

CBS-50 NiL

Smiths Advanced Metals

Carburising & Gear Steel Bars

With high core fracture toughness

CBS-50 NiL is an alloy designed for service in elevated temperatures up to 600°F.

CBS-50 NiL is similar to M50 alloy but has low carbon content. The primary difference between the two alloys is that CBS-50 NiL has relatively high fracture toughness properties at its core. As the alloy is carburised, stresses on the material's surface are controlled, making the product an excellent choice for applications where contact fatigue is an issue (such as engine bearings). The alloy is also double vacuum melted for optimum cleanliness.

The material finds primary use in aerospace applications and in particular, engine bearings where good fatigue strength is critical. Other applications include aerospace parts and military gears.

Smiths Advanced Metals stocks [CBS-50 NiL steel bars](#) in closer incremental sizes to suit your particular engineering requirements.



Grades / Specifications

- AMS6278
- GE B50TF211
- GE C50TF84
- MSRR6113
- UNS K91231

Benefits

- High fracture toughness
- Double vacuum melted for optimum cleanliness
- Good strength at high temperatures
- Contact fatigue resistant

*Chemical Composition (weight %)

	C	Mn	Si	P	S	Cr	Ni	Mo	Cu	V	Co	W
min.	0.11	0.15	0.10			4.00	3.20	4.00		1.13		
max.	0.15	0.35	0.25	0.015	0.010	4.25	3.60	4.50	0.10	1.33	0.25	0.15

* As per AMS 6278

About Contact Fatigue

Contact fatigue is common in bearings, valves and gear couplings. It is a type of surface-pitting that affects both ferrous and non-ferrous alloys.

CB-50 NiL is a carburised steel that creates more significant control over the surface stresses on the material, making it an ideal product for contact fatigue specific applications.

