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Day 1: 3 September 2014

12:45: Welcome & Introduction

Dr Marcel Piens, Coatings Research Institute (CoRI)

13:00 – 13:30: Indonesia - Decorative Coatings Market Outlook 1

Krithika Tyagarajan, Frost and Sullivan, Singapore

With a population of over 250 million people, Indonesia is the fourth most populous country in the world (after China, India and the United States).

However, the Paint per capita still stands at a meagre 3.45kg (as compared to over 10kg in developed markets), thus offering tremendous growth potential over the next few years. With a middle and affluent class of 74 million, expected to double in size by 2020, Indonesia will continue to be the frontier for growth in the SE Asia region.

13:30 – 14:00: VeoVa™ 10 Vinyl Ester Technologies - A New Approach to Design High Performance Architectural and Elastomeric Exterior Paints 42

Claude Nootens, Momentive Specialty Chemicals, Louvain-la-Neuve, Belgium

The vinyl esters of Versatic™ acid (VeoVa monomers) are ideal vinyl co-monomers for the production of latices for high quality water-based coating applications. The highly branched carbon-rich group of the versatate chemical structure provides a high level of hydrophobicity, alkali resistance and UV resistance to the polymers. These properties are key, to developing high performance exterior architectural paints.

The performance benefits of VeoVa monomer in exterior paints will be illustrated by the recent outdoor exposure data, recorded at several locations in Asian countries with challenging climatic and air quality conditions. These data sets highlight that VeoVa vinyl ester based binders can provide equal or superior performance with regard to dirt pick-up resistance, when compared to wellknown high quality acrylic latex benchmarks.

Furthermore, we will discuss our recent developments on VeoVa vinyl ester-based polymers for elastomeric coatings. This work shows that VeoVa vinyl ester-based binders can be designed to meet or exceed the required properties for elastomeric paints in terms of flexibility, non-yellowing and dirt pick-up resistance.

14:00 – 14:30: Advanced Surfactant Technology for VOC Free Coatings 76

Carlos Ilao, Croda Singapore Pte Ltd

Croda offers the expertise and products to develop waterborne alkyd resins for VOC free, high quality trim paints, varnishes and stains. Maxemul advanced surfactant technology for alkyd resin emulsification allows for total elimination of solvents in alkyd-based coatings.

One important market trend in coatings is the move from traditional solventborne coatings to VOC free coatings. Fortunately, waterborne alkyd resins can be formulated via emulsification of the resin using external surfactants, or via hydrophilic modification of the alkyd resin itself, making it water reducible or self-emulsifiable. Films made from emulsified alkyds have lower water sensitivity and better performance than films made from water reducible alkyds.

Through years of experience and collaborative research in this area, Croda has developed the Maxemul 7000 range of anionic and polymeric

surfactants for VOC free alkyd resin emulsification. The surfactants were selected for giving emulsions with small particle size and good shelf life. Waterborne paint was formulated using alkyd emulsions and film properties, such as drying rate, hardness and gloss were found to be comparable to solventborne resin systems.

14:30 – 15:00: Updates of Antimicrobial Technology for Coatings in Asia

87

Wolfgang Lindner, Troy Siam Co Ltd, Bangkok, Thailand.

Modern architectural coatings in tropical environments are an important contribution to the long term protection of valuable construction and healthy living conditions. To keep the coatings in proper condition antimicrobial substances are recognised as indispensable paint additives.

Antimicrobial paint additives are especially well investigated chemicals with a defined targeted efficacy against micro-organisms and proofed acceptable risk for human health and environment.

The evaluation of antimicrobials under the European Biocide Legislation (BPD and BPR) is still ongoing and only a few final assessment reports are available. The presentation will update on the safety assessment for humans and the environment of some important active ingredients for the preservation of coatings.

