

Your Ref: S0M02WT4  
Our Ref : CS4/ASM20012296/P

11<sup>th</sup> November 2020

**M/s AXA Insurance Pte. Ltd.**  
8 Shenton Way #24-01  
AXA Tower  
Singapore 068811  
(Motor Claims Department)

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE  
INSURED VEHICLE SKZ 9085D ON 7<sup>th</sup> November 2020**

1. We refer to your letter dated 9<sup>th</sup> November 2020 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the insured vehicle SKZ 9085D (herein referred to as “**Insured Vehicle**”) are set out below.

**Inspection of the Insured Vehicle**

3. The Insured Vehicle was physically inspected on 10<sup>th</sup> November 2020 at the premises of CYS Automobile Services Pte Ltd located at 38 Woodlands Industrial Park E1, #07-17, Singapore 757700
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SKZ 9085D
Make / Model	: HYUNDAI SONATA NF 2.0 (A)
Chassis No	: KMHEU41BR6A246863
Year of Registration	: 26 July 2006
Mileage	: N.A (wiring affected)

5. The Insured Vehicle was observed to have sustained severe fire damage all around its engine compartment completely burnt and interior compartment had sustained smoke and heat damage. Rust had accumulated around the front engine portion of the Insured Vehicle as a result of exposure to environmental condition for a period of time. See photos 1 – 6 below.



**Photo 1** shows the general view of the front portion of the Insured Vehicle at the time of our inspection. The Insured Vehicle was observed to have sustained extensive fire damage all around. Its engine compartment completely burnt and interior compartment had sustained smoke and heat damage. Rust had accumulated all over the front engine portion of the Insured Vehicle as a result of exposure to environmental condition for a period of time.



**Photo 2** shows the general view of the rear portion of the Insured Vehicle which was observed to be unaffected by heat smoke damage at the time of our inspection as a result of the fire.



**Photo 3** shows the general view of the right body of the Insured Vehicle at the time of our inspection. The Insured Vehicle was observed to have sustained extensive fire damage all around. Rust had accumulated all over the front and interior compartment of the Insured Vehicle as a result of exposure to environmental condition for a period of time.



**Photo 4** shows the general view of the left body of the Insured Vehicle at the time of our inspection. The Insured Vehicle was observed to have sustained extensive fire damage all around. Rust had accumulated all over the front and centre portion of the Insured Vehicle as a result of exposure to environmental condition for a period of time.





**Photo 5** shows the general view of the interior compartment of the Insured Vehicle at the time of our inspection. Its interior compartment was had sustained heat and smoke damage as a result of the fire.



**Photo 6** shows the engine compartment of the Insured Vehicle at the time of our inspection. The entire engine compartment of the Insured Vehicle was observed to be severely burnt. Most of the parts inside the engine compartment were found to be burnt and/or melted as a result of the fire.

6. At the time of inspection, we did not find any unusual skeletal remains which could have suggested that there was possible modification(s) on the Insured Vehicle.

### **Investigation and Technical Analysis**

7. Based on the circumstances for this particular case, the fire appears to have originated from the front of the Insured Vehicle, somewhere around the front centre portion. This can be determined basing on the area where the extent of fire damage was most severe, the circumstances of the fires' origin at the material time of incident and also the high heat intensity burn marks (whitish burn marks) that were found on the exterior surface of its front bonnet centre portion.
8. These whitish burn marks are a result of exposure to prolong heat intensity. Rust would normally start to develop around these areas soon after a fire as the prolonged exposure to high heat intensity usually causes the bare steel/metal material of the body parts to be exposed to natural environmental condition. The rust that had developed on the front bonnet and centre portion, in the immediate vicinity of where these whitish burn marks were found, would also support our findings of where the fire had affected the Insured Vehicle. See photo 7- 10 below.

