



## Thermoplastic Elastomers World Summit 2023

**28 – 29 November 2023 | Amsterdam, The Netherlands**

### AGENDA

#### Day One – Tuesday 28<sup>th</sup> November 2023

08:00 Registration and morning refreshments
08:35 Chair’s opening remarks, <a href="#">Giuseppe Fiandaca, CEO, Polyneers GmbH</a>
<b>SESSION 1: THE FUTURE OF TPE RECYCLING AND REDUCING YOUR CARBON IMPACT</b>
<p>08:45 <b>New Trend in Elastomer Industry- Ultra Low to Negative PCF TPEs</b>          As industry is looking into ways to control the carbon impact of their product, we will talk about a new product development approach in the TPE world, determined to help customers reach net zero Product Carbon Footprint (PCF) commitments.  <a href="#">Gaurav Kumar, Product Manager, Avient</a></p>
<p>09:15 <b>TPS as a solution to circular design: a recyclability assessment</b>          Due to its thermoplastic nature, Thermoplastic Polystyrene Elastomer (TPS) based materials offer significant advantages over other elastomers in terms of recyclability, making them a viable choice for circular product design. Styrenic block copolymers, when used in their pure form, can effectively enhance the mechanical properties of recycled plastics by either compatibilizing impurities or improving impact strength<sup>1</sup>. In collaboration with a customer, Kraton conducted an assessment to evaluate the impact of TPS compounds on recycling processes. The focus of this study was to examine the compatibility of TPS compounds with the polypropylene (PP) recycling stream. Various compounds were tested in different PP resins, following the RecyClass2 protocol for PP containers. The study revealed that TPS demonstrates compatibility with the PP recycling stream, particularly for the most relevant properties associated with container applications. Our findings shed light on the positive effects of TPS in the context of PP recycling. Additionally, we will provide insights on the RecyClass protocol and its relevance to the study's outcomes  <a href="#">Lennaert Klerk, Regional Technical Manager – Europe, Kraton Polymers</a></p>
<p>09:45 <b>Circular feedstock Queo™, Bringing the advantages of bio renewable and chemically recycled feedstock to Queo™ Plastomers and Elastomers</b>          The topic of the presentation is bringing the advantages of bio renewable and chemically recycled feedstock to Queo™ Plastomers (POP) and Elastomers (POE). The problem of non-availability of pure post-consumer POP or POE is explained and how, using renewable feedstock, this can be circumvented with prime quality renewable alternatives. Bio renewable and chemically recycled feedstock are treated, as well as the mass balance model.  <a href="#">Edwin Verdurmen, Application Marketing Manager Concentrates and Polymer Modifiers - Advanced Products, Borealis Plastomers B.V</a></p>
<p>10:15 <b>The future of mechanical and chemical recycling of thermoplastic elastomers</b>          One of the most important subjects under discussion today, is the recycling of raw materials. While plastics and rubbers are in general holding the world’s attention, very little attention is</p>



# THERMOPLASTIC ELASTOMERS WORLD SUMMIT

currently being paid to thermoplastic elastomers. This presentation will examine two markets involved with the recycling of TPEs, namely automotive and packaging. This presentation will propose which particular processes will suit each individual TPE and what kind of growth can be expected to be achieved in the next five years. The contrast will be made between automotive's lead over packaging and suggest which particular recycling processes will likely be used in both industries. The overall purpose of this presentation is to examine the opportunities and problems that recycling will present to TPE markets, in the next few years.

[Patrick Ellis, Consultant, Smithers](#)

10:45 Networking break

## SESSION 2: MATERIAL AND APPLICATION UPDATE

### 11:30 **Plastics Beyond PEF: Next generation bio-based thermoplastic polyester elastomers based on FDCA**

(i) briefly introduce the renewable carbon concept as a guiding principle for future plastic production and then (ii) highlight our activities in the field of thermoplastic polyester elastomers (TPEE) based on biogenic 2,5-furandicarboxylic acid (FDCA). One important issue addressed in the talk is the crystallization behavior of the bioTPEEs and how they compare to petro-based TPEE grades. The crystallization studies will be complemented by mechanical properties.

[Dr. Daniel Zehm, Research Scientist, Fraunhofer Institute for Applied Polymer Research IAP](#)

### 12:00 **Driving solutions with metallocene polybutene-1 elastomers for tomorrow's TPE applications**

Metallocene polybutene-1 elastomer blends with polypropylene yields interesting mechanical, optical and low emission characteristics, aiming to replace incumbent elastomeric materials in a variety of applications.

[Patrick van Beek, Marketing Manager PB-1, LyondellBasell](#)

### 12:30 **An investigation of the mechanical properties of thermoplastic Elastomers (TPE) under dynamic mechanical loading**

Substituting TPE for conventional elastomers in various applications is a typical example of leveraging their recycling capabilities. Due to their different polymer structure, TPE are limited in mechanical loaded applications. Especially under dynamic mechanical loading the material behavior differs to conventional elastomers. In order to use TPE in dynamic applications, it is necessary to understand their limitations. Therefore, the purpose of this research was to analyze material limitations of TPE under dynamic loading. Consequently, test specimen according to DIN ISO standards were manufactured with injection molding. In following cyclic tests, the dynamic stiffness was used to evaluate the materials. The development of the dynamic stiffness was observed for several TPE. Especially the possible load level of the materials was investigated.