Based on recent data from outdoor exposure studies and depletion experiments new concepts for film preservatives are under development. It is expected to improve the durability and reduce further the environmental impact of antimicrobials. Recent studies confirmed the prevalent importance of algacidal protection of paints in the outdoor tropical environment. Concepts of slow release algacide combinations for architectural masonry coatings were further developed and provide the paint manufacturer with the most economic option to protect coating films in harsh environments.

15:30 – 16:00: Coating Degradation – Using Accelerated Test Chambers to Correlate With Outdoor Weathering

N/A

Rich Kish, Q-Lab Corporation, Cleveland, USA

This report presents new information on the importance of light, water, humidity, condensation and heat to simulate exterior coating degradation in accelerated test chambers. It looks at outdoor coatings degradation and how it can be replicated in fluorescent and xenon test chambers. It also explores when to use the appropriate test chamber to reproduce various coatings degradation including gloss loss, cracking, yellowing, peeling, fading and colour change.

16:00 – 16:30: Optimizing Dispersant Performance with Synergistic Low Molecular Weight Surfactants

132

Yangping Zhu, Air Products, Shanghai, P.R. China

Polymeric dispersants and wetting agents are widely used in waterborne applications, such as coatings and inks. However, high molecular weight dispersant has a little difficulty to separate all the agglomerates and aggregates during or after the milling process, especially when the pigment loading is very high. It is because the primary particles are easily re-agglomerated during and after the milling process. Some small molecular weight surfactants have synergistic effect with dispersants and wetting agents, which will help the high molecular dispersant immigrate to the unprotected new surface of primary particles during the milling process, preventing re-agglomeration, resulting in better colour development, higher hiding/opacity, shorter mill time, lower dispersion viscosity and long term stability. This article has introduced the mechanism of how grind aid works

for water-based pigment dispersions.

Day 2: 13th September 2013

10:00 – 10:30: Next Generation High Efficient Matting Agents for UV Coatings

16

Khoo Teng Hai, Lubrizol Advanced Materials, Shanghai, P.R.China

Demands on coating materials in terms of cost efficiency, optimised cycle times and emission of volatile organic compounds (VOC) changed significantly during the past ten years. There are several solutions given by the industry to match today's needs on new coating materials. In terms of short cycle times, reduced VOC emissions and outstanding film properties, the radiation curable coatings show great potential. Compared to conventional coatings (ie waterborne 1pack or 2pack systems) the field of radiation curable coatings holds different challenges on the formulation and curing side. Many of these challenges are caused by the curing mechanism.

Especially the formulation of matted clear coats can become an extremely tough challenge to the formulator. In the case of 100% solid coatings it can be complicated finding the balance between: acceptable viscosity for the targeted application method, targeted gloss level and desired film properties (eg scratch resistance, hardness, chem resistance).

To meet these often conflicting requirements implies the need for matting agents that operate via a different mechanism. Lubrizol proposes an alternative matting mechanism to achieve the required balance.

10:30 – 11:00: VOC Free Universal Machine Colorants with Optimized Coloration Concept

33

Dr.George, Leonice S A, Greece

High Performance POS Tinting systems based on VOC - free colorants New legislations on VOC emissions, in many regions globally and increasing demand for environment - friendly products both from consumers and paint manufacturers have forced colorant producers to develop POS Tinting systems based on VOC free colorants.

POS systems based on VOC free colorants is an established technology in Europe for more than a decade now. Also it is the established colorant technology used by global corporations in their worldwide paint activities. Improved low emissions technologies combined with modern Integrated POS Tinting systems in principle deliver High Performance POS Tinting systems with superior advantages compared to the traditional, old VOC containing systems. The outstanding advantages are high tinting strength, high opacity, brilliant colours and minimum impact on coating performance combined with very competitive coloration cost.

11:30 – 12:00: New Anticorrosive Pigments: Zinc-free

62

Wolfgang Wald, Heubach GmbH, Köln, Germany

Well-known for their applications in coil and powder coatings, zinc-free pigments have so far only gained acceptance in niche areas as they tend to be very specific to certain resins and substrates. However, this scenario is changing.