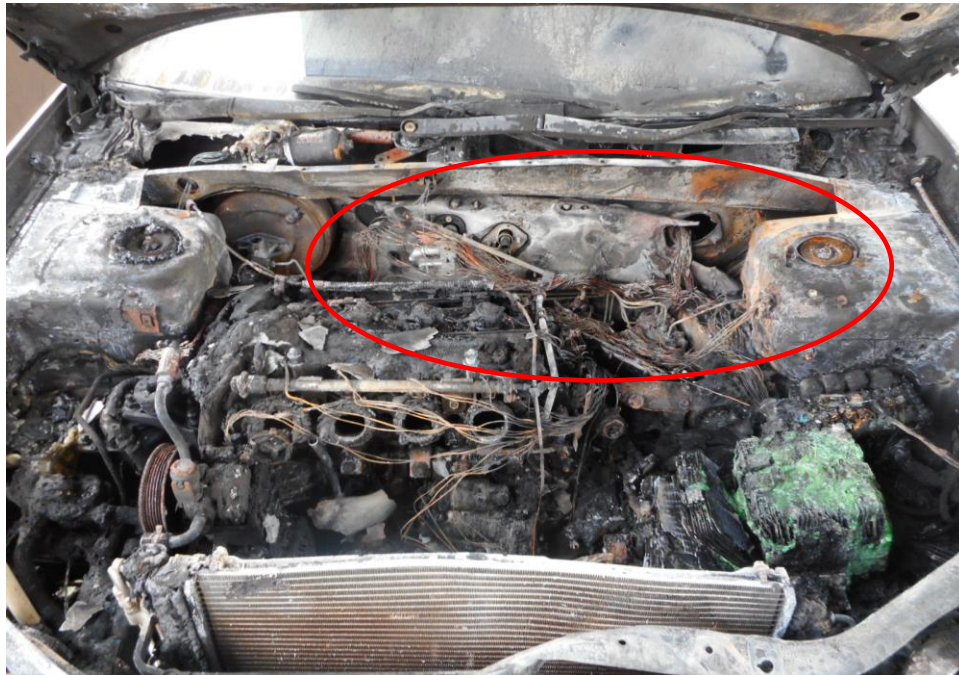


**Photo 7** shows the exterior of the front bonnet of the Insured Vehicle at the time of our inspection. The high heat intensity burn marks (whitish burn marks) (circled) and rust that had development found on the exterior surface of the bonnet indicates that the fire had originated from the front portion of the Insured Vehicle.



**Photo 8** shows the underside of the front bonnet cover of the Insured Vehicle at the time of our inspection. The High heat intensity burn marks (whitish burn marks) and rust that had development found on the interior surface of the bonnet indicates that the fire had originated from the front portion of the Insured Vehicle.



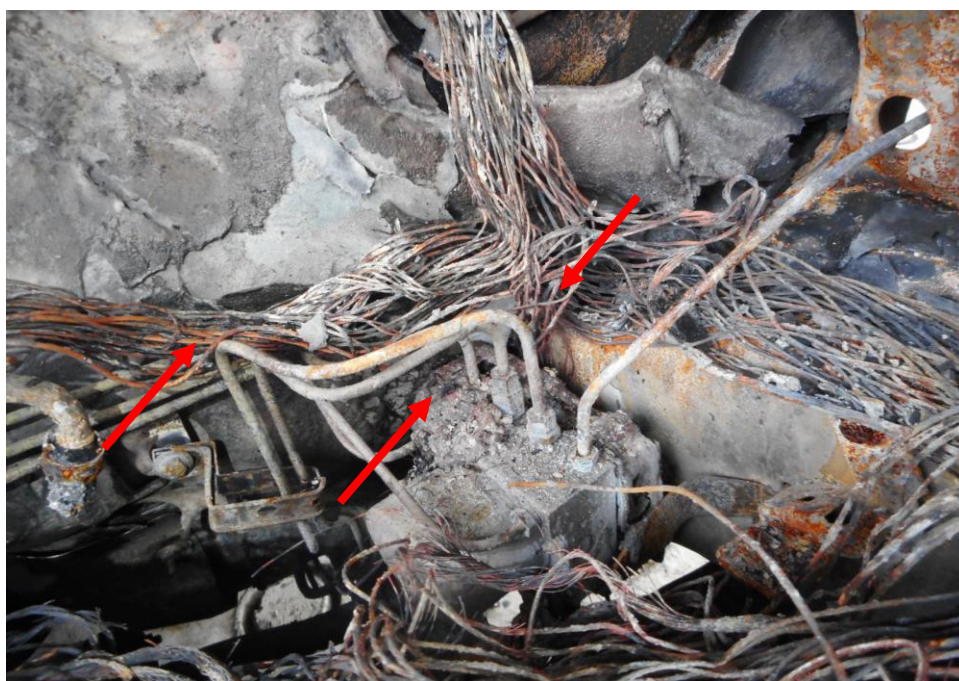


**Photo 9** shows general view of the engine compartment portion of the Insured Vehicle at the time of our inspection. The high heat intensity burn marks (whitish burn marks) and rust (circled) that had development found on the exterior surface indicates that the fire had originated from this area of the Insured Vehicle.



