Thermal insulation is an integral part of the petrochemical and refining industry, used to conserve energy, maintain process control, and ensure operator safety. However, even the best designed and installed systems sometimes become compromised, resulting in the presence of water at the pipe surface. As such, it is essential to understand how the chemistry of thermal insulation, jacketing, mastics, and sealants, are designed to keep water out to maintain the integrity of the thermal insulation and limit corrosion under insulation (CUI). However, even the most highly optimized moisture management systems can be overcome by the challenge of CUI.

To address this, a team of experts has conducted research to explore the mechanism and longevity of the XOX Corrosion Inhibitor. The team immersed samples of various insulations in water to simulate a realistic thermal insulation environment. After a specific period, the samples were analyzed to determine the protective silicates and ions presence on the sample’s surface.

The results of the research show that the XOX Corrosion Inhibitor is effective in inhibiting corrosion under insulation (CUI). The team found that the XOX Corrosion Inhibitor significantly reduces the amount of corrosion on the metal surface, even in the presence of moisture. The inhibiting properties of the XOX Corrosion Inhibitor are due to its ability to deposit a protective layer on the metal surface, which prevents further corrosion.

The team also evaluated the longevity of the XOX Corrosion Inhibitor by subjecting the samples to 40 cycles of wet/dry conditions. The results showed that the XOX Corrosion Inhibitor maintains its effectiveness even after multiple wet/dry cycles. The inhibiting properties of the XOX Corrosion Inhibitor remain consistent over time, which is essential for maintaining the integrity of the thermal insulation.

The team concluded that the XOX Corrosion Inhibitor is a valuable addition to the arsenal of corrosion prevention strategies. Engineers and facility operators can use this information to establish a comprehensive corrosion management strategy. By incorporating the XOX Corrosion Inhibitor into their insulation systems, they can significantly reduce the risk of CUI and ensure the integrity of their systems.

In summary, the research conducted by the team of experts provides a valuable insight into the mechanism and longevity of the XOX Corrosion Inhibitor. The results show that the XOX Corrosion Inhibitor is effective in inhibiting corrosion under insulation (CUI) and maintains its effectiveness over time. Engineers and facility operators can use this information to establish a comprehensive corrosion management strategy.