Environmental and price concerns are two key drivers to look deeper into the use of zinc-free pigments.

New research shows that it is feasible to develop a universal zinc-free pigment with higher performance properties and universal applicability. Based on a special calcium phosphate complex and modified with an electrochemically active magnesium compound, the new pigment offers:

corrosion protection without the hassle of labelling, effective inhibition in solvent and waterborne systems, easy handling and cost-effectiveness.

Comparison tests with standard zinc phosphate and modified anticorrosive pigments validated that the new pigment offers a real successful alternative to zinc containing anticorrosive pigments.

12:00 – 12:30: New Binder for Low VOC, Waterborne Direct-to-Metal (DTM) Coatings 104

A Fream, M Secher, C Baude, OMNOVA Solutions, Fairlawn, USA

One of the main technical objectives of resin suppliers is to be able to offer binders that make possible the preparation of coatings combining a low VOC content and performance equivalent to that of the solventborne coatings they are designed to replace. This is particularly true in the field of anticorrosion coatings for metal substrates.

Despite recent innovations, metal substrates are still difficult to protect with waterborne products because of their inherent weaknesses (residual surfactants from polymerisation enabling water migration through the film, rust formation during application, lack of adhesion on non-ferrous metals, etc). Nevertheless, because of environmental and legislative pressures, there is an increasing demand for high quality Direct-To-Metal products able to substitute solventborne technologies such as alkyds.

This paper introduces a new cost-effective concept: an innovative multi-phase particle dispersion binder, based on proprietary "Hydrophobic Dispersion Technology" (HDT), designed for DTM enamel, with the following key advantages: Excellent adhesion on ferrous & non-ferrous metals, high initial gloss and gloss retention, outstanding water resistance and salt spray resistance without anticorrosive pigment.

12:30 – 13:00: Multipurpose additives to address micro / macro foam in water-based paint and coating applications 117

Changsi Pattawa, Troy Siam Co. Ltd, Bangkok, Thailand.

Coating formulators today are faced with difficult challenges to develop environmentally sustainable solutions without adversely effecting coating properties. In particular, one of the more challenging areas is with controlling microfoam in waterbased systems. Some innovative technology has been developed to address foam for spray and high viscosity applications, without compromising coating properties. A study will be presented highlighting the performance of this technology.

14:30 – 15:00: A Unique Surface Additive to Increase Surface Energy of Coating Films and to Improve their Recoatability 146

J Hajas, G Jaunky, M Bessel, M Heekeren, B Weber, BYK-Chemie GmbH, Wesel, Germany

Most surface additives (silicones, polyacrylates etc.) do not change, or more frequently they decrease the surface energy of crosslinked coating films, which may result in recoatability problems. The problems include difficulties like substrate wetting and, in many cases, intercoat adhesion. A new highly branched hydrophilic acrylic polymer has been developed which – unlike other surface additives – is able to raise the surface energy of the dry coating film substantially, resulting in perfect substrate wetting and good intercoat adhesion when recoated. The new additive has been tested extensively in aqueous, solventborne and solvent-free formulations. Highest performance has been achieved in those systems where the additive is slightly insoluble or incompatible: in aqueous systems, or in solventborne systems with lower polarity aliphatic hydrocarbon solvents. Suggested applications include aqueous and non-aqueous industrial primers, primer-

surfacers, basecoats... any coatings which need a better recoatability. As an additional effect, the levelling of the coating films has been also improved. Most promising results have been obtained in baking coatings (coil coatings, automotive OEM coatings).

15:00 – 15:30: New Acrylic and Polyester Polyols for High Solid Transportation Topcoats with Superior Appearance 159

Claude Nootens, Momentive Specialty Chemicals, Louvain-la-Neuve, Belgium

15:30 – 16:00: Gravure Inks Solution from Manual to Automation N/A

Iskandar Bongso, PT Buhler Indonesia, Jakarta, Indonesia

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