

PROGRAMME

MONDAY, 4 APRIL 2022

12.45 – 13.45 **Buffet Lunch**

13.45 **Opening** by Reinhard Storbeck (Afera Technical Committee Chairman)
13.50 **Welcome** word from Afera's President **Evert Smit**

SESSION 1 **14.00 – 15.20 WHY TAPES?**
Session Chairman: **Reinhard Storbeck** – tesa SE

14.00 – 14.40 **Made to stick – a general introduction to tapes**
Evert Smit – Lohmann GmbH & Co. KG

Business books have adopted terms like "stickiness", "bonding" and "made to stick", although they don't discuss applications in bonding technology. What magic is Pressure Sensitive Adhesive Technology creating in our everyday life? Why are surfaces made to stick and why do some bonds not survive? A key to making an idea sticky is to tell it as a story. This presentation tells the story of "adhesive tapes", their construction and their applications.

14.40 – 15.20 **Introduction pressure sensitive adhesive tape technology**
Caroline Sperling – tesa SE

The cornerstones of tape performance are peel, creep and tack. These features are relevant for many application-related properties. This presentation provides a survey of the most important relationships between physical performance and application properties. The lecture will align adhesive tape technology available with the demands of today and tomorrow's industrial processes.

15.20 – 15.40 **Break**

SESSION 2 **15.40 – 17.45 TAPES DECONSTRUCTED (first part)**
Session Chairman: **Reinhard Storbeck** – tesa

15.40 – 16.20 **The World of Acrylic PSA Solvent Based and UV Hotmelt**
Anja Schneider - Henkel

This presentation will take you on a journey through the world of acrylic PSA with the focus on solvent based as well as UV Hotmelt technologies. We start with a short overview on related markets, adhesive technologies and performance characteristics, before we dive deeper into the chemistry behind. You will learn how such adhesives are designed to meet technical requirements and the applicability on converting lines of the industry.

16.20 – 16.40 **Fundamental emulsion polymerisation for high performance water based pressure sensitive adhesives.**
Dr. Katja Greiner - Synthomer Deutschland GmbH

Water based acrylic adhesives are commonly used in pressure sensitive adhesives in tape and label applications. Emulsion polymerisation is versatile when it comes to designing adhesives with the right performance for a broad variety of applications, ranging from very soft and sticky adhesives to adhesives with a very high shear strength. This presentation covers the introduction to fundamental emulsion polymerisation, and how the adhesive performance can be influenced by the right choice of monomers, emulsifiers, functional comonomers as well as formulation into a coater ready adhesive using wetting agents, defoamers and crosslinkers or thickeners to obtain good performance in the application and good runnability on the coater line.

- 16.40 – 17.25 **Panel discussion with speakers Session 1 and first part Session 2**
- 18.30 **Welcome Cocktail**
- 20.00 **Free Evening**

TUESDAY, 5 APRIL 2022

SESSION 2 **09.00 – 13.00 TAPES DECONSTRUCTED (second part)** Session Chairman: **Martijn Verhagen** – Lohmann

09.00 – 09.30 **Chemistry of hotmelt PSA formulations**
Jarno Weemers – Eastman Chemical Middelburg B.V.

An overview of the chemistry of several PSA formulations in which tackifying resins are used will be presented. This includes styrene block copolymers (SBCs), natural rubber and polyolefins. Tackifier resins discussed will include hydrocarbon resins and rosin resins, as well as their modifications. Tools to characterise these types of resins will be given, making it easier for formulators to choose the right resin for the right application. The interaction and compatibility of tackifying resins with several polymers will be discussed, focussing on block copolymers and their use in HMPSA formulations.

09.30 – 09.55 **An introduction to Silicone-PSA's and Fluorosilicone Release Coatings**
Deana Dujardin – The Dow Chemical Company

Silicones are best known in the self-adhesive market as release coatings, but there are also silicone-based Pressure Sensitive Adhesives (PSAs). Silicones are used in a variety of tape applications due to their unique properties and these are linked to their molecular structure. This paper will look at the exceptional properties of silicones and its benefits in a wide range of pressure sensitive adhesive applications. Additionally, the use of Fluorosilicone Release Coatings, which are required for easy release of silicone pressure sensitive adhesives will be discussed.

