

Aktiphos® 4180

Corrosion inhibitor and hardness stabilizer for water treatment of cooling systems (can be used with pH water from 8.2 to 9.0).

APPLICATION

Aktiphos® 4180 is a cooling water treatment chemical used for corrosion protection of steel, copper and copper alloy surfaces and for protection against deposits in circulating cooling systems. The product is specifically designed for use in open cooling systems with soft water. If water hardness is high, Aktiphos® 4170 is recommended.

PRODUCT DESCRIPTION

Aktiphos® 4180 contains forforic acid, copper inhibitor and Corrsave® 100. Aktiphos® 4180's unique composition, which includes the latest Corrsave® corrosion reduction technology, with only a small amount of total phosphorus, provides good protection for metal surfaces. Corrsave® 100 is biologically transparent.

SPECIFICATION

Form:	Transparent or slightly cloudy yellowish liquid
Density (20°C/68°F):	1,23 ± 0,03 g/cm ³
pH (1% solution):	11,8 ± 0,5
Viscosity:	< 40 mPas
Total P (based on PO43- calculation):	3,8 ± 0,4 %
Ability to dissolve:	Can be mixed with water in any proportion

OPERATING PRINCIPLE

1. Due to the blocking of crystal growth (Threshold effect), Aktiphos® 4180 does not allow the scale formation. During stabilization, amorphous deposits break down, this prevents the scale formation. These deposits are removed from the system during the drainage process.
2. Aktiphos® 4180 reduces corrosion in light alloy steel and copper systems. снижает коррозию в системах из легкосплавной стали и меди.
 - Corrosion of light alloy steel is reduced due to the formation of a protective layer based on the existing in the product inhibitors;
 - Secondary corrosion is reduced due to the breaking properties of phosphonic acids and polycarboxylates (thus preventing deposits on metal surfaces);
 - On copper and copper alloy surfaces, corrosion is slowed down by the formation of a protective layer of copper inhibitor.

ENVIRONMENTAL EFFECT

Aktiphos® 4180 does not contain zinc. The product is non-volatile and non-combustible.

DOSING

The dosage depends on many factors (concentration factor, hardness, total alkalinity, amount of chlorides, temperature, curing index) and has to be selected with the help of ŠOMIS specialists.

In recirculation cooling water, the concentration of Aktiphos® 4180 should be kept in the range from 50 to 100 g/m³. Aktiphos® 4180 also can be used concentrated. The product should be dosed continuously and the amount of product should be proportional to the amount of feed water. Dosing should be done with special pumps. All equipment in contact with the product should be made of acid-resistant materials. Advantage should be given to plastics (PE, PP, PVC).

The product should be introduced into the system either before or before the highest precision mixing.

ANALYSIS

The quantity of Aktiphos® 4180 can be controlled according to the concentration of PO₄³⁻. The amount of PO₄³⁻ can only be determined after the oxidation breakdown of the phosphonic acids which are present in the product.

АНАЛИТИЧЕСКИЙ МЕТОД

Analytical method: A4 – total amount of phosphates.

1 g/m³ Aktiphos® 4180 = 0,038 g/m³ PO₄³⁻

1 g/m³ PO₄³⁻ = 26 g/m³ Aktiphos® 4180.