Product Information

Metaqua® 8160

Scale corrosion inhibitor for drinking water tems with soft water and free aggressive carbon dioxide

Principal Applications:

Metaqua® 8160 is a corrosion inhibitor with scale protection properties for drinking water systems containing water with a total hardness content of < 1.4 mol/m^3 (< 140 ppm $CaCO_3$) and a free aggressive carbon dioxide. It is also used as an after treatment for softened water.

General Description:

Metaqua® 8160 is a blended powdery product, based on special alkali phosphates and alkali silicates.

The compounds of Metaqua® 8160 and the recommended dosage comply with the German legislation.

Metaqua® 8160 is germ-free.

Appearance:

white powder

Bulk Density:

660 ± 100 kg/m^3

pH (1 % Solution):

11.7 ± 0.5

Solubility in Water:

maximum 25% @ 20°C/68° F

Total P-Content (calculated as PO_4^{3-}):

11.6 ± 1.3 %

P_2O_5-content = PO_4-content x 0,7473
P-content = PO_4-content x 0,3261

SiO_2 Content (calculated as SiO_2):

47 ± 3 %

Effect on Environment:

For information please see material safety data sheet.

Mode of Action:

Metaqua® 8160 binds free aggressive carbon dioxide by partial neutralization.

Metaqua® 8160 inhibits corrosion by formation of protecting layers due to the synergism of silicates and phosphates.

The corrosion protection even works at a low amount of hardness, when phosphates alone are unable to build sufficient protecting layers.

Metaqua® 8160 prevents the precipitation of corrosion products and the forming of "brown water" by complexing heavy metal ions e.g. iron, copper or manganese.

Metaqua® 8160 protects corrosion on all usual installation materials. The good corrosion protection in galvanized systems is to mention.

Additionally, Metaqua® 8160 is able to stabilize the hardness building compounds by threshold effect. Due to this, it prevents scale formation in the field of warm and cold water. Above 65°C/150°F the scale preven-

tion decreases. Beyond the stabilization limit an amorphous precipitate is obtained.

Dosage:

The dosage depends on several parameters and should preferably be selected with the help of a BKG Water Solutions representative.

Generally a concentration between 10 and 30 g Metaqua® 8160 / m^3 drinking water is recommended.

Due to the German legislation the dosage limit is 31 g/m^3.

Application:

Metaqua® 8160 is used as a 10 to 25 % solution.

The dosing solution should be made with softened water. By using water with a high amount of hardness the produced solution could become turbid. Nevertheless, this turbidity does not reduce the efficiency of the product.

The manufacturing and storing container of the dosing solution should be made of plastic or iron. A stirring equipment is recommended.

The product solution of Metaqua® 8160 should be added continuously by an automatic dosing system regulated by the quantity of drinking water. The complete feeding equipment (containers, pumps, pipes) must be made of alkaline resistant material. It might be convenient in major facilities, e.g. water works, to install a system for the automatic production of the additive upstream of the dosage system.

Analysis:

The amount of Metaqua® 8160 can be determined by measuring the PO_4^{3-} or SiO_2 content, in consideration of the PO_4^{3} respectively SiO_2 content before treatment.

1 g/m³ Metaqua® 8160 = 0.12 g/m³ PO_4^{3-}
1 g/m³ PO_4^{3-} = 8.3 g/m³ Metaqua® 8160

1 g/m³ Metaqua® 8160 = 0.47 g/m³ SiO2
1 g/m³ SiO_2 = 2.1 g/m³ Metaqua® 8160

The determination of phosphate and silicate are possible by standard test methods (see Methods of analysis A7E - Inorganic Phosphate II respectively A11E - Silicate).

Handling Precautions:

For information please see material safety data sheet.

The expiry date of the product is given on the packaging labels.

Certification

Our quality management system (ISO 9001:2008) and environmental management system (ISO 14001:2005) are successful certified by DQS.

BKG Water Solutions

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