AMETEK®
SPECIALTY METAL PRODUCTS

INNOVATIVE & ADVANCED METALLURGICAL TECHNOLOGY

P409L/409CB Stainless Steel

DESCRIPTION

P409L/409CB is a ferritic, weldable grade of stainless steel with key performance features, including high compressibility, enhanced green strength and good sinterability. This stabilized grade provides excellent corrosion resistance and has the capacity to provide high-caliber mechanical properties due to the high-temperature sintering response.

P409L/409CB's versatility also results from Cb being less prone to oxidation than Ti. In addition, the oxide is unable to combine with carbon and the Cb forms a stable carbide which prevents coarsening of carbides and grains in the weld's HAZ.

P409L/409CB is a prime candidate for automotive exhaust system applications, among other uses.

409LNI has added nickel for new automotive specifications.

PRODUCT	POWDER PROPERTIES		COMPACTING PRESSURE (TSI)	GREEN STRENGTH (PSI)	GREEN DENSITY (GM/CC)	SINTERED DENSITY (GM/CC)	SINTERED BREAKING STRENGTH (PSI)	DIMENSIONAL CHANGE FROM DIE SIZE (%)	UTS (PSI)	% ELONG	RB HARDNESS (APPARENT)
	APPARENT DENSITY (GM/CC)	FLOW (SEC./50G)									
P409L 409CB	2.9	30	30 40 50	1500 1800 2200	6.00 6.45 6.60	6.13 6.55 6.67	85,000 105,000 120,000	-0.31 -0.28 -0.24	41,000 54,000 64,000	3.6 4.8 5.3	42.0 71.0 80.0

Compacting properties were measured on powder blended with 1% Acrawax.
Sintering was done in dissociated ammonia at 2050°F for 45 minutes.

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POWDER PROPERTIES

Chemical Composition

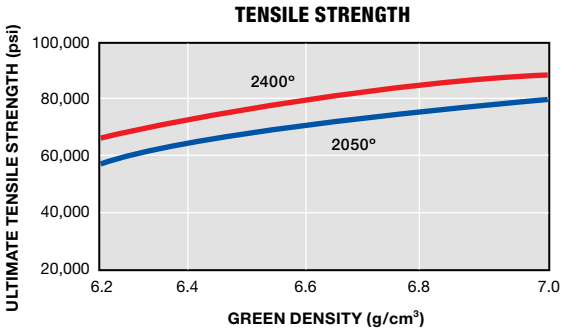
Chromium: 10.5-11.75%
Columbium: 0.4-0.8%
Manganese: 2.0% max
Silicon: 1.0% max
Carbon: 0.03% max
Sulfur: 0.03% max
Phosphorus: 0.04% max
Iron: Balance

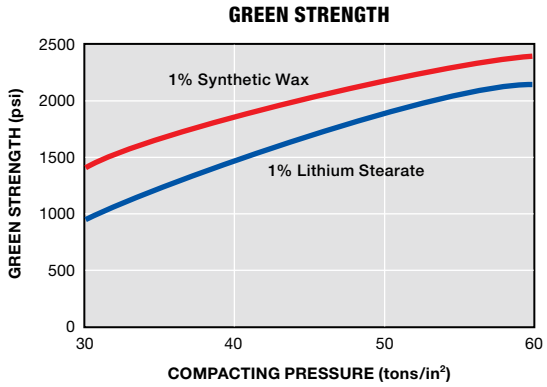
Physical Properties

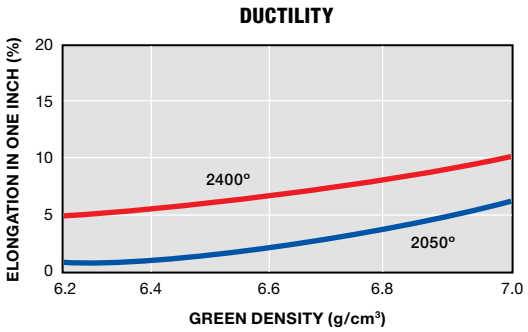
Apparent Density: 2.9 g/cm^3
Flow Rate: 30 sec/50g

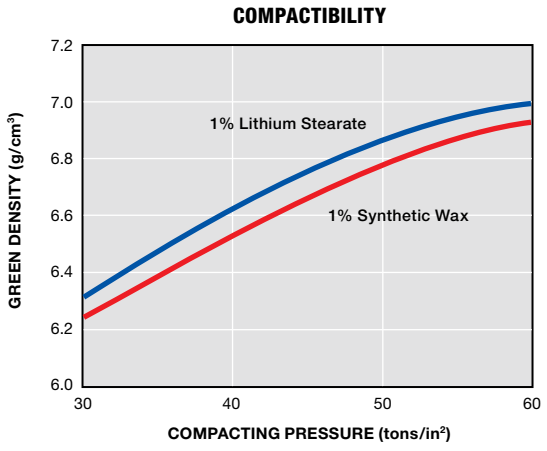
SINTERED PROPERTIES

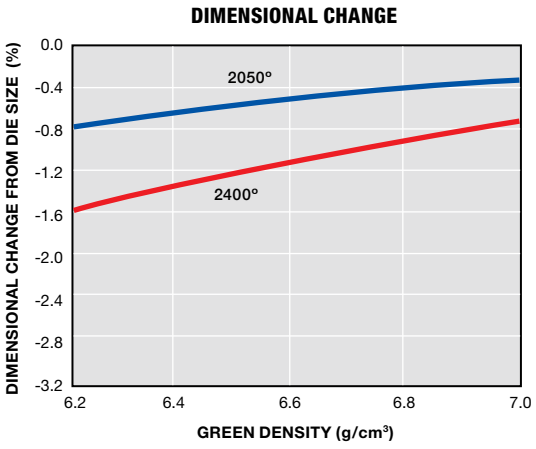
Sintered properties were determined using test specimens that were sintered for 45 minutes in dissociated ammonia with a -40°F dew point.











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