

409 Ni STAINLESS STEEL



AK Steel 409 Ni is a nominal 11% chromium stainless steel micro-alloyed with titanium, manganese and nickel that provides excellent weldability, toughness and fabricating characteristics. This is a cost effective alternative to low carbon steel and low-alloy steels providing superior corrosion and/or oxidation resistance.

Under wet sliding conditions, such as encountered in coal-handling equipment, AK Steel 409 Ni Stainless Steel is a more cost-effective solution to carbon and AR (abrasion resistant) steels due to the corrosion component of the wear process.

High-temperature strength and oxidation resistance of this material are superior to carbon steel. The recommended maximum service temperature is 1350°F (730°C).

AK Steel 409 Ni Stainless Steel is an ideal material for applications requiring weldability and toughness superior to standard Type 409 in gauges greater than 0.120" (3.05 mm), at relatively low cost.

Potential coal-handling applications include chutes, hoppers, bunkers, flooring, perforated plate for sizing, flight

conveyor wear liners, vibrating screen pans, blending bin feeders, paddle mixers, screw feeders, fuel bins and dryer components.

Potential transportation applications include hopper car discharge chutes and bodies, intermodal containers, trailers, bus frames, dump truck bed liners and automotive exhaust flanges.

Additional application potential include noise suppression barriers, slurry pipelines, heat shields, cyclones, silos, belt scraper blades, screens and tanks.

TYPICAL COMPOSITION

	%
Carbon	0.02
Manganese	0.70
Phosphorus	0.020
Sulfur	0.004
Silicon	0.35
Chromium	11.00
Nickel	0.85
Titanium	0.20
Nitrogen	0.015
Iron	Balance

MECHANICAL PROPERTIES

Typical Room Temperature Properties*

Test Direction	UTS ksi (MPa)	0.2% YS ksi (MPa)	Elongation % in 2" (50.8 mm)	Hardness Rockwell B
Transverse	68.0 (469)	51.0 (352)	28.0	83

*0.375" (9.5 mm) plate

Minimum Properties Acceptable for Material Specification*

	UTS ksi (MPa)	0.2% YS ksi (MPa)	Elongation % in 2" (50.8 mm)
AK Steel 409 Ni	60 (414)	40 (276)	20.0
Type 409 (per ASTM A 240)	55 (379)	25 (172)	20.0

*Annealed sheet, strip and plate

