

GALVANIC REACTION CHART

Below is a galvanic reaction chart for dissimilar metals.

This chart is designed to assist in broadly assessing the risk of galvanic corrosion associated with a given metal coming into contact with another metal. To use the chart, align the metal to be assessed (for the risk of corrosion) in the left column with the Contact Metal listed in the upper row; green represents a lower risk* and red represents a higher risk. For a more specific assessment of the risk of galvanic corrosion, please reference other sources.

Galvanic Corrosion Risk		Contact Metal													
		Magnesium and Alloys	Zinc and Alloys	Aluminum and Alloys	Cadmium	Carbon Steels	Cast Iron	Stainless Steel	Lead, Tin, and Alloys	Nickel	Brasses, Nickel-Silvers	Copper	Bronzes, Cupro-Nickels	Nickel Copper Alloys	Nickel-Chrome Alloys, Titanium, Silver, Graphite, Gold, and Platinum
Corroding Metal	Magnesium and Alloys	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
	Zinc and Alloys	Green	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
	Aluminum and Alloys	Green	Green	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
	Cadmium	Green	Green	Green	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
	Carbon Steel	Green	Green	Green	Red	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red
	Cast Iron	Green	Green	Green	Green	Red	Green	Red	Red	Red	Red	Red	Red	Red	Red
	Stainless Steels	Green	Green	Green	Green	Red	Green	Red	Red	Red	Red	Red	Red	Red	Red
	Lead, Tin, and Alloys	Green	Green	Green	Green	Green	Green	Red	Green	Red	Red	Red	Red	Red	Red
	Nickel	Green	Green	Green	Green	Green	Green	Green	Green	Green	Red	Red	Red	Red	Red
	Brasses, Nickel-Silvers	Green	Green	Green	Green	Green	Red	Red	Red	Red	Green	Red	Red	Red	Red
	Copper	Green	Green	Green	Green	Green	Green	Red	Red	Red	Green	Green	Red	Red	Red
	Bronzes, Cupro-Nickels	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Red	Red
	Nickel Copper Alloys	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Red
	Nickel-Chrome Alloys, Titanium, Silver, Graphite, Gold, and Platinum	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green

*Green represents "lower risk" not "no risk."

It should be noted that if sacrificial plating is incorporated into the fastener design, then galvanic action can result in the deterioration of the sacrificial coating, rather than of the fastener. We would advise that the suggested fasteners for dissimilar-metal applications would incorporate our GrabberGard® coating that utilizes both barrier and sacrificial coatings to minimize the chance and/or rate of corrosion. The barrier coating used to encapsulate the base steel and zinc layer plus anti-corrosion chemical bonding agents minimize the opportunity for contact to occur, thereby further minimizing the risk of corrosion.