

Corrosion Glossary

open-circuit potential

The *potential* of an electrode measured with respect to a reference electrode or another electrode when no current flows to or from it.

organic

Being or composed of hydrocarbons or their derivatives, or matter of plant or animal origin. Contrast with *inorganic*.

organic acid

A chemical compound with one or more carboxyl radicals (COOH) in its structure; examples are butyric acid, $\text{CH}_3(\text{CH}_2)_2\text{COOH}$; maleic acid, $\text{HOOCCH}=\text{CHCOOH}$; and benzoic acid, $\text{C}_6\text{H}_5\text{COOH}$.

organic zinc-rich paint

Coating containing zinc powder pigment and an *organic* resin.

overaging

Aging under conditions of time and temperature greater than those required to obtain maximum change in a certain property, so that the property is altered in the direction of the initial value.

overheating

Heating a metal or alloy to such a high temperature that its properties are impaired. When the original properties cannot be restored by further heat treating, by mechanical working, or by a combination of working and heat treating, the overheating is known as *burning*.

overvoltage

The difference between the actual electrode potential when appreciable electrolysis begins and the reversible electrode potential.

oxidation

(1) A reaction in which there is an increase in valence resulting from a loss of electrons. Contrast with *reduction*. (2) A corrosion reaction in which the corroded metal forms an oxide; usually applied to reaction with a gas containing elemental oxygen, such as air.

oxidized surface (on steel)

Surface having a thin, tightly adhering, oxidized skin (from straw to blue in color), extending in from the edge of a coil or sheet.

oxidizing agent

A compound that causes *oxidation*, thereby itself being reduced.

oxygen concentration cell

A galvanic cell resulting from difference in oxygen concentration between two locations; See *differential aeration cell*.

ozone

A powerfully oxidizing allotropic form of the element oxygen. The ozone molecule contains three atoms (O_3). Ozone gas is decidedly blue, and both liquid and solid ozone are an opaque blue-black color, similar to that of ink.