



4370 MALSBAR Y ROAD · SUITE 200
CINCINNATI · OHIO · 45242
PHONE: 513-731-6350
FAX: 513-731-0678
WWW.GALAXY-ASSOCIATES.COM

NEWS

FOR IMMEDIATE RELEASE – January 14, 2010

Galaxy Associates to Present “*The Importance of Cleaning in Modern Non-Phosphorus Conversion Coatings*” at CCAI MnTAP 2010, February 4, in Eagan, MN.

Galaxy Associates, Inc., a Cincinnati-based supplier of specialty chemical products, is excited to announce that, David Chalk, Ph.D., will present a seminar on “The Importance of Cleaning in Modern Non-Phosphorus Conversion Coatings” at CCAI MnTAP this February. An outline of this presentation can be found below:

Outline: “Importance of Cleaning in Modern Non-Phosphorus Conversion Coatings”

1. A brief history of cleaning and pretreatment

To “clean” something is to render it free from contaminants and pollutants. Cleaning is most efficiently accomplished by solvents, and was until the 60’s/70’s.

2. Influence of regulations and energy market on development of cleaning and pretreatment products and practices

- Pres. Nixon’s establishment of the EPA by Executive Order in 1972 has had the most profound influence on development of cleaning, pretreatment, and coating practices than any other event.
- The EPA has sequentially banned chlorinated solvents, solvents that are moderately to highly volatile, aromatic solvents, and then turned its attention to the Periodic Table.
- Chromium went early, followed by a whole host of useful elements that were deemed either harmful to the environment, toxic to humans, or were significantly suspect in either regard. The most recent trend is towards regulation of phosphorus.

-MORE-



- The results have been dramatic on cleaning and pretreatment, which necessarily became water-based. Chemical companies, washer companies, powder coatings were all developed and started. Caustic, acidic, neutral cleaners and phosphates with chromate rinses became main stream.
- More recently, trends towards non-phosphorus bearing pretreatments and cleaners and neutral pH, environmentally friendly, cool temperature products are on the front burner for almost all research activities.

3. Types of soils – classification and selection of cleaning processes

- Soils on metals are broadly classed as inorganic (oxides, salts, smut, shop soils, machining dusts, weld soot, etc.) or as organic (oils, cutting fluids, rust inhibitors, fingerprints, etc.)
- In general, inorganic soils are best removed by acidic cleaners, and organic soils are best removed by alkaline cleaners. The latest trend towards neutral pH surfactant chemistry is the most interesting for development.
- The more stages available in the washer, the more readily these different approaches can be deployed.
- Cleaning and pretreatment can be accomplished by spray, immersion, wand, or even hand-wipe applications. All have their strengths, and all have room for improvement.
- The primary cleaning “energies” traditionally available are heat, physical impingement, chemical reactivity and time. Newer approaches minimize or eliminate heat energy for savings, so good impingement, modern, well thought out chemical products, and significant time are all necessary for good cleaning.

4. Special considerations for modern coatings

- Transition metal and organic conversion coatings are deposited by virtue of specific sequential chemical reactions. The first maxim to consider is that any contaminants on the surface of the work will immediately stop and/or prevent the desired surface chemical reactions from occurring.
- The modern baths are weakly buffered if at all, and unlike traditional acidic phosphate conversion coatings, are not resistant to drag-in of acids, alkali, and soils. This is why the modern line design emphasizes thorough, clean, and copious rinsing.
- Thorough testing for compatibility and engineering of the process to accept the new processes is essential. The more time spent in preparation and evaluation the better. You really need a supplier or consultant who is demonstrably knowledgeable about the new coatings and processes.
- Each supplier will have their own process specifications which should be followed for best results.

-MORE-



5. Practical application and a case study

- The case study featured a vendor with a “worst case” scenario: no polished water available, a mild steel washer, short vestibules, poor rinsing, and a work surface of dramatically varying quality. A phosphorus restriction loomed.
- An early application transition metal coating featuring a detergent-bearing material yielded very inconsistent results. A new transition metal product and rearrangement of active chemical stages yielded some consistency but still poor results.
- The most dramatic improvement came with adding and enhancing a cleaner stage with counter-flowing rinses in the front end of the process, followed by strict bath parameter controls.
- The customer enjoys 1000 hour salt spray results with 7 ratings under a single coating of powder.

###

For additional information, please contact us or your local Galaxy Representative.

**Galaxy Associates, Inc. · 4370 Malsbary Road · Suite 200 · Cincinnati, OH 45242
1-513-731-6350 tel · 1-513-731-0678 fax · www.galaxy-associates.com**