

MECHANISM Of
CONTROL – CORROSION
by using
FILTERSORB SP3
Part VIII

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INTRODUCTION



There are many misunderstandings about **corrosion** in all and every water distribution system. Just using the word **corrosion** sets us on the wrong track. We are actually concerned about elevated metal concentrations in Drinking Water.

This presentation will describe the common mechanism that may cause metal release into water and thereby elevated metal concentrations.

“Understanding”

and managing these **FILTERSORB SP3** mechanisms are the keys to achieve what is commonly called

CORROSION CONTROL and PASSIVATION

The Need for a Protective Barrier



The correct way to apply the term **CORROSION** in Drinking Water Systems is in reference to an Ion-Chemical interaction between metal surface, such as all the metal pipe walls and the ions in the water with which it is in contact. The Ion chemical interaction is similar to that of water ions.

The Components of Water are:

Positive Charged Ions

and

Negative Charged Ions

Called

CATIONS

Called

ANIONS

Uniform Corrosion, which is typically the focus of this

SPECIAL CORROSION CONTROL

is to stop that cause that release LEAD, COPPER...

...continues on next slide



Once Again



Stop corrosion of LEAD, COPPER and any other metal into water

UNIFORM CORROSION

In **uniform corrosion**, the Cations and Anions move around dynamically on the inside metal surface of pipe walls, resulting in uniform loss of metal.

Calcium Carbonate: CaCO_3 has been proved to be adequate as a

PROTECTIVE BARRIER

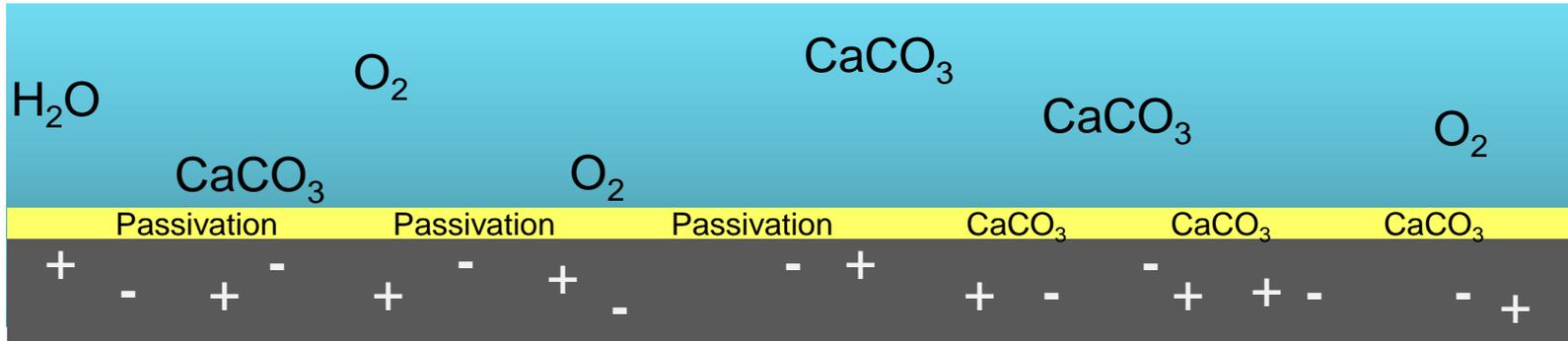
against **uniform corrosion**

*NOTE: Chemicals, such as phosphates, phosphonates have shown **negative barrier effect** against **uniform corrosion** on all metal surfaces and pipe walls.*

Calcium Carbonate Crystals

As Protection Against

“UNIFORM CORROSION”



Passivation ($CaCO_3$) is a Barrier between water and the Metal Layer

Calcium Carbonate is naturally available in water in form of Temporary Hardness $Ca(HCO_3)_2$. It is also known that it adjusts pH in the water and **FILTERSORB SP3** forces calcium carbonate to come out of the bracket and make very stable Calcium Carbonate crystals. This method is known as Nucleation Assisted Crystallization (NAC, see more [here](#)).

Nucleation Assisted Crystallization



Also known as Calcium Carbonate solid Precipitation Potentially the goal has been achieved to make Calcium Carbonate crystals that will stop **UNIFORM CORROSION** and also stop scale that all the pipes small or big will stay forever **without**

SCALE and CORROSION

Thanks for reading!