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OIL & GAS INDUSTRY

AMPCO® AND AMPCOLOY® ALLOYS FOR THE OIL & GAS INDUSTRY

Excellence in Engineered **Alloys**

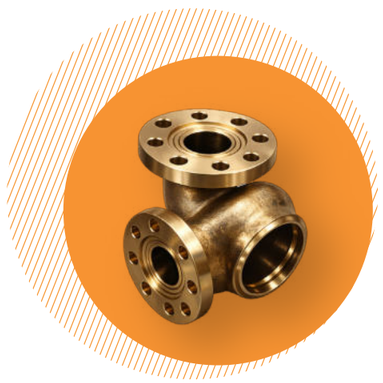
AMPCO® AND AMPCOLOY® ALLOYS FOR THE OIL & GAS INDUSTRY

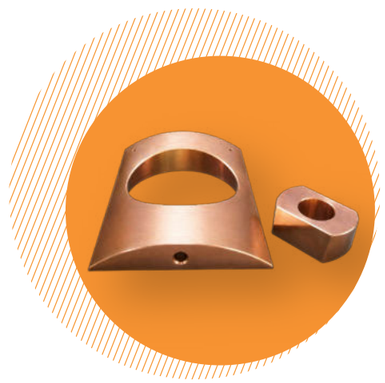
The following table presents the AMPCO® and AMPCOLOY® alloys recommended for the offshore industry, with mechanical properties, applicable standards, and regional availability.

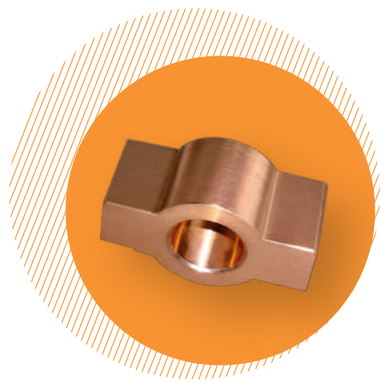
AMPCO Alloys	Nearest International Standard		Tensile Rm, KSI	Tensile Rm, MPa	Yield Rp0.2, KSI	Yield Rp0.2, MPa	Elongation A5 or 4D %	Hardness HB 10/30	Hardness Rockwell	USA	EUROPE	CHINA	INDIA
AMPCOLOY® 83	AMS 4533 AMS 4534 AMS 4535 AMS 4650 AMS 4651	C17200 CuBe2	60 to 185*	413 to 1275*	20 to 160*	140 to 1100*	20% to 4%*	90 to 360*	45 to 37 HRC*	◆	◆	◆	◆
AMPCOLOY® 91/95	ASTM B441 ASTM B534 ASTM B870	C17500 C17510 CuCoBe CuNiBe	99 to 102	680 to 700	80 to 95	550 to 650	10 to 15	220 to 240	96 to 100 HRB	●	●	●	●
AMPCO® 45	AMS 4640 NES 833	C63000 CuAl10Ni5Fe4	100 to 110	690 to 760	50 to 68	345 to 470	10	187 to 241	90 to 100 HRB	◆	◆	●	◆
AMPCO® M4	AMS 4590	C63020 CuAl11Ni5Fe5	130 to 135	900 to 930	90 to 100	620 to 690	6	255	26 HRC	◆	◆	◆	◆
AMPCO® S5	ASTM B505	C96900 CuNi15Sn8	99	680	95	650	4	286	30 HRC	●	●	●	●
Standard Alloys	AMS 4862	C86300 CuZn26Al6	110	760	60	415	14	192	99 HRB	●	●	●	●
	AMS 4880	C95510 CuAl10Ni5Fe3	95 to 105	655 to 725	50 to 62.5	345 to 430	9	187 to 241	90 to 100 HRB	◆	◆	●	◆
	AMS 4881	C95520 CuAl11Ni5Fe5	120 to 130	830 to 900	85 to 95	590 to 655	3	255	26 HRC	◆	◆	●	●
	BSB 23 (DTD 197)	CA104 UA11N CuAl11Ni5Fe5	94 to 101	690 to 760	46 to 58	320 to 400	10	179 to 255	88 to 108 HRB	●	●	●	◆
	UZ19AL6 NFL 14707	CuZn19Al6MnFe	113 to 120	780 to 830	78 to 85	540 to 590	7 to 10	225	98 HRB	●	◆	●	◆

The above are nominal values. If specific minimum figures are required, please contact your local AMPCO METAL representative.
* Depending on the heat treatment from the soft condition to aging.

◆ In stock
● On request







AMPCOLOY® 83, AMPCOLOY® 91 & **AMPCOLOY® 95** beryllium copper alloys are widely used for their excellent corrosion resistance, high strength, anti galling behaviour, and non magnetic properties.

Sensitive electronic guidance systems are housed within **AMPCOLOY® 83** drilling and measurement devices. As these systems can be adversely affected by magnetic fields, there is a critical requirement for housings exhibiting very low magnetic permeability.

These high value machined assemblies (MWD units – Measurement While Drilling) must operate reliably inside steel drill strings. They are required to slide smoothly within steel tubes without seizing or cold welding to adjacent components. In addition, they must allow easy make up and break out, be resistant to galling, and provide repeatable performance throughout drilling operations.