09.55 – 10.20 **Viscoelastic backings for high performance tapes**
Dr. Achim Boehme – 3M

tba

10.20 – 10.45 **Polyethylene foams as backing material for technical tapes**
Lukas Berger – Sekisui Alveo

Polymeric foams and polyolefin foams in particular are widely used in the industry to produce a large range of tapes for industrial, household, electronic, medical and construction applications. This presentation will give a short outline on the production process of polyolefin foams, followed by an overview on physical and chemical properties of such foams. Depending on the density and the composition, the properties can be tailored to meet the requirements of the application, so the foam is suitable for e.g. a sealing tape, a fixation tape, a high performance mounting tape or an ECG electrode. Particularities which need to be taken into account when producing a foam tape will also be considered.

10.45 – 11.15 **Break**

11.15 – 11.35 **Polymeric films for technical tape applications**
Dr. Ingo Neubert – tesa SE

The backing material of the tape determines its mechanical properties (like conformability, stiffness, tensile strength ...) as well as its application-related properties

(like thermal stability, UV stabilization, optical properties ...). Choosing the best backing material is therefore crucial for the final tape application. This presentation will provide an overview of different polymeric films regarding their specific properties and some typical applications. It will also point out features of manufacturing and processing of the backing materials. Additionally, some aspects of cloth and non-woven backing materials as well as of sustainable backing materials will be discussed.

11.35 – 11.55 **It's not tape without a substrate - or how to make paper**
tba

11.55 – 12.15 **Chemistry of release coatings**
Jürgen Pomorin – Evonik Operations GmbH

Most self-adhesive products like labels and tapes require a release coating to protect the adhesive layer prior to its use. The release coating usually comes on a carrier called the release liner. Self-adhesive tapes may have a release layer on the backside. The release performance contributes substantially to the conversion properties of a self-adhesive product and therefore require attention. Today, various release systems are available, dominated by silicone types. The aim of this paper is to explain the main differences between common release systems with a view on chemistry and the required coating and curing technology.

12.15 – 13.00 **Panel discussion with speakers second part Session 2**

13.00 – 14.00 **Lunch**

SESSION 2 **14.00 – 14.25 TAPES DECONSTRUCTED (third part)**
Session Chairman: **Anne-Marie Klink** – 3M

14.00 – 14.25 **Release coatings applied**
Michael Ortner – Mondi (Functional Paper & Films Release Liner segment)

In addition to the many release chemistries available, there are also several coating methods, coating thicknesses and a plethora of substrates from which a selection can be made. In this paper, you will be given an insight into why one combination of substrate and silicone better fits a specific application than another. Considerations such as processing speed, temperature and environmental conditions will be taken into account.

SESSION 3 **14.25 – 16.30 TAPE PRODUCTION**
Session Chairman: **Anne-Marie Klink** – 3M

14.25 – 14.50 **Co-rotating twin screw extruder (ZSK) for continuous production of adhesives and sealants**
Markus Fiedler – Coperion GmbH

Explanation of the modular and highly flexible Setup and Working principle of a closely intermeshing co-rotating twin screw extruder (ZSK) in general. Technical features to overcome borderlines such as low bulk density fillers, bale material, remaining air content in the adhesive as well as necessary residence time and cooling capability for reactive systems will be introduced. A continuous way of production of adhesives and sealants on a co-rotating twin screw extruder (ZSK) will be pointed out by examples. Prospects of our Test-Lab in Stuttgart for feasibility studies and scale up trials to attend and support our customers on their way from batch process to continuous process.

14.50 – 15.20 **Coating and drying of substrates**
Harmen Rooms - Coatema Coating Machinery GmbH

The huge variety of different coating applications ranging from highly uniform optical films to mechanically rugged protection layers require coating thicknesses between some 10 nm up to some mm. Moreover the rheological parameters of the coating liquids may vary from high viscous pastes to fluids more fluent than water. No single coating technique is fit to cover this full range of applications.

