



UNECE EVS-IWG

OICA comments on Thermal  
Propagation Test  
EVS #25 meeting  
2022

- For the Thermal propagation test a no smoke criteria is not suitable:
  - As you know, zero does not exist in metrology.
  - Vent gases are an inherent outcome from the failure mode associated with thermal propagation.
  - It is not possible to prevent such gases from forming and they must be allowed to exit the enclosure in some way so that an explosive environment is not created.
  - In addition, our vehicles are not designed to prevent any intrusion of gas into the passenger compartment. We didn't create submarines...
  - For us, the regulation impose no danger to the occupants, which de facto allows the presence of a small quantity smoke in the passenger compartment, insufficient for health issue, the threshold of which will have to be fixed later.

## R100-3 Regulation :

- 6.15.1. The REESS or vehicle system shall provide a signal to activate the advance warning indication in the vehicle to allow egress or 5 minutes prior to the presence of a hazardous situation inside the passenger compartment caused by thermal propagation which is triggered by an internal short circuit leading to a single cell thermal runaway such as fire, explosion or smoke. This requirement is deemed to be satisfied if the thermal propagation does not lead to a hazardous situation for the vehicle occupants.



✓ Low amount of smoke within 5 min duration target

# THERMAL RUNAWAY : TEST ANALYSIS

## Vehicle Cabin Air Quality

### Smoke analysis :

- Requirement : no hazard inside cabin within 5min
- Small amount on rear seat area prior to 5 min:



Sensor closed to smoke exit

### CO analysis :

- No CO intoxication risk inside cabin within 10min
- ~16ppm after 5min, ~30ppm after 10min (smoke not visible)
- 420ppm (limit AEGL-2) reached after ~18min 45s