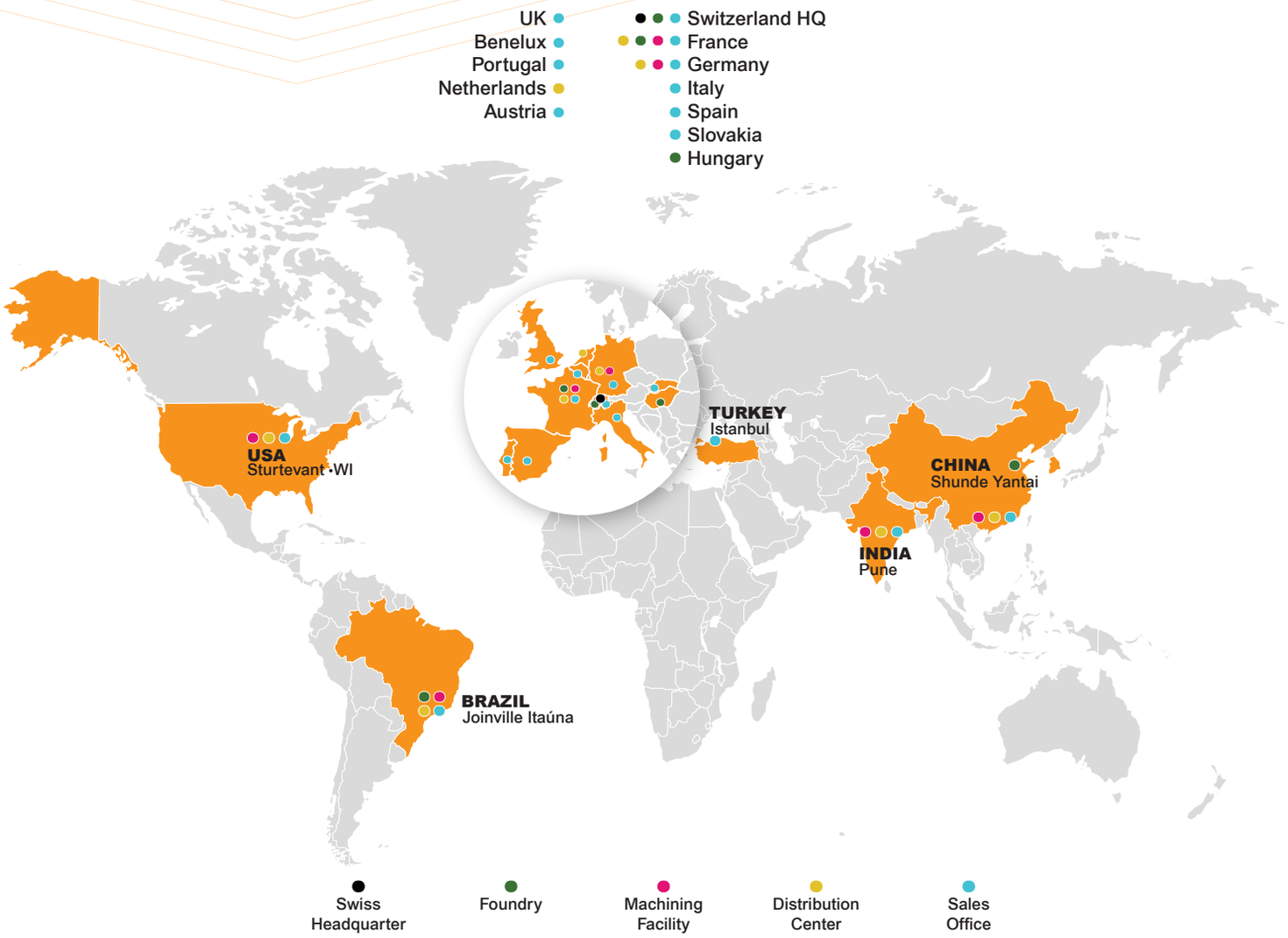
Where there is a move away from machining beryllium containing alloys, **AMPCO® M4** and **AMPCO® 45** are widely adopted as alternative materials. Through tailored heat treatment, these alloys can be engineered to deliver enhanced mechanical properties, particularly increased proof stress, for applications requiring higher performance.

AMPCO® S5 is a cast copper nickel tin spinodal alloy specifically developed for demanding oil and gas applications. It offers outstanding corrosion resistance, excellent galling resistance, and the capacity to withstand high mechanical loads. In severe downhole environments, it is commonly used as a reliable non magnetic alternative to steel.

THE RIGHT ALLOY FOR EVERY CRITICAL COMPONENT

In oil and gas and offshore environments, equipment such as Christmas Tree assemblies must perform reliably under high pressure, corrosive conditions, and the risk of ignition. AMPCO® & AMPCOLOY® alloys address these requirements through their combination of mechanical strength, corrosion resistance, and non-sparking behavior, supporting safe operation in hazardous areas.

Excellence in Engineered **Alloys**



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