

## ***What you need to know about Smart Release***



### **Q. How is control achieved with Smart Release Technology?**

A. Smart Release chemistry is a diffusion-based chemistry developed on the premise of osmotic pressure. The osmotic pressure forces the chemistry out of the polymer coating (or membrane) at a consistent rate over a defined time period and applies the chemistry similarly to feeding a liquid chemical slowly and continuously. The diffusion only occurs while the system is running and while the Smart Feeder has flow - when flow stops, osmotic pressure equalizes around the tablets and stops diffusion of chemistry. Once flow is restored, osmotic pressure resumes and diffusion of chemistry continues.

### **Q. How does Smart Release adjust for varying system loads?**

A. The water temperature impacts diffusion rates by about +/-20%. Warmer water during higher load periods (and higher scaling stress) will increase the release rate slightly resulting in higher chemical feed rates. Cooler water temperatures during lower load (and lower scaling stress) conditions will result in slightly slower release rates - providing lower chemical feed rates. It is important to understand that the feed equipment and product must be filled to handle worst case load conditions during the highest load periods.

### **Q. What happens to the remaining time-release coating and is it harmful?**

A. The time-release coating will not dissolve and remains in the Smart Release Feeder at the end of the application period. The remaining coating (also referred to as "Grape Skins") is completely non-hazardous and can be simply discarded in the trash. The active chemical prior to use has a lower toxicity than traditional aspirin thus illustrating the low toxicity level and safety of the product.

### **Q. What are the recommended testing procedures for scale inhibitor products?**

A. Smart Release product levels can be determined by testing active polymer, active phosphonate, or active phosphate. The recommended phosphonate test is the Palintest phosphonate test.

### **Q. What chemistries are available in Smart Release Technology?**

A. Smart Release Technology products are available in three formulations developed for corrosive, medium duty, and high scaling water conditions. Smart Release Biocides, DBNPA and BCDMH, are available in controlled-release membrane technologies. Smart Release boiler products are not currently available. Smart Release closed loop inhibitors are in development, but not currently available.

### **Q. What time-release options are available?**

A. Smart Release scale inhibitor products are available in 30 and 90 day release products. Smart Release biocides are available in 30 day time-release membranes.

### **Q. Do the Smart Release Feeders use tower water or make-up water as drive water?**

A. The Smart Release Feeders use tower water as drive water. The reason for this is the standard water temperature based for the 30 and 90 day release rate is 80 degrees F. Most cooling towers will fluctuate within this temperature by +/-20 degrees. Due to low temperature variability and the control of tower operation, using cooling tower water through a side stream piping system is recommended.

### **Q. How much flow is required for proper release?**

A. Surprisingly low flow rates (0-3 gpm) are required to ensure proper diffusion of chemical. Higher flow rates in general do NOT result in higher release rates. Slightly higher flow rates (3-5 gpm) will help "lift" the tablets and avoid "channeling" within the feeder. However, normal flow rates of 1-3 gpm are generally used resulting in proper diffusion. To reiterate an important point, higher flow rates will not result in higher diffusion rates.

***Environmentally Friendly Solid Water Treatment Chemistry***