

# ***SOLA*vite**

**PHYSICAL CATALYST**

**Scaling Problems?  $\text{CaCO}_3$ ,  $\text{SiO}_2$ ,  
Sulfates & Carbonates?**

**SCALES TREATMENT**  
**Water Scales**

**Entire City - Homes - Buildings - Boilers  
Cooling Towers - Entire Plants**

**Petroleum Scales**

**Crude Oil - Oil Well - Refinery - Oil Duet**



**Industries**

**Cities**

**Residences**

**Hospitals**

**SOLAVITE** is a treatment for fluids in general. Its primary purpose is the prevention of the formation of mineral deposits (scale and encrustations) in pipes and fixtures, and the removal of existing deposits without causing corrosion.

**SOLAVITE** does not add anything to nor take anything from the fluids.

**SOLAVITE** is a very unique physical catalyst. It changes the magnetic properties of the minerals in the fluid in such a manner that they are repelled from each other and from the walls of the pipes and fixtures. This prevents the formation of scales and removes those which are existing.

**SOLAVITE** does not require any external energy source. It is entirely self contained.

**SOLAVITE** Treatment can be applied to systems which handle a trickle of flow or to a city's entire water system, and everything in between.



## ¿How SOLAVITE Works?

The **SOLAVITE** Cell is a diamagnetic catalyst which container is a hermetically sealed cylindrical copper tube. Its size is determined by the use and flow to be treated.

The cells are encased in an aluminum housing which has a special coating. In use, the cells cause changes in the attractive and magnetic forces between the fluid, the mineral particles and the pipes and fixtures. The net result is the prevention of the formation of deposits in the system. Already existing deposits are also affected and removed.

Thus, **SOLAVITE** acts as a physical catalyst (not mechanical, chemical or electronic); the unit combines properties of earth's magnetic field, the ingredients of copper cell, and the fluid to alter the environment and dissolve the minerals such that scaling and deposit build up are completely eliminated.

The **SOLAVITE** process was developed in the 1940's by a French scientist, André Émile Barbier. His research was initially based on the work and theories of Hans Christian Oersted, a Danish scientist, who studied the interaction of magnetic fields and electric charges. All modern motors and generators are based on the principle of forces developed by moving magnetic fields.

Similarly, the **SOLAVITE** process increases the diamagnetic field of the moving fluid and alters the mineral particles so that the formation of hard scale and encrustations are eliminated. The mineral encrustations that are already existing become soft, amorphous sediments which are mostly carried through the system with the fluid. Where these sediments do accumulate, they are easily flushed away, for example, in the "blow down" water wasted routinely from boilers.

In summary, the **SOLAVITE** process use no external chemicals or power. There is no change in the pH or hardness, but yet the hardness related minerals are altered so that the fluid may be used as it had been softened. Mineral crystals formed do not scale and deposit as they would, but they are suspended in the fluid.

The formation of hard, larger particles is inhibited and instead a finely divided, dispersed colloidal material is readily carried along by the fluid. The end result is a clean, deposit free system with the all of its attendant benefits.

**NOTE:** Similar effects and benefits occur in numerous fluids when treated with **SOLAVITE** catalytic cell. For example, major increases in efficiency and other maintenance and pollution reduction benefits are obtained when it's used with liquid fuels (crude oil, diesel, gasoline, alcohol).

## The SOLAVITE Catalyst

The **SOLAVITE** unit is a unique physical catalyst which alters the magnetic properties of scale forming minerals, so that these minerals are repelled from the walls of the pipe or container rather than being attracted to them.

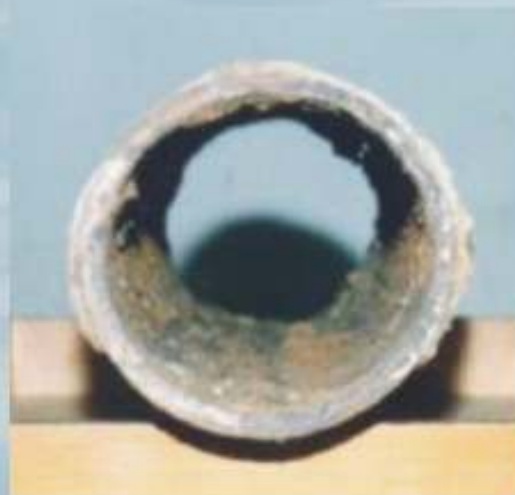
The **SOLAVITE** treated fluids affect the existing mineral deposits which they contact in the same manner and their bond is released.

The **SOLAVITE** process works without causing corrosion and electrolysis. Is is an entirely self-contained apparatus which does not require an external power source nor monitoring of any kind.

Chemist, Linus Pauling, Nobel Prize Winner, states that people are skeptical of the effectiveness of a catalytic action until they see the results. While a precise scientific explanation of how a particular catalyst works may be lacking, accomplishments and results can be readily demonstrated in actual use.