Different coating techniques will be presented giving a short explanation of their function and summarizing their respective pros and cons.

Especially slot die coating will be emphasized as slot dies frequently replace other techniques because of their unique advantages to be a closed and pre-metered system. Most recent developments in intermittent coating (start-stop-coating) will be shown.

In almost any case the coating liquid has to be cured or dried after coating. Whilst curing (e.g. by UV if applicable) is usually no big issue, drying may be rather complicated and expensive. Different drying techniques are presented and their applicability is discussed.

15.20 – 15.45

Insight tape conversion technology

Peter Harendt, Lohmann GmbH & Co.KG

For the final users, one of the key advantages of tapes is the ability to do pre-converting in customized designs. Like slitting large rolls into smaller ones fitting the applicators, cross-winded spools to improve efficiency, and customer-specific die-cuts that fit the final design. With this, the highest level of qualified application process is assured by pre-defining the bonding areas in thickness, width and design. An overview of converting technologies, per tape, will be given: slitting, laminating, spooling, laminating and different die-cutting technologies.

15.45 – 16.25

Panel discussion with speakers third part Session 2 and Session 3

19.00

Conference Dinner

WEDNESDAY, 6 APRIL 2022

SESSION 4

09.00 – 12.15 TAPE USE & TESTING

Session Chairman: **Ian Grace** - Loparex

09.00 – 09.45

Modern surface treatment methods

Prof. Dr. Andreas Gross – Fraunhofer IFAM

This lecture gives an overview about surface treatment methods enlarging the adhesion of (pressure sensitive) adhesives on several materials surfaces. Especially plasma treatments show an excellent influence. Therefore their different modes of functioning will be explained using examples. Economical and ecological aspects will also be regarded as possible fields of application in the future.

09.45 – 10.15

Forget about your thumb: How to test a tape in a more reliable way

Marko Beitmann – Coroplast Fritz Müller GmbH & Co. KG

Characterisation of tape performances is much more difficult compared to measuring the length of a screw, e.g. several factors have a significant influence on the final properties of tapes. This session will cover the most important test methods, presenting globally harmonised GTF standards as well as tests that are used on a more international level like Afera, PSTC and JATMA. Dos and don'ts will be discussed and several real-life examples of tape tests from different industries will be presented. After this lesson, you should have a better understanding of the potentials and the limits of tape testing – and hopefully you will use your thumb less often.

10.15 – 10.35

The Afera Flagship Sustainability Project

Pablo Englebienne – Regulatory Affairs Manager – Afera

Sustainability is a major driver for all aspects of the adhesive tape industry. The Afera Flagship Sustainability Project (AFSP) is an initiative of the adhesive tape value chain to contribute to achieve the goals of the European Green Deal. In this presentation we will update members about the progress of the three workstreams of the AFSP on the development of harmonized calculation methods, optimizations in waste management and advocacy activities.

10.35 – 11.00

Break

11.00 – 11.25

Regulatory update

Pablo Englebienne – Regulatory Affairs Manager - Afera

The last years we have seen a whirlwind of new regulations and initiatives in areas relevant to the adhesive tape value chain. The European Green Deal, with major strategies like the Chemical Strategy for Sustainability and the Circular Economy Action Plan, is putting additional pressure to increase the sustainability of the complete value chain by optimizing the use of resources, reducing waste and avoiding hazardous substances. In this presentation I will give an overview of the most significant recent developments and provide an outlook into what to watch out for in the near future in European policies.

11.25 – 11.55

The versatile world of pressure sensitive tape.

Michel Sabo - Nitto

Pressure sensitive adhesive tapes are used for a variety of applications in different markets. They have multiple functions going from protection of sensitive surfaces, masking during a paint job, processing tapes, medical bonding different surfaces The type to be used depend on the job to be done. Pressure sensitive tapes have to be considered as functional sheet having different functions than just a sticky material.

11.55 – 12.25

Panel discussion with speakers Session 4

12.25 – 12.30

Closing/Wrap-Up by Reinhard Storbeck

12.30 – 13.30

Lunch