – 8") Flat Bars, Ingot, Billet, Hot Rolled Coil
BÖHLER L303	Waspaloy		•	5704 5706 5707 5708 5709	2.4654/ N07001	B637		Snecma DMD 0426-22	Round Bars: 12.5 – 203.2mm (0.49" – 8") Flat Bars, Billet, Hot Rolled Coil
BÖHLER L625	Alloy 625	•		5666	2.4856/ N06625	B446-03 G1 B564-06a	NiCr22Mo9Nb ASME: SB446-07 SB564-07	Snecma DMD 0436-22 Honeywell EMS 55425P cond B	Round Bars: 12.5 – 203.2mm (0.49" – 8") Flat Bars, Ingot, Billet, Hot Rolled Coil
BÖHLER L901	Alloy 901		•	5660 5661	2.4662/ N09901			Snecma DMD 0212-22 GE	Round Bars: 12.5 – 203.2mm (0.49" – 8") Flat Bars, Hot Rolled Coil
BÖHLER LHX	Alloy X	•		5754	2.4665/ N06002	B572		Snecma DMD 491-23 GE B50TF31-A	Round Bars: 12.5 – 203.2mm (0.49" – 8") Flat Bars, Hot Rolled Coil
BÖHLER L080A	Alloy 80A	•	•		2.4631/ N07080	B637	NiCr20TiAl EN 10269		Round Bars: 12.5 – 203.2mm (0.49" – 8") Flat Bars, Hot Rolled Coil
BÖHLER L090	Alloy 90	•	•	5829	2.4632/ N07090	B637		MTU MTS 1042-2*	Round Bars: 12.5 – 203.2mm (0.49" – 8") Flat Bars, Hot Rolled Coil

* Specific customer approval for a specific size or product range.

PH Grades

Standards, Customer Specifications & Approvals

GRADE	MARKET GRADE	MELTING ROUTE				STANDARDS			INDUSTRY SPECIFICATIONS	PRODUCTS SIZE RANGE
		EAF	EAF ESR	EAF VAR	VIM VAR	AMS	W Nr./ UNS	OTHERS		
BÖHLER N700	17-4 PH	•				5643	1.4542	Z6CNU17.04 X5CrNiCuNb17 4 4	Snecma DMB 229-20* P&W CPW-S-5643	Bar-Round, Flat, Billet, Hot Rolled Coil
BÖHLER N700	17-4 PH			•		5622 5643	1.4548	EZ6CNU17.04 X5CrNiCuNb17 4 4	Airbus ZBF1109, ZBF301438 Alenia P19X316	Bar-Round, Flat, Billet, Hot Rolled Coil
BÖHLER N701	15-5 PH			•		5659	1.4545/ S15500	EZ5CNU15.05 X5CrNiCu15.05	Airbus ASNA 3297; ASNA 6116; Eurocopter ASNA 3294* Boeing D1 4426 (PC660)* Bombardier EMCM-001-1013 Goodrich AMS5659*	Bar-Round, Flat, Ingot, Billet, Hot Rolled Coil
BÖHLER N709	13-8Mo				•	5629	1.4534/ S13800	EZ3CNDA 13-8 X3CrNiMoAl13-8-2	Airbus ZBF1109, ZBF301438 Bombardier EMCM-001-1013	Bar-Round, Flat, Billet, Hot Rolled Coil
BÖHLER T670		•					1.4594	S143		Bar-Round, Flat, Billet, Hot Rolled Coil

* Specific customer approval for a specific size or product range.

OUR MATERIALS

Aerospace Bearing and Gear Steels

Standards, Customer Specifications & Approvals

GRADE	MARKET GRADE	MELTING ROUTE				STANDARDS			INDUSTRY SPECIFICATIONS	PRODUCTS SIZE RANGE
		EAf	EAf ESR	EAf VAR	VIM VAR	AMS	W Nr. /UNS	Others		
BÖHLER E105	9310			•	•	6265	~1.6657	AISI 9310	Agusta 199-20-005	Round Bars: 12.7 – 400mm (0.5" – 15.75") Flats, Billets
BÖHLER N360	X30		•			5898	1.4108	X30CrMoN15-1		Round Bars: 2.9 – 130mm (0.11" – 5.12")
BÖHLER N695	440C	•		•		5618 5630	1.3544	X105CrMo17 X102CrMo17		Round Bars
BÖHLER R100	52100 VIM/VAR				•		--	100Cr6		Round Bars
BÖHLER R100	52100			•		6444	--	100Cr6		Round Bars
BÖHLER R250	M50				•	6491	~1.3551		Snecma DMD 119-20* GE C50TF56* P&W PWA793*,CPW378*	Round Bars: 12.5 – 125mm (0.49" – 4.92")
BÖHLER R350	M50 Nil				•	6278			GE B50TF211*	Round Bars: 12.5 – 125mm (0.49" – 4.92")
BÖHLER V361	E32CDV13				•	6481	~1.7765	E32CDV13	Eurocopter ASNA 6128*, Agusta AMS6481*	Round Bars: 12.5 – 125mm (0.49" – 4.92")
BÖHLER V124SC	4340			•		6414	1.6944/ G43400	S149	Agusta 199-20-007 (ESR) Bombardier EMCM-001-1013	Round Bars

* Specific customer approval for a specific size or product range.

