



# NEWS ALERT

## S-11 Series Solves Acid Corrosion Problems at Low Concentration



Periodic scale removal in heat exchange equipment can be a necessary evil for industrial water maintenance. This creates a low pH environment that encourages acidic corrosion.

Cortec's S-11 Series is a powerful solution for inhibiting corrosion in acidic conditions such as chemical cleaning and acid pickling. It provides corrosion protection at a very low concentration, making it highly economical. It does not, however, affect the pH level and so will not interfere with the scale removal process.

In addition to protecting against internal corrosion during scale removal of online equipment such as heat exchangers, a very small concentration of S-11 is effective at solving flash corrosion problems on metal components being removed from acid pickling baths.

The S-11 Series protects multi-metal types and is miscible with most hydrocarbons. It is effective against corrosion in mineral acids (nitric, hydrochloric, sulfuric, and phosphoric acids) or organic acids (acetic, citric, formic, tartaric, sulfamic, phosphoric acid, and EDTA).

Learn more about the S-11 Series:

<https://www.cortecvci.com/products/vpci-for-oil-gas-and-process-industries/s-11-additive/>

### S-11/S-11 Org/S-11P

**PRODUCT DESCRIPTION**

S-11/S-11 Org are corrosion inhibitors for aqueous systems with low pH levels. S-11 is a proprietary blend of acetylenic alcohols, salts of quaternary amines, and nonionic surfactants. S-11 Org is a proprietary blend of salts of alkyl pyridines.

S-11/S-11 Org are suitable replacements for propargyl alcohol. They are less toxic and more environmentally acceptable.

S-11 Org is also available in powder form S-11P. This powder is especially useful in sulfamic acid solution.

Addition of these products in proper concentrations to the acidic solutions provide corrosion protection during entire operation process.

**FEATURES**

- Economical
- Environmentally friendly
- Multi-metal protection
- Miscible with most hydrocarbons
- Replacement for propargyl alcohol

**APPLICATION**

S-11 prevents corrosion in mineral acids, such as nitric, hydrochloric, sulfuric, and phosphoric.

S-11 Org is especially effective in organic acids such as acetic, citric, formic, tartaric; also in sulfamic, phosphoric acids, and EDTA.

S-11/S-11 Org does not affect the pH level so it will not affect the technological processes. Usually, S-11/S-11 Org are used at a concentration level of 0.1-1.0% by weight of total formula, and can be post-added if desired.

The concentration of inhibitor required depends on the concentration of the acid and operation conditions. In general, S-11/S-11 Org are effective at low concentrations, but at temperatures over 200°F (93°C), higher concentrations of S-11/S-11 Org corrosion inhibitors may be needed (0.50-1.0% for S-11 and 1-4% for S-11 Org). However, the most effective concentrations are best determined by laboratory tests.

**TYPICAL APPLICATIONS**

Examples of applications include acid pickling, chemical cleaning, additive for water-based coatings, and inks that have a pH less than 5.

**PHYSICAL PROPERTIES**

Property	S-11	S-11 Org	S-11 P
Appearance	Clear dark brown liquid	Opaque dark brown liquid	Off-white powder
Flash point, TCC	106°F (41°C)	N.E.	N.E.
Odor	Mild	Pungent	N.E.
Pour Point	< -40°F (-40°C)	N.A.	N.A.
Density	8.8-8.7 lb/gal (1.05-1.04 kg/l)	9.45-9.3 lb/gal (1.13-1.12 kg/l)	N.A.
pH	N.E.	1-2 (paste)	N.E.

**PACKAGING**

S-11 and S-11 Org are available in 5 gallon (19 liter) pails, 55 gallon (208 liter) drums, liquid totes, and bulk.

S-11P is available in 5 lb (2.3 kg), 50 lb (22.7 kg), and 100lb (45.4 kg) packages.

Cortec® Corporation is the global leader in innovative, environmentally responsible VpCI® and MCI® corrosion control technologies for the Packaging, Metalworking, Construction, Electronics, Water Treatment, Oil & Gas, and other industries. Headquartered in St. Paul, Minnesota, Cortec® manufactures over 400 products distributed worldwide. ISO 9001 and ISO 14001 Certified, and ISO 17025 Accredited.