[Alexander Schlede, PhD student/ research associate, University Duisburg-Essen](#)

13:00 Networking lunch

## SESSION 3: AUTOMOTIVE THERMAL MANAGEMENT CHALLENGES AND SOLUTIONS (JOINT SESSION SILICONE)

Chair: [Dr. François DE BUYL, R&D/TS&D Fellow - Dow Mobility & Transportation, Dow Silicones](#)

### 14:15 **New challenges for e-mobility**

[Roberto Molteni, Application Development, ALLOD Werkstoff GmbH & Co. KG](#)

14:45 <b>TPE for future electrified vehicles and sustainability</b> <a href="#">Pierre Furtwengler, Technical Polymer Specialist, Renault Group</a>
15:15 Networking break
16:00 <b>SILASTIC™ Liquid Silicone Rubber for FR Rated Automotive Components</b> <ul style="list-style-type: none"> <li>▪ Electrification in Vehicles – contact with flame-retardant rated Thermoplastics</li> <li>▪ Stability of Silicone Elastomers – degradation signals via FR by-product's from TPs</li> <li>▪ Solution – new Silastic™ LSR system providing stable sealing performance</li> </ul> <a href="#">Dr. Michael Backer, Senior Research Scientist, Dow Silicones Deutschland GmbH</a>
16:30 <b>Sealing Requirements for High Voltages in Automotive</b> <a href="#">Thomas Bolte, Global Product Line Manager Sealing, Aptiv</a>
17:00 Chair's summary and end of day one
17:15 <b>Networking drinks reception (joint with Silicone Elastomer World Summit)</b>

## Day Two – Wednesday 29<sup>th</sup> November 2023

08:30 Registration and morning refreshments
09:00 Chair's opening remarks, <a href="#">Stephanie Waschbüesch, TPE Network Associate &amp; Communication, German Rubber Manufactureres Association (wdk)</a>
<b>SESSION 4: INNOVATIONS FOR HEALTHCARE AND THE BIOPHARMA INDUSTRY</b>
09:10 <b>An overview of materials for single use systems in the Biopharma Industry</b> The Biopharmaceutical market is experiencing remarkable growth, with a compound annual growth rate (CAGR) of approximately 11%. This surge is attributed to the increasing demand for efficient manufacturing, storage, and transportation solutions for Biopharmaceuticals. Specifically, single-use systems have gained substantial traction in addressing these requirements. Notably, the fluid transport applications within these systems heavily rely on two key materials: thermoplastic elastomers (TPEs) and silicones. This presentation aims to provide a comprehensive overview of the diverse materials employed in the Biopharmaceutical industry, highlighting their specific applications. Moreover, the focus will be on introducing a groundbreaking low spallation TPE, a remarkable innovation that holds significant promise for the Biopharma sector. <a href="#">Beate Ganter, Regional Marketing Manager Healthcare, Momentive Performance Materials</a>
09:40 <b>Biobased TPEs for a sustainable health care system</b> The healthcare sector is responsible of up to 5% of a country's total carbon footprint. Plastics are widely used and provide safe and lightweight solutions, but significantly contribute to the footprint and are not recycled. Biobased plastics are an energy efficient and truly circular solution for many of the single- and multi-use medical products. This presentation provides an overview of biobased plastics and applications, the potentials in recycling and a new 100% biobased medical grade TPE. <a href="#">Vinzenz Nienhaus, CTO, Products and Processes, Biovox</a>

**10:10 Innovative hydrogenated styrenic thermoplastic elastomer “S.O.E.TM” for medical tubing application**

This presentation will give an Introduction of Asahi Kasei’s hydrogenated styrenic thermoplastic elastomer “TUFTEC™” and “S.O.E.™” and look at Our solution for medical tubing application; S.O.E.™ for medical tubing application. The presentation will look at tubing moldable without plasticizers; excellent kink resistance; good touch feeling like PVC; good transparency; adjustable hardness and low drug absorption property.

[Shinichi Fukuen, Manager, Asahi Kasei Corporation Synthetic Rubber Development Dept.](#)

10:40 Networking break

**SESSION 5 : LATEST TPE TECHNOLOGY AND PROCESSING UPDATES**

**11:25 Tailoring of SuperCritical Fluid injection technology, through machine construction and thermoplastic elastomer material**

[Pacôme Tomietto, Materials Engineer, Footwear Industrial Division, Decathlon](#)

**11:55 Sustainable TPE Plant Operations through Advanced Process Technology**

[Dr Walter Ramirez, CEO and Founder, Innventik S.L.](#)

12:25 Networking lunch

**13:30 Development of 3D Printing Technology: Material Formulations, Customization, and Sustainability**

[Sarah Karmel, Chief Scientific Officer, Rheon Labs](#)

**14:00 Adhesive bonding properties of TPU in additive manufacturing compared to two-component injection molding**

A crucial product property of hard-soft composites is the adhesive bond between the components used. This presentation will focus on the comparison of the bonding properties of test specimen produced in additive manufacturing and two-component injection molding.

[Marco Klute, Research Assistant, University of Kassel, Institute for Materials Engineering, Plastics Materials](#)

**14:30 Towards the prediction and control of the shearing stresses generated during the injection molding of thermoplastic vulcanizate products**

[Aizeti Burgoa, Researcher, Leartiker S.Coop](#)

15:00 Chair’s summary

15:05 End of conference