

409L/409CB POWDER STAINLESS STEEL

TECHNICAL DATA SHEET

DESCRIPTION

409L/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.

409L/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.

409L/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)									
409L 409CB	2.9	30	30	1500	6.00	6.13	85,000	-0.31	41,000	3.6	42.0
			40	1800	6.45	6.55	105,000	-0.28	54,000	4.8	71.0
			50	2200	6.60	6.67	120,000	-0.24	64,000	5.3	80.0

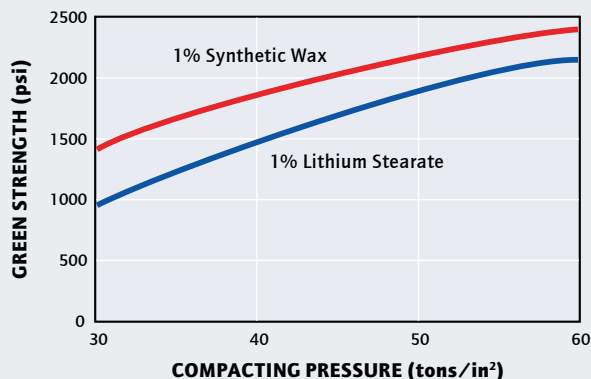
Compacting properties were measured on powder blended with 1% Acrawax. Sintering was done in dissociated ammonia at 2050°F for 45 minutes.

POWDER PROPERTIES

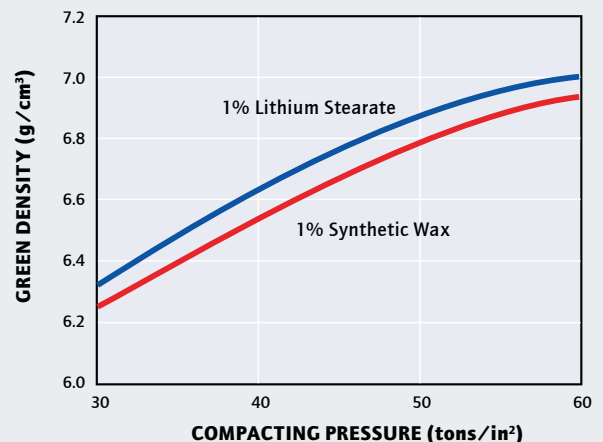
CHEMICAL COMPOSITION			
Chromium	10.5 - 11.75%	Carbon	0.03% max
Columbium	0.4 - 0.8%	Sulfur	0.03% max
Manganese	2.0% max	Phosphorus	0.04% max
Silicon	1.0% max	Iron	Balance

PHYSICAL PROPERTIES	
Apparent Density	2.9 g/cm ³
Flow Rate	30 sec/50g

GREEN STRENGTH



COMPACTIBILITY



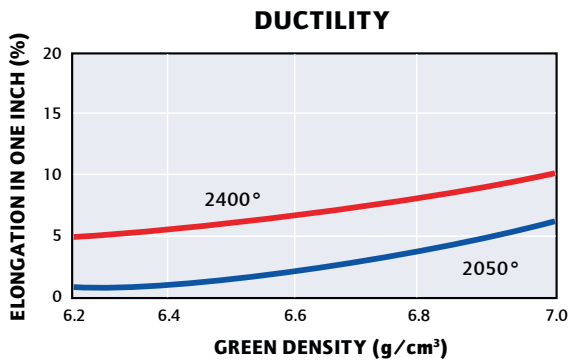
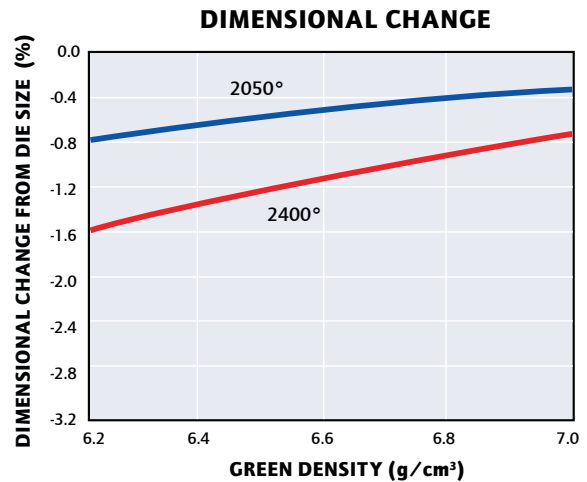
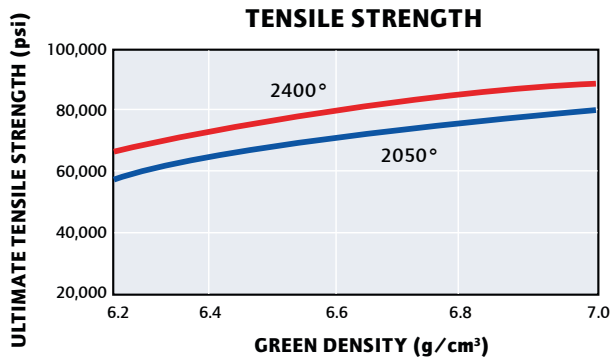
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SINTERED PROPERTIES

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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