



1st Afera Global Adhesive Tape Summit

11-15 June 2018, Sheraton Munich Arabellapark Hotel in Munich, Germany

PROGRAMME

TUESDAY JUNE 12, 2018

18.30 – 20.00 **Welcome cocktail Afera Global Adhesive Tape Summit 2018**
Reception area of the conference hotel

WEDNESDAY JUNE 13, 2018

SESSION 1

09.00 – 12.30 WHERE ARE WE

Session Chairman: Evert Smit, Afera TC and Global Tape Summit Chair

09.00 – 09.15

Opening and general introduction Afera

Evert Smit - Lohmann GmbH & Co. KG and Afera TC Chair

09.15 – 09.40

PSTC introduction

Michel J.M. Merckx – President PSTC, American Biltrite Inc.

09.40 – 10.10

CATIA introduction and market overview

Michael Yang - Vice President & Secretary General, China Adhesives and Tape Industry Association (CATIA)

10.10 – 10.40

Taiwan Trends of Functional Film for Adhesive Tape Industry

Mr. S. K. Wang - Yem Chio Co., Ltd.

- TAAT In Brief (Taiwan Regional Association of Adhesive Tape Manufacturers)
- Taiwan Adhesive Tape Industry Overview
- Trends of Film Application in the Tape Sector
- Film Functions in Brief

10.40 – 11.10

Break

11.10 – 11.40

Introduction on JATMA and the Japanese market

Kensei Takahashi – Secretary General JATMA

11.40 – 12.10

Global Market Overview – Tapes & Specialty Tapes

Corey Michael Reardon - AWA Alexander Watson Associates

12.10 - 12.40

REACH 2018 and Turkey REACH update

Mark Macaré - Afera Public Affairs Committee



12.40 – 12.55

Panel discussion

12.55 – 14.00

Lunch

SESSION 2

14.00 – 17.30 MAINTAINING THE CORE

Session Chairman: Ian Grace, Bostik Smart Adhesive

14.00 - 14.25

Efficiency in Converting

Teoman Köksal - A&G Ambalaj San. Tic. Ltd. Sti.

Efficiency is an important factor to make a difference in businesses, especially when those businesses do not create new products to stand out from the competition. The process to become efficient not always mean buying new equipment, but rather to make the most use out of your already current resources. It requires synergy and collaboration with suppliers and internal operations. , where a necessary upgrade might happen across the entire supplier tier and operation channels. This may require cultural (both within a company, or on the supply chain) changes. To achieve efficiency, the mind set has to change from cost per item to operational cost of the item. This is where a company needs to ask, if an item or a step is necessary, is there only one way to assess a situation, how is quality affected (service and product). At the end, converting is the last step before distribution of adhesive tapes. If the process is done wrong, it not only increase operational costs, but will create losses on the entire supply chain, including the end users. Efficiency aims to bring greater good for the entire supply chain.

14.25 - 14.50

Effect of UV curing condition on tape performance

Speaker: Dennis Deng, Dongguang CO-MO Ltd

Author: Cheng-Lien Lin – Dongguang CO-MO Co. Ltd.

UV curing pressure sensitive adhesive (UVPSA) plays an important role in replacing solvent based adhesive under more and more strict environmental rules. Tape manufacturer using UV curing technology can increase process efficiency besides the risk of using solvent and hence, the environmental rule pressure, yet UV curing condition is important on tape performance. In the paper, a systematic work on tape performance and its correlation to curing condition of lamp system, speed, curing intensity, curing energy is discussed, based on the result, curing strategy is recommended.

14.50 - 15.15

High Performance Emulsion Acrylic Technology as solvent based replacement

Ying Ho Lee - Synthomer Deutschland GmbH

Emulsion acrylic pressure sensitive adhesives provide many advantages over solvent based systems, such as lower cost, superior environmental friendliness, higher coating speed, and improved operational safety. While the use of emulsion technology is common in some areas of the tape market the technology has not yet taken hold in the specialty tape segment. Many of these applications still use solvent



(or UV) acrylics due, in part, to the more demanding performance requirements, which typically can't be met by emulsion PSA.

