CORROSION PREVENTIVES

OVERVIEW
In many coil or parts production processes, application of corrosion preventives is the final step. Protection of the coil or part from rust is critical to the transit or storage of the metal/part. Rust is the oxidation of a metal, and is often costly when it arises. For oxidation to occur, three things need to exist simultaneously to complete the corrosion circuit—a cathode, an anode and an electrolyte. In this circuit the electron flow from the cathode through the electrolyte (usually water) to the anode. Helping your customer avoid rust problems by introducing the proper corrosion preventive will create value in their process. The proper corrosion preventive recommendation is dependent upon the process and needs of the customer.

EDGE SEALERS
Edge sealers are formulated to be applied to the outer-lap of the coil and to the sidewalls. Edge sealers typically utilize volatile components and waxes to provide barrier protection to the coil. Subsequently, this barrier film offers protection from a variety of environmental contaminants, including acid atmosphere. These types of products are generally considered to be very robust rust preventives but often are more difficult to remove when compared to common mill oils. Today, Quaker offers environmentally friendly (low VOC) edge sealer technology.

MILL APPLIED LUBRICANTS (PRELUBES)
Prelubes (i.e. – FERROCOTE® 61-MAL-HCl-1) are rust preventives that also provide enhanced lubrication properties as compared to mill oils. Generally, prelubes will offer better rust protection from humidity as compared to most mill oils and will clean easily too. These types of products contain additives that offer increased hydrodynamic and boundary lubrication. In some cases, these products also contain extreme pressure additives for lubrication.

SLUSHING OILS (MILL OILS)
FERROCOTE® 61A-US and FERROCOTE® EGL-1 are the industry standards for slushing oils. These products embody the overall value expected from a slushing oil, including: excellent humidity protection, stain resistance and removal from the surface. The aforementioned characteristics of a slushing oil are typically the formulating characteristics of all mill oils currently available. However, varying degrees of humidity protection are available in mill oils and are commonly referred to as “enhanced” mill oils. These products offer the same performance characteristics of FERROCOTE® 61A-US, but exceed the overall humidity protection.
CORROSION PREVENTIVES

VANISHING OILS
Vanishing oils are also formulated with volatile components, but contrary to edge sealers they are formulated to leave a very low residual film on the surface. As a result, vanishing oils do not offer the same level of humidity protection or lubrication characteristics as compared to edge sealers, prelubes or slushing oils. However, the very low residual film does allow for wet tempering and short to medium term protection while having very little impact on downstream processes. Quaker does offer products in this category that can be applied by electrostatic oilers, as well as vanishing oils offering light duty stamping lubrication.

DRY FILM LUBRICANTS (HOT MELTS)
Dry films, in particular QUAKER DRYCOTE® (hot melt) technology, are very similar in nature to “prelubes.” They typically offer the same basic characteristics, but due to the fact that they do not migrate with time, and with time or gravity, they offer more consistent performance over longer periods of time. Ultimately, they reduce variability in the customer’s process as it relates to the coating oil/product. Quaker currently has a portfolio of products in this category that can meet the needs of various processes and metals.

CONCLUSION
In general, the product of choice must meet all downstream requirements concerning cleanability, weldability, adhesives/mastics, phosphating, paint, etc. The proper recommendation is dependent upon the entire process and the customer needs.