Potential cosmetic and social benefits for e-cigarette and tobacco heating product consumers

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Agenda

• Introduction
• *glo™* cosmetic and social benefits
• New staining methods
  ○ Tooth enamel
  ○ Skin
  ○ Wallpaper and material

• Summary and next steps
It is widely accepted that the **harm associated with smoking** is caused by **inhaling smoke** produced by **burning tobacco** and not by nicotine.

Our potentially reduced risk products (PRRPs), which comprise vapour, THPs and oral products, involve no combustion, release far **fewer and lower levels of toxicants** compared to cigarettes, and have the **potential to be significantly less harmful to health**.

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1. The positioning of products on this continuum is based on a number of published studies and is intended to provide an indication of the respective levels of harmful toxicants present in cigarette smoke that regulators in various jurisdictions require to be measured. With the exception of nicotine replacement therapy products, which are widely accepted as being less harmful than conventional cigarettes, the levels of toxicants released as illustrated on the continuum do not necessarily mean that the relevant product is less harmful to health than another product.
5 step Potentially Reduced Risk Products (PRRP) assessment framework

- Reduced Emissions - What is in the vapour/aerosol?
- Reduced Exposure - What happens when exposed to these emissions?
- Reduced Risk - What is the long-term risk?

Additional consumer benefits
Assessment of tobacco heating product THP1.0. Part 4: Characterisation of indoor air quality and odour

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Additional consumer benefits – staining
In vitro staining assessment
Staining test articles

Particulate phase
- 3R4F
- glo™
- iSwitch
- extracted DMSO

Whole aerosol
Change in colour space

$$\Delta E = \sqrt{\left(\Delta L^*\right)^2 + \left(\Delta a^*\right)^2 + \left(\Delta b^*\right)^2}$$

Staining methods - CIE L*a*b* color space

^ Commission internationale de l’éclairage/International Commission on Illumination (CIE) in 1976
Porcine skin staining – minimal staining with PRRPs

![Graph showing the changes in Delta E over time for different substances: 3R4F, glo™, iSwitch, and DMSO. The graph illustrates the minimal staining effect with PRRPs compared to the control DMSO. The images on the right side of the page compare the skin samples at 0h and 6h, showing the minimal staining effect.](image-url)
Wall paper and material staining – minimal staining with PRRPs

![Graph showing Delta E for different puffs and brands, including 3R4F, glo™, and iSwitch.]
Bovine enamel staining – minimal staining with PRRPs

Delta E

3R4F  glo™  iSwitch

PRRPs staining comparable to air blanks

Dalrymple et al. 2018 American Journal of Dentistry
Clinical assessment of teeth staining
Pilot Clinical study

- Subjects: 32 cigarette smokers, 27 e-cigarette consumer and 35 non-smokers
- Staining assessed using the Modified Lobene Tooth Stain Index
- Front 12 teeth assess – 4 areas
- Single analysis

[Bar chart showing staining intensity for CS, EC, and NS groups]
Summary

• PRRPs exposure resulted in minimal staining of enamel, skin, wallpaper and material samples compared to scientific reference cigarettes

• Skin staining: future studies aerosol exposure

• Pilot clinical study: e-cigarette consumers have reduced teeth staining

• Further studies are required to fully understand changes to the oral cavity when consumers switch to PRRPs

• PRRPs potential cosmetic and social benefits for consumers

These results do not mean that these products are less harmful than conventional tobacco products
Thank you