

# 573 Defect Information Report for Recall 176

## Attachment A

### Chronology of events leading up to the defect decision:

- In March 2017, Hyundai Motor Company (“HMC”) in Korea received information from the supplier that it had received certain hydraulic clutch actuator (“HCA”) warranty part returns with slightly burned phase caps from model year 2017 Hyundai Ioniq vehicles. HMC conducted an initial search of warranty claims in the Korean market and found reports alleging oil leaking from the HCA and/or illumination of the HEV light. No reports of vehicle fires or other thermal events were received at this time. HMC began recovering warranty return parts from the Korean market and sent them to the supplier for analysis.
- By June 2017, HMC and the supplier found that certain HCA warranty part returns contained burrs on the inner housing, most likely originating from manufacturing. The burrs could, over time, damage the internal oil seal causing oil to leak into the phase cap area. The supplier implemented a running production change to eliminate the burrs and reinforce the inner oil seal of the HCA to prevent oil leakage.
- In December 2017, a Hyundai affiliate issued a Quality Information Report (“QIR”) to HMC indicating reports received in the U.S. market for the alleged condition. HMC began recovering additional warranty return parts for further study and evaluation with the supplier. Part recovery efforts continued until January 2018.
- From early January to April 12, 2018, HMC analyzed warranty return parts with the supplier and performed on-vehicle replication testing to further study the failure mechanism. HMC was able to replicate and confirm that an electromechanical reaction between the motor coil pin and the phase cap could occur if the phase cap area becomes immersed in oil. In addition, although no actual fire was observed throughout testing, HMC was able to replicate a galvanic reaction that produced sparks leading to the tentative conclusion that, under specific conditions, a fire could be triggered as a result of the phase cap area filling with oil.
- On April 16, 2018, HMC notified all affected Hyundai affiliates of its findings and requested each affiliate to evaluate the necessity of a field action in their respective markets. Based on the information received from HMC, on April 20, 2018, HMA convened its Technical Committee with a recommendation to conduct a safety recall.
- As of the date of this filing, Hyundai is unaware of any fire, accidents or injuries alleging the subject defect condition in the U.S. market.