Dekkimportørenes forening
Norsk Dekkretur AS
Jon Erik Ludvigsen
Tyre development

• Cars are heavier, bigger engines, more torque, 4 wheel drive etc
• Still average life time is still the same (4-6 years) personel car
• Wear is a direct consequence of friction. Particles are torn off amy material when friction to another surface is bigger that the connecting forces within the material.
White spot...

• Driving cars in a larger extent for 50 years
• No ”problems” alerted
• What happens with the material that is leaving the tyres?
• Which particle sizes? (probably)
• Will particles break down? How fast? Leaking per time?
• Influence on environment?
• Risk rather than content analysis
Fifth meeting of the Interest Group Plastics – EPA Network
with a focus on inputs from TRWP into the environment

Fazilet Cinaralp – ETRMA
Secretary General

Oslo – November 8, 2018
CONTENTS

• TRWP: what we know
  - What are TRWP?
  - Tyre Industry Project research (TRWP in air samples and sediments samples)
  - Cardno ChemRisk and Deltas Study: TRWP fate and transportation

• TRWP: knowledge gaps

• Tyre industry action plan on TRWP (3 pillars)
  1. Continuous research
  2. Tyre design -> generation -> abrasion
  3. Deploy a holistic approach: TRWP Platform

• TRWP in the Environment – key messages

Oslo, 8 November 2018
# Tire Industry Project (TIP)

## General

- The 11 biggest tire manufacturers in the world form the WBCSD (World Business Counsel of Sustainable Development)
  - Bridgestone, Continental, Cooper, Goodyear, Hankook, Kumho, Michelin, Pirelli, Sumitomo, Toyo, Yokohama
- Represent ~ 70% of tires produced worldwide
- Founded in 2005/2006

## Targets

- Anticipate the potential long term environmental and health issues related to tire production and the use of tires that could impact the tire industry globally

## Guidelines

- The initiatives have to be neutral, global, scientifically valid
- Control through members of the board (at Conti: The board of the Tire Division)
What are Tire and Road Wear Particles? and how are they formed?

- Tyre and road wear particles are formed during the interaction of the tyre and the road surface as a result of friction.

- Tyres as well as roads wear down.

- Tyre and road wear particles never occur in pure form, but in a combination of road surface and tyre wear (approx. 50 % w/w tyre wear and 50 % w/w road wear).

**Key Message**

Tire Wear + Road Wear = Tyre and Road Wear Particles (TRWP)

Tyre and Road Wear consists to one half of rubber and to the other of road wear.
Can TRWP be considered Fine Dust?  
Analysis of Urban Ambient Air

TRWP concentration detected in the ambient air
› Mean: ca. 0.24 µg/m³
› Maximum: ca. 1.3 µg/m³

Global sampling study
› USA
› EU – France, London
› Japan
› India - Delhi

TRWP contribution to ambient air (identification through chemical markers)
› PM$_{10}$: < 1 %
› PM$_{2.5}$: ca. 0.3 %

In a global sampling study, TRWP contributed on average less than 1% of the PM$_{10}$-fraction of ambient air.

Source: Panko et al. (2013). Measurement of airborne concentrations of tire and road wear particles in urban and rural areas of France, Japan, and the United States in “Atmospheric Environment”

Oslo, 8 November 2018
Design safe tyre for producing tyre

**Nu**
- Säkert
- Tillförlitligt
- Energieffektivt
- Väggrepp
- Tyst
- Hantering
- Livslängd
- Miljövänlighet

**Kommande**
- Uppkoppling
- Vikt, Rullmotstånd (Elfordon)
- Avancerade anti-punkteringssystem
Tyre design - Toward a sustainable road transport

Tyres are strictly regulated:

✓ General Safety Regulation (regulation (EC) 661/2009)
✓ Tyre labelling regulation (EC) 1222/2009
✓ VECTO Regulation: Determination of CO2 emissions from HDV (EU 2017/2400)

Tyre share in the vehicle system in terms of fuel consumption:

✓ 30% HDV
✓ 20% Cars

If tyres are properly inflated and maintained, ETRMA foresees reducing the HDV CO2 emissions on average tyre rolling resistance coefficient by 1% per annum by 2030.

The difference between a G and A class for a complete set of PC tyres could reduce fuel consumption by up to 7.5%. Even more for trucks. However, the penetration of Low RR tyres, in classes A and B, is < 1% market penetration.

Oslo, 8 November 2018
Spørsmål?

Takk for oppmerksomheten