High Performance Aerospace Steels

Standards, Customer Specifications & Approvals

GRADE	MARKET GRADE	MELTING ROUTE				STANDARDS				INDUSTRY SPECIFICATIONS	PRODUCTS SIZE RANGE
		EAf	EAf ESR	EAf VAR	VIM VAR	AMS	W Nr. /UNS	BS	OTHERS		
BÖHLER A750		•				5646	1.4546	S130	X5CrNiNb18-10	Airbus ZBF1109, ZBF301438	Round Bars: 0.63-220mm (0.02" – 8.66") Flat
BÖHLER E108SA		•					1.6722	S82		Liebherr LAT 1.9043	Round Bars: 12.5-127mm (0.49" – 5") Flat
BÖHLER N352 BÖHLER N352S1		•					1.4044	S80	Z15CN16-02	Airbus ZBF1109	Round Bars: 6.34–190mm (0.25" – 7.48") Flat, Billet
BÖHLER T552 BÖHLER T552S1	Jethete	•	•			5719	1.4939	S151	Z12CNDV12	Snecma DMD 235-20, DMD 237-20*, DMD 242, Turbomeca AMS 5719*	Round Bars: 12.5 – 170mm (0.49" – 6.69") Flat, Billet
BÖHLER T200	A286		•			5731 5732	1.4943 1.4944		Z6NCT25	Snecma DMD 247-22, Turbomeca AMS 5732*	Bar — Round, Flat, Billet, Hot Rolled Coil

* Specific customer approval for a specific size or product range.

Maraging Steels

Standards, Customer Specifications & Approvals

GRADE	MARKET GRADE	MELTING ROUTE				STANDARDS				INDUSTRY SPECIFICATIONS	PRODUCTS SIZE RANGE
		EAf	EAf ESR	EAf VAR	VIM VAR	AMS	W Nr. /UNS	BS	OTHERS		
BÖHLER V720	Maraging 300				•	6514	1.6354		EZ2NKD18 ~X2NiCoMo18 9 5		Bar — Round, Flat, Billet, Hot Rolled Coil
BÖHLER V723	Maraging 250				•	6512	1.6359	S162		Liebherr LAT 1.9018 Messier Dowty MAT102	Bar — Round, Flat, Billet, Hot Rolled Coil

* Specific customer approval for a specific size or product range.

High Performance Heat Treatable Steels

Standards, Customer Specifications & Approvals

GRADE	MARKET GRADE	MELTING ROUTE				STANDARDS				INDUSTRY SPECIFICATIONS	PRODUCTS SIZE RANGE
		EAFF	EAFF ESR	EAFF VAR	VIM VAR	AMS	W Nr. /UNS	BS	OTHERS		
BÖHLER V118S1		•					1.6745	S98 S99	~40NiMoCr10-5	Bombardier EMCM-001-1013	Bar — Round, Flat, Billet
BÖHLER V124SC	4340			•		6414	1.6944/ G43400	S149	SAE 4340 ~40NiCrMo6	Agusta 199-20-007 (ESR) Bombardier EMCM-001-1013	Bar — Round, Flat, Billet
BÖHLER V132	300M			•		6257 6419		S155	SAE 4340M	Liebherr LAT 1-9042	Bar — Round, Flat, Billet
BÖHLER V141		•						S97 S140 S154		Bombardier EMCM-001-1013	Bar — Round, Flat, Billet
BÖHLER V145	30CND8	•					1.6604		30CND8 30CrNiMo8	Airbus ZBF1109, ZBF301438	Bar — Round, Flat, Billet
BÖHLER V354	15CDV6	•	•				1.7734 1.7736*		E 15CDV6 ~14CrMoV6 9	Airbus ZBF1109, ZBF301438	Bar — Round, Flat, Billet
BÖHLER V358	E40CDV12			•	•		1.8523	S132	E40CDV12	Snecma DMD113-20*	Bar — Round, Flat, Billet

* Specific customer approval for a specific size or product range.

THERMAL PROCESSING

Since 1991, Böhler-Uddeholm Thermo-Tech has been providing thermal processing solutions to customers across North America. Our aim is to provide the highest level of quality and service at competitive prices.

Accreditations:

ISO 9001, AS9100, NADCAP

Capabilities:

- High Pressure Vacuum Hardening (10 Bar, 6 Bar, 5 Bar, 2 Bar)
- CryothermSM (Liquid Nitrogen Cryogenic Treatment)
- Tempering (Vacuum, Atmosphere)
- Stress Relieving (Vacuum, Atmosphere)
- Annealing (Vacuum, Atmosphere)
- Bright Annealing
- Precipitation Hardening (Solution Annealing, Ageing)
- Normalizing
- Homogenizing
- ThermoniteSM (Gaseous Ferritic Nitro-Carburizing and Nitriding)
- Specialized Racking / Fixturing
- Laboratory Services including Metallography and Microhardness

For a complete list of services, please visit our website at www.buthermotech.com or call us at 1 800 665 8335.





BÖHLER UDDEHOLM

Global Footprint — Böhler-Uddeholm markets its products and services in 100 countries on all continents, with wholly owned sales subsidiaries in over 50 markets. To find a sales office near you, please visit our corporate website at www.boehler-uddeholm.com.

DPAP - DFARS — In accordance with DFARS 252.225.7014: clause c1, DFARS 225.872, Austrian material may be used in “Buy American Act” applications where the total value of the Austrian material is less than 50% of the value of the component.

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