Picture seen above shows piping with Carbonate Scaling before **SOLAVITE** implementation



Piping after **SOLAVITE** implementation

## Fluids' Problems

All fluids contain varying amounts of dissolved and suspended minerals. All these fluids pass through pipes and equipment, some of the minerals form scale and deposits. Treated drinking water often scales more than before. As scale builds up, the water's flow is diminished, pressures are increased and efficiency is reduced.

The formation of scales in boilers and cooling circuits is greatly accelerated in many situations. Flow restriction and loss of heat transfer efficiency, then become serious and expensive problems. In boilers, as scale proceeds, problems occur such as reduction in steam generations, increased fuel use, pressure build up, tube plugging, etc.

In cooling systems, as scale deposits build up in the tubing, condensers lose their efficiency, flow becomes restricted. High pressure often occur and automatic controls may shut the system down.

## Chemical Treatment

Traditionally, chemical products are used to prevent this scaling and encrustation build up, but it is common knowledge that "descaling chemicals are corrosive and corrosion scale control chemicals are scale forming". Chemical engineers say "the use of chemical scale inhibitors is an inhibitive and not a curative action for scale forming". Thus, chemical treatment may reduce one problem while accelerating another.

## Catalytic Treatment

A catalyst does not cause a chemical change in the fluid. It does not add anything to nor take anything from it. Instead, the catalyst brings about a change in the physical properties of the minerals that are present. This change prevents mineral deposit build up. Furthermore, existing deposits are affected and are removed (this may cause a temporary increase in mineral contents as the old deposits are carried away).

This process does not cause corrosion nor does it cause electrolysis. The catalytic action simply presents mineral deposition and removes that which exists without changing the chemical properties of the fluids.



Example of SOLAVITE Cell

## Some Applications of SOLAVITE

### 1) Boilers and Cooling Towers

- It eliminates the need for chemical products.
- It eliminates the need for monitoring.
- It prevents the formation of scale and removes existing scale without causing corrosion to the system.
- It is less expensive than conditioning and de-scaling chemicals.

### 2) Home, Offices, Hospitals, Hotels, Restaurants, etc.

- It prevents the formation of scale and removes existing scale without causing corrosion to the system.
- It saves energy through more efficient operation of heat transfer coils and pipes.
- It replaces softening and conditioning chemicals and process.
- It enhances the taste of water.
- It diminishes chlorine taste and odor.
- It inhibits the growth of bacteria and algae in the system due to the absence of the encrustation, their habitat.
- It prolongs the life and proper operation of mechanical valves and equipment in the system.
- It does not alter the water potability.

### 3) Textile industry

- It eliminates the need for chemical products.
- It economizes on dyes and anilines.
- It guarantees uniformity in the dyeing of fabrics.

### 4) Food Industry

- It increases the output of the ferment dough.
- It reduces the bacteria and microbe content of the water.
- It reduces the taste and odor of chlorine in the water.

### 5) Photography and Microfilms

- It improves the quality of film development and copy.
- It eliminates the problems with residues which accumulate on the film.
- It improves the quality of printing on microfilm.

### 6) Fuels and Oils

- It improves combustion and efficiency.
- It cleans the fuel injectors and keeps them clean.
- It reduces pollutive emissions.
- It reduces and inhibits deposits resulting from Combustion.
- It reduces pressures in tubing, casings and formation of scaling in crude production wells.

### 7) Static Diesel Engines

- It prevents carbon build up.
- It cleans carbon deposits from cylinder heads, valves, pistons, rings, etc.
- It prolongs engine life.
- It reduces emissions.

## INSTALLATION INSTRUCTIONS AND MAINTENANCE

1. The cells (the copper tubes inside the apparatus) must be held PARALLEL to the earth surface and must be oriented in the MAGNETIC NORTH-SOUTH direction or, in other words, in the same direction of the needle of a compass.

*Never orient the apparatus without compass*

(Note: Whenever possible, compass readings should be made away from any buildings, structure, power line, etc., that will cause a deviation).

2. The apparatus must be installed with plastic nipples. *Metal nipples should never be used.* Threads of nipples should be wrapped generously with teflon tape.

3. The length of pipe between the apparatus and the boilers must be a minimum of 17 feet or 5 meters.

4. The apparatus must be placed so that it is not in contact with masonry (walls and floors) metal or earth.

5. When the apparatus is very heavy and needs to be supported by metal or masonry, you must place a 3 ½" thick layer of rubber or wood separating the apparatus from the support.

6. The apparatus should never be painted.

7. Do not install the apparatus closer than 15 feet to magnetic switches (it may cause them to burn out) or to significant magnetic fields (they will hinder proper operation of the apparatus).

8. The copper cells must be removed from the apparatus every 30 days and cleaned with a salt and vinegar solution.

