



# **E-Vapour (EVAP) Sub-Group Update**

**CORESTA Congress Online**

**October 2022**



# E-Vapour Sub-Group Membership

## ❖ SG Coordinator

- Gene Gillman – JUUL Labs

## ❖ SG Secretary

- Colin Sinclair – JUUL Labs

## ❖ SC Liaison

- Rob Stevens – RAI Service Company

## ❖ SG membership

- ≈ 50 people US, EU, Asia (~100 attend VM)
- E-Vapour Product Companies, Suppliers, Contract Labs, Regulatory Agencies, Academia, Others, ...



# E-Vapour Sub-Group

## Scope:

- 1) To identify areas of scientific research and conduct studies that will characterize liquids, e-vapour product emissions, and device properties and performance
- 2) To develop and publish methods and guides
- 3) To organize and conduct periodic proficiency/collaborative studies of identified constituents in liquids and/or e-vapour product aerosol



# Accomplishments since last meeting

## **CORESTA Recommended Method No. 84 - Determination of Glycerin, Propylene Glycol, Water, and Nicotine in the Aerosol of E-Cigarettes by Gas Chromatographic Analysis**

Fourth edition published on the CORESTA website October 2021

## **Technical report: 2015 Collaborative Study for Determination of Glycerin, Propylene Glycol, Water and Nicotine in Collected Aerosol of E-Cigarettes**

Amended version published on the CORESTA website October 2021

## **Publication: Machine Vaping of Electronic Cigarettes – A Comparison of Puffing Regimes**

Published in Contributions to Tobacco & Nicotine Research, Volume 30 No 3 2021



# Accomplishments since last meeting

## **CORESTA Recommended Method No. 98 - Determination of Select Metals in E-Liquid by ICP-MS**

Published on the CORESTA website October 2022

## **CORESTA Technical Report - 2021 Collaborative Study for the Determination of Metals in E-Liquids**

Published on the CORESTA website October 2022



# E-Vapour Sub-Group

## ❖ Closed Projects

<b>ProjectNo.</b>	<b>Activity</b>	<b>Leader</b>	<b>Time</b>
231	Aerosol Collaborative Study Reference Device/Update to CRM 84	Weidman	Closed
298	Update of Technical Guide N°18	Jeannet	Closed
312	Metals in e-liquid collaborative study and CRM	Cunningham	Closed



# E-Vapour Sub-Group

## ❖ Open Projects

ProjectNo.	Activity	Leader	Time
304	TSNAs in e-liquid collaborative study and CRM	Jablonski	Open



# **Collaborative Studies: Metals and TSNAs in e-liquids**



## ❖ Phase II – Collaborative Study

➤ Study Coordinator – Anthony Cunningham (BAT)

➤ Statistical Analysis – Michael Morton (Altria)

➤ Method Selection – ICP-MS with sample dilution

➤ Study Protocol

- Ten metals: As, Cd, Cr, Cu, Fe, Pb, Ni, Ag, Sn and Zn
- Four e-liquids: unflavoured, tobacco, menthol and fruit
- Four fortification levels: 500, 1500, 3000 and 5000 ng/g, plus unfortified
- Samples shipped without nicotine; addition of nicotine included in study protocol

- **Study coordinator – Joseph Jablonski (Enthalpy)**
- **Statistical Analysis – Michael Morton (Altria)**
- **Method Selection – LC-MS/MS (based on CRM-72)**
- **Study design:**
  - Compounds of interest: NNN, NNK, NAT, NAB
  - Four e-liquids used: unflavored, tobacco, menthol, sweet
  - Each e-liquid fortified at a different concentration
    - NNK, NNN, NAT/NAB – 3.2/0.8, 12/3, 48/12, 80/20 ng/g
- **Samples shipped without nicotine and fortified by participating labs**
- **CRM and Technical Report submitted to Scientific Commission Oct 2022**



# **Two-year Plan**



# 2- and 5-year plan

## 2 Year Plan

1. CORESTA reference device – annual or regular Collaborative Study on nicotine in aerosol (Project lead TS)
2. Glycidol in aerosol - **small expert group**
3. pH of e-liquid and aerosol –**small expert group**
4. Water activity – **CRM and Technical Report**
5. TSNAs in aerosol –**CRM and Technical Report**
6. Organic acids (primary and degradants) – **Small expert group to consider best practice guidelines**

## 5 Year Plan

1. Metals in aerosol
2. Flavours
3. Non-targeted analysis