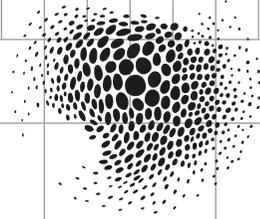


**Nederlandse Vereniging
van Verftechnici (NVVT)**



Bond voor Materialenkennis

Invitation

NVVT Symposium:

Alkyd Resins, 150 years old but still alive and kicking

The Dutch Association of Paint Technicians (NVVT) invites you to attend this symposium to be organized on:

Tuesday, 26st November 2019

Congress Center 't Veerhuis,
Nijemonde 4, 3434 AZ Nieuwegein-Zuid
Website: <http://www.tveerhuis.nl>

Registration	starts at 12.30 hrs. with coffee and sandwiches
Start of the symposium	13.30 hrs.
Closure and drinks	16.45 hrs.

Program

12.30 hrs Reception, registration with coffee and sandwiches

13.25 hrs Opening by P. Geurink – chairman NVVT

13.30 hrs Looking into recycling options for leftover alkyd paints

Jitte Flapper, AkzoNobel

Many half-used cans of paint up on shelves with still a usable amount of paint left in it. Some of this is used later, but a lot is eventually disposed and ends up as waste. Recovery of the raw materials would enable recycling of these, but this process is normally energy consuming and it also destroys part of the value of the paint. Reworking leftovers into a new paint would be a cradle-to-cradle recycling approach, which also retains the value of the product. AkzoNobel has recently launched a wallpaint with a significant recycled content, where this principle is applied. Being able to recycle leftover alkyd paints would add to the sustainability of this product class and prevents waste formation. In this presentation, different options for potential recycling of unused alkyd-based paints will be discussed, and some of the challenges are addressed. To be able to obtain sufficient volume, different paints would have to be mixed. This will come with a change in esthetic properties however, considering for example gloss-grade or colour. But especially from a technical point of view, it has become very difficult to combine different types of alkyd paint. For example the development of lower VOC products, the introduction of alkyd emulsions, and recent developments on alkyd driers have created a diverse landscape of technologies. Trying to combine these into something new has therefore become a great challenge.

14.05 hrs Drying of alkyd paints studied by Dynamic Mechanical Thermal Analysis (DMTA)

Bart Reuvers, DSM Resins

An attractive property of alkyd paints is their ability to 'dry' due to chemical reactions, initiated by contact with oxygen (autoxidation). This process of chemical drying starts after completion of physical drying due to evaporation of water or solvent from a freshly applied paint film. In this lecture it will be demonstrated how Dynamic Mechanical Thermal Analysis (DMTA) can be used to quantify the separate contributions of both physical and chemical drying to the final mechanical properties of an alkyd coating. Monitored by DMTA, drying is reflected by the time evolution of two distinct physico-chemical characteristics: The glass transition temperature (T_g) and the rubber modulus (G^* rubber). T_g is related to the 'hardness' of the coating, as experienced upon indenting a coating with your nail. G^* rubber (being proportional to the X-link density) is related to the resistance of the coating to blocking, imprinting, mechanical impact as well as water absorption. The time evolution of both T_g and G^* rubber has been measured for several alkyds with varying composition. Amongst others, the study revealed that the fatty acid content of the alkyd affects the drying process in an ambivalent way: Negatively, due to reducing the extent of physical drying (determining the initial hardness of a freshly applied coating). But also positively, due to strengthening the process of X-linking. It appeared to be generic for drying alkyd films that the T_g (and, accordingly the hardness) continues to increase over a period of at least several months, while the process of X-linking is mostly already finished within a single day. This suggests that development of 'hardness' due to chemical drying does not originate from the X-linking process, as mostly supposed. More likely, it originates from retarded emission of (low-) volatile components (like aldehydes) created during the

autoxidation of the alkyd. This hypothesis is supported by the time evolution of the weight of drying alkyd films.

14.40 hrs Do performant wood coatings still necessarily mean solventborne? Let's find out with the new generation of alkyd emulsions!

Clément Bazin, Arkema B.V.

Solventborne alkyds are still performant solutions in many applications. However the VOC European Directives in 2007 and in 2010 have forced the switch from solventborne to waterborne for trim, cladding and wood stains architectural coatings. But it is still a technical challenge to recover all the properties from solventborne formulations. Alkyd emulsions, functionalized or not, is a valuable technology for some of the interior or exterior applications. This presentation highlights ARKEMA's work in developing alkyd emulsion performances with enhanced hardness development, whiteness, blocking resistance and durability in gloss paints or wood stains.

15.15 hrs Break

15.35 hrs Oxidatief drogende verf in de praktijk

Richard Hoogstraten

In deze presentatie wil ik ingaan op de verwerking van deze producten door de eindgebruiker: de professionele schilder. Weinig ervaring met het gebruik van moderne oplosmiddelhoudende verfproducten van de grote producenten maar wel regelmatig gebruik gemaakt van oplosmiddel-houdende producten van middelgrote bedrijven. De focus zal liggen op diverse watergedragen emulsieverven. Op deze producten wil ik verder ingaan oa:

- Waarom ik als schilder momenteel de voorkeur geef aan watergedragen, ook buiten.
- Dat ik denk en hoop dat watergedragen de toekomst zal zijn
- Liever alkyd emulsie dan acrylaat in de praktijk
- Punten van zorg bij watergedragen
- Praktijkcase: Project buitenschilderwerk woning Hoogeveen met foto's en uitleg voor- nadelen
- Vergelijk oplosmiddelhoudend – watergedragen; Glansgraad, verwerking
- Leuk: twee nieuwkomers op de markt

16.10 hrs Alkyd resins, some (not so) novel aspects of their drying and emulsification

Ad Hofland

Alkyd resins are as old as the road to Kralingen, or, to put it in its right perspective, the road to Hoek van Holland. Nevertheless their illustrious way of drying has never been fully elucidated. New analyses and characterization methods have seen the light, giving a sparkle of hope to shed more light on this process. No way. ESR (electron spin resonance, the electron equivalent of NMR), with or without spin traps did not help. Neither did photoluminescence. And yes, if you find the right wavelength, time frame and sensitivity, drying alkyds do emit light. But although these studies are interesting from an academic point of view, they do not help an alkyd in drying. In this presentation some of the more detailed aspects of the drying of alkyds will be discussed for instance how they are related to deep frying fish & chips. But the main message will be: "Don't worry how it's done, just let it dry and have fun." . Or, as a Dutch supermarket chain used to say: "Vraag niet hoe het kan, maar profiteer er van".....

16.45 hrs Closure with appetizers and drinks

REGISTRATION FEES

	<i>Dutch companies</i>	<i>Foreign Companies</i>	<i>No vat number</i>
Members BvM/NVVT	free	free	free
Members BvM	€ 61,00 (incl. 21% vat)	€ 50,42 (vat reversed charge)	€ 61,00 (incl. 21% vat)
Non Members	€ 73,20 (incl. 21% vat)	€ 60,50 (vat reversed charge)	€ 73,20 (incl. 21% vat)
Retired and students			€ 30,50 (incl. 21% vat)

ATIPIIC members are offered 50% reduction of the registration fee.

The cash payment has to be done at the entrance of the conference room. For practical reasons neither cheques nor credit cards will be accepted.

REGISTRATION

Registrations are to be made at the latest Thursday 21-11-2019 by e-mail: info@materialenkennis.nl

Your registration will be confirmed. In case you do not receive the confirmation or if you are not able to come please contact the Society for Materials Science as soon as possible.

UPCOMING SYMPOSIA

28-1-2020	Pigments and Fillers
March/April 2020	Brecht meting together with ATIPIIC
26-5-2020	
2/4-9-2020	ETCC2020 in Krakow, Poland
29-9-2020	
24-11-2020	

The board of the NVVT is looking forward to meet you on November 26, 2019!

BOARD OF THE NVVT

Pieter Geurink, chairman
Wil van Meer, secretary
Andre van Linden, treasurer
Michel la Faille
Jaap Akkerman
Dirk Klomp
Martin Bloem
Nico Frankhuizen
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