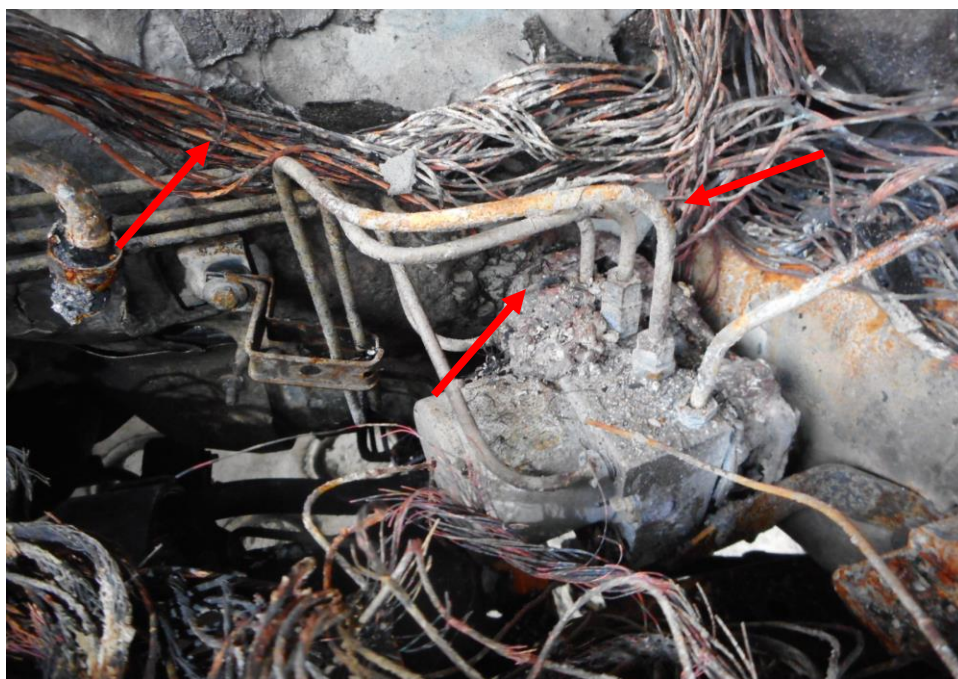
**Photo 10** shows close up view of the engine compartment portion of the Insured Vehicle at the time of our inspection. The high heat intensity burn marks (whitish burn marks) and rust (circled) that had development found on the exterior surface indicates that the fire had originated from this area of the Insured Vehicle.

9. Upon closer examination of the engine compartment portion of the Insured Vehicle which was where the fire had likely started, we had found several stretches of wiring from the ABS pump and its connector which was burnt internally to its bare copper state. Such condition normally indicates internal heating of copper wires which is a sign of an electrical short circuit occurring. This would then appear to suggest that the cause of fire to the Insured Vehicle could have possibly been due to electrical in nature. See photos 11 and 12 below.



**Photo 11** shows the wirings from the ABS pump connector, which is in the immediate vicinity where the fire to the Insured Vehicle had likely started. The wirings (red arrows) were found to have been burnt internally to its bare copper state, suggesting occurrence of an electrical short circuit.





**Photo 12** shows close up view of the wirings from the ABS pump connector, which is in the immediate vicinity where the fire to the Insured Vehicle had likely started. The wirings (red arrows) were found to have been burnt internally to its bare copper state, suggesting occurrence of an electrical short circuit.

10. From the Singapore Accident Statement, which was made by Mr Tan Jia Yong, Kenneth (herein referred to as “**Mr Tan**”); we note that the fire to the Insured Vehicle had started at a time when it was parked stationary at the MSCP parking lot. Mr Tan was first alerted of the fire by the Police officers knock at his home door.
11. We managed to speak to Mr Tan on 11<sup>th</sup> November 2020 where we were able to gather further information pertaining to the incident as well as information pertaining to the history of the Insured Vehicle.
12. According to Mr Tan, on 6 November 2020. Mr Tan returned home at approximately 1500 hour and parked the Insured Vehicle in his home MSCP at 259C PUNGGOL FIELD. On 7 November 2020 @ 0300 hours Mr Tan was asleep at home when Police officers came knocking on his door informing him that the Insured Vehicle had caught fire in the MSCP where it was parked. Mr Tan then rushed down and saw SPF and SCDF officers already on scene with the fire already put out.
13. Subsequently, Mr Tan was then given access to the Insured Vehicle and had his statement was taken by the Police and SCDF officers.

14. Mr Tan subsequently contacted his insurance company (AGI) and made towing arrangements. The tow truck arrived within at 0900 hours and the Insured Vehicle was towed to CYS Automobile Services Pte Ltd where Mr Tan made an insurance report on 9 November 2020 at 1041 hours.
15. Mr Tan mentioned that he had not experienced any mechanical or electrical/electronic problems with the Insured Vehicle till the day of the incident. He also mentioned that there were neither warning lights displayed nor was there an abnormal rise in temperature throughout the period the Insured Vehicle and when driven, prior to the fire.
16. With regards to the history of the Insured Vehicle, we were able to gather from Mr Tan that the Insured Vehicle was purchased pre-owned and he is the registered owner of the Insured Vehicle. Mr Tan informed us that he is the sole driver of the Insured vehicle since the day he bought the Insured Vehicle 4 years ago and he had just changed the Insured vehicle's battery 5 month ago prior to the fire incident.
17. Pertaining to the maintenance aspect, Mr Tan sends the Insured Vehicle for periodical servicing. However, he mentioned that he did not keep the servicing records and inspection certification. He mentioned that there was no major overhaul done or modifications done to the Insured Vehicle.

### **Incident Scene Photographs**

18. During the course of our investigations, we were able to obtain coloured photographs showing the