One of the biggest performance gaps between solvent and emulsion PSA is the temperature resistance. We have developed a breakthrough emulsion acrylic technology to close the gap. Different functionalities and crosslinking chemistries were explored to enhance the heat resistance, as well as formulation approaches to broaden the adhesion profile. Extensive testing (DMA, SAFT, high temperature shear, solvent resistance, peel adhesion etc.) were employed to validate the performance of these new emulsions. Our new technology can produce tapes from emulsion acrylics that have best-in-class performance, meeting or exceeding the performance of established market leading specialty tapes from other technologies.

15.15 – 15.20

Panel discussion

15.30 - 16.00

Break

16.00 - 16.25

Liquid instant adhesive versus pressure sensitive tapes

Dr. Kerstin van Wijk - HENKEL Adhesives Technologies

16.25 – 16.50

Comparison of pressure sensitive tapes and cohesives

Tyler Derus - Bostik Smart Adhesive

Pressure sensitive tapes and cohesives can find utility in similar applications such as packaging, overwrap, and film adhesion. High value, niches exist for cohesives in areas like flexible packaging and the closure of nutraceuticals or snack bars. While pressure sensitive adhesives have the ability to bond quickly to a variety of substrates, cohesives lack surface tack and only adhere to themselves. Coating of cohesives may also require surface treatment of films to achieve proper wetting. This presentation will describe the similarities and differences of cohesive and pressure sensitive adhesives, including formulation, bond strengths, processing, storage, and end-use applications.

16.50 – 17.15

Use of Rheology in Formulation Development

Danny Beekman – Kraton Chemical B.V.

Ability to quickly develop new adhesive formulations remains one of the challenges for adhesive manufacturers. Changing regulations, withdrawal of raw material grades require requalification of existing formulations. The easiest way, to try a new raw material as a drop-in replacement of an old one, does not always work due to various chemical effects. Use of state-of-the-art tools like Dynamic Mechanical Analysis (DMA) can help formulating in a systematic way. Being able to see the effect of slightest formulation changes on the end properties greatly speeds up the product development and shortens the time to market. In our presentation, we explain how DMA approach can be used in the adhesive industry.

17.15 – 17.40

Comparison of Quantitative High Temperature Testing Methods for Silicone Pressure Sensitive Adhesives

Beth Kelley – The Dow Chemical Company



Silicone Pressure Sensitive Adhesives provide high temperature resistance. A comparison will be provided of unique high temperature testing methods, including high temperature peel and thermal gradient hot plate. Silicone PSAs were evaluated using an Instron equipped with environmental chamber to test in situ high temperature peel. The thermal gradient hot plate provides a linear temperature profile, which allows for a wide range of temperatures to be studied with one sample and one test. Silicone PSAs were evaluated over the selected temperature gradient to compare their performance.

- 17.40 – 18.00 **Panel Discussion**
- 19.00 Gathering lobby hotel
- 19.30 **Conference Dinner at Restaurant " Spatenhaus an der Oper "**

THURSDAY JUNE 14, 2018

SESSION 3 09.00 – 12.30 REACTIVE DRIVERS
Session Chairman: Danny Beekman, Kraton Chemical B.V

09.00 – 09.25 **Detection of smell creating substances in acrylic adhesives**
Philipp Denk - Fraunhofer-Institute for Process Engineering and Packaging IVV

09.25 – 09.50 **Tailored surface modification of substrate by atmospheric plasma for improved compatibility with specific adhesive**
Nicolas Vandencastele - Coating Plasma Industrie

It's a common practice in the polymer industry to chemically modify the surface of materials to improve their wettability. Indeed, the low surface energy of most polymeric materials prevents good anchorage of adhesive or inks to the surface. The most common surface modification includes primer coating, flame and corona treatment. Primer coating has the advantage of being able to select the chemistry of the coating but is probably the most expensive of the 3, furthermore environmental legislation sometimes restricts the use of some primers. Flame and corona treatment do not pose environmental issues but the chemistry cannot be tuned. Both technics are based on surface oxidation of the material which is a controlled destruction of the surface. Overtreatment will lead to surface damage, creating a low cohesion layer at the surface of the substrate which is obviously very bad for adhesion properties. Corona treatment also suffers from an ageing effect, the effect of the treatment decreases over time.

09.50 - 10.15 **PVC tapes for good environment and ecology**
Dr. Chi-Lin Kao - Four Pillars Enterprise Co., Ltd



PVC Tapes are widely used in many applications, such as electric insulation, construction, protection, car wire harness, label stocks. But PVC tapes contain polyvinyl chloride polymer which will produce hydrogen chloride and dioxin gas. Using high temperature incinerator can eliminate the evolution of dioxin gas.

PVC tapes also contain plasticizers, stabilizers, flame retardants, and VOCs. Some of these ingredients can interfere with hormone system, cause cancers, birth defects, and other developmental disorders. Environmental and legislative pressure have driven the PVC tape industries to concentrate their efforts to reduce the risk of the danger.

For a long time, PVC tape makers used solvent base adhesives for their product. VOCs became the issue to the environment. They tried to use emulsion latex to replace it, but still need to overcome the difficulties for some applications.

Now, the PVC tapes become more ecological and environmental friendly. We still expect a brand new product can replace completely.

10.15 - 10.40

How to lower your green risk in global market?

Awa He - SGS-CSTC Standards Technical Services Co., Ltd

Tape product is widely used in different industries and human life. The importance of product quality and performance are well recognized, while the market risk of the Green issue may be underestimated or even be neglected. This speech will cover the Green market risk of tape and how to avoid the risk.

10.40 - 11.00

Panel discussion

11.00 – 11.30

Break

11.30 - 11.55

New Applications of Acrylic PSA and Tape in Mobile Industry

Guoqing Li, President of Sanxin Chemical (Shanghai) Co., Ltd.

The development and production of tape products are updating in pace with the mobile phone. The application cases and technical requirements of the corresponding adhesive products applied in mobile phone components (such as mobile phone protection film, waterproof foam, thermal conductive tape and shading tape etc.) will be analyzed, and the future development direction of the adhesive products in the mobile phone industry will also be given in this presentation.

11.55 - 12.20

New converting methods – laser die-cutting

Peter Harendt - Lohmann GmbH & Co.KG

12.20 – 12.45

Cutting Edge approach to control odor in HMPSA for tapes applications

Jeremie Peyras & Amandine Rafaitin - Bostik Smart Adhesive

Odor Detection is a very complex physiological mechanism but being part of our five senses, it is essential to our everyday life. Smell detection involve more than 300 genes in our body, there is little probability that two humans ever perceived odor the same way. Add regional and cultural perceptions to the mix, it becomes a real



challenge to agree on an odor qualification. Today the odor control demand is a real trend for many applications like hygiene, building or transportation. This presentation will present the process Bostik has implemented to qualify and quantify odor of substances using a panel of odor testers, training them to identify and classify odors using a common language. This real and effective expertise paired with the latest analytical test methods lead to the best chance to determine which molecule(s) is at the origin of the odor. Bostik brings today to the tape industry this knowledge by using this odor knowledge combined with his HMPSA formulation expertise.

12.45 - 13.00

Panel Discussion

13.00 – 14.00

Lunch

SESSION 4

14.00 – 17.30 PRO ACTIVE DRIVERS

Session Chairman: Ralf Rönisch, Coroplast Fritz Müller GmbH & Co. KG

14.00 - 14.25

ERPC monitoring report – latest trends in paper recycling: the influence of Packaging tapes in paper recycling

Hermann Onusseit - IVK

14.25 - 14.50

Reactive hotmelt PSA

Ian Grace - Bostik Smart Adhesive

14.50 - 15.15

(Semi)-Structural Bonding Tapes Based on Polyurethane Dispersions

Annette Kelsch - Lohmann GmbH & Co. KG

15.15 – 15.30

Panel discussion

15.30 – 16.00

Break

16.00 - 16.25

Fatigue evaluation of bonded joints with a structural adhesive and a pressure sensitive adhesive

Christof Nagel, Fraunhofer IFAM

Pressure-sensitive adhesive (PSA) tapes are attractive for their fast and simple application as well as for the opportunity of removal and repair. Therefore, the use of PSA has also attracted attention in the field of bonding structural parts, which requires a durable and reliable transmission of loads.

This has up until now been a field of application for structural adhesives, which form a durable bond by mechanisms as chemical crosslinking, solvent evaporation, or cooling from the liquid state.

A typical PSA can clearly not be expected to achieve the strength and durability level of a structural adhesive. There are, however, numerous potential applications which do not involve high loads or extreme climatic conditions but which, in case of failure, may cause harm to persons or goods. If it could be shown how a PSA joint should be designed in order to maintain load transfer over the service life, a new application field for this class of adhesives would open up.

The question arises how a PSA joint should be designed in order to fulfil the operating conditions over service life. PSA's are usually characterized by their shear



and peel resistance as well as by their initial tack. This is however not sufficient to estimate deflections or the probability of joint failure under complex loading conditions.

An example of a structural bond will be presented, in which stress invariants and critical plane models were used to describe the fatigue properties measured under multiaxial loading states. Similar measurements were performed on a set of PSA joints. It was found that, although the strength was on a lower level, the PSA joint properties could be described by the same type of model. It is therefore suggested that fatigue models which are used for structural joints may be applied to PSA if properly modified based on tests and model parameter estimation.

16.25 - 16.50

Polyolefin foams for semi-structural flexible bonding applications

Satish Palika - Sekisui Alveo AG

With continuous development of innovative designs in industrial, transportation and construction applications, there is an increasing demand for innovative solutions in the field of hybrid bonding involving multi-material substrates. Flexible bonding is one of the desired methods used to realize such hybrid bonds. Polyolefin foam tapes, because of their varying flexibility, are of high interest to realize such designs into reality. Not only the flexibility of foam tape, but also the forces acting at the bonding line are of high importance. This presentation will focus on polyolefin foams for such flexible semi-structural bonding applications and mechanical forces acting at the bond line and measurement of such forces with non-conventional test methods for foam tapes.

16.50 – 17.15

Optimized RFID Adhesive Design for IoT, Using Rheological Principle

Mr. Julian Chang - Tex Year Industries Inc.

RFID (Radio Frequency Identification) uses radio frequency to transfer data between reader and movable items. It can be considered as intelligence bar code labels widely used in access badges, inventory management, carton and pallet labels, retail Item tag, etc. Pressure sensitive adhesive is a must in RFID labels industry as a quick and convenient method to stick the labels to items need to be identified.

Hot melt pressure sensitive adhesive with easy and flexible processing properties and good bonding strength to items of different material allows us to quickly adjust the characteristics of RFID label according client's request.

The composition of HMA PSA may consist of TPR, APAO, mPo, tackifiers, plasticizers, antioxidants and other raw materials. For HMA to respond to various demands of adhesion applications, process conditions, and, most important, cost effectiveness, enormous flexibilities are available for material choice, which adds complexity of adhesive design. A methodology of adhesive design based on rheology was developed to shorten the product development cycle time and to provide customers with a full spectrum HMAs for various application.

This paper illustrated how to use the rheological principle to (1) first identify the characteristics of the PSA, such as storage and loss moduli, G' and G'' , at bonding and debonding rates and correlate them to the adhesion performance; (2) secondly, fine tune the adhesive T_g at cutting frequency to ensure the adhesive has good



converting properties; (3) check and adjust the flow properties of the adhesive for coating process. This paper demonstrated the developed rheological methodology is a fast and reliable tool for adhesive design.

17.15 – 17.40

Adhesive material applied for electric vehicle battery

Dr. Weibin Chen – Technical Advisor CATIA, member of PSA sub-committee of the China National Standard Technical Committee

With the development of new energy automotive industry, electric vehicle battery (EVB) is becoming more and more important. Adhesive materials for EVBs also play a crucial role in the manufacturing of EVBs. This paper introduces the solution of adhesive materials for various EVBs' application, and also the latest construction and development of industrial standards in China for adhesive materials for EVBs.

17.40 – 17.55

Panel Discussion

17.55 – 18.00

Wrap-up/closing

FRIDAY JUNE 15, 2018

08.30 – 09.30

Introduction Neenah in meeting room of our conference hotel

09.30

Leave for Neenah Bruckmühl

10.30 – 12.30

Mill tour

12.30 – 14.30

Lunch in a typical Bavarian restaurant nearby