



PRODUCTION ENHANCEMENT SYSTEMS, LLC

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## **SCALE INHIBITOR PELLETS SIP-100**

SIP-100 functions in three (3) ways:

1. Scale Inhibitor
2. Sequestration
3. Scale Removal

### **SCALE INHIBITOR:**

SIP-100 exhibits what is known as the “threshold effect”. This happens when very small amounts of a scale inhibitor (SIP-100) can help keep large quantities of scalants in solution. The phosphonates in SIP-100 are very effective threshold scale inhibitors. Data shows that one molecule of phosphonate can inhibit 5,000 to 10,000 molecules of scalant. This appears to be done under present theory by the absorption of the threshold agent (SIP-100) on the “growth sites” of the scalant crystal; thereby the growth pattern is altered so that crystals are formed more slowly and are not as likely to clump together to form scaling problems on equipment. They can be considered as distorted.

The effectiveness of SIP-100 varies depending upon conditions such as water saturation, temperature, pH, super-saturation and type of scalant. The phosphonates have been found to be very effective in a wide variety of scale precipitating systems including calcium carbonate, calcium sulfate, calcium phosphate, strontium sulfate, barium sulfate, ferric hydroxide, aluminum hydroxide, copper hydroxide and others.

### **SEQUESTRATION OF SCALE:**

Chelation or sequestration is a process of using a chemical agent to form a stable, water soluble complex with a metal ion. Sequestering is a good method of capturing and holding very low levels of unwanted metals in solution.

Efficiency of sequestration is dependent upon variables such as pH, choice of agents, etc. The best comparison is under actual use of field conditions.



### **SCALE REMOVAL:**

Phosphonates remove metal oxides and scale by forming water soluble complexes with the metals. A major advantage of these products is the speed of removal of metal oxides and scale and they help reduce further corrosion of the metal surfaces by passivation; therefore, SIP-100 is useful in oil and gas systems, boilers, cooling towers, evaporators and other water systems.

### **PRODUCT USAGE:**

SIP-100 dissolves slowly and releases the chemicals into the system. The amount used depends on the nature of each system. Dissolving time is not determined because of the variation in all of the fluid conditions. A loading amount is suggested with small additional amounts weekly or as needed.

Use SIP-100 at a ratio of 2-3 PPM of SIP-100 to the weight of water coming into the system or the total weight of water circulating in the system. Always make allowances for the extra water being added to the system. A special scoop is provided with each container of product sold.

It is often best to slug the system with product and then add regularly to maintain control of the problem.

### **PRODUCT SPECIFICATIONS**

SIP-100 is a white to off-white pellet with a specific gravity of 1.5-1.65. This pellet will therefore fall quite readily in Heavy Brine.

### **PACKAGING:**

40 lb. Poly Pail

### **DISCLAIMER OF LIABILITY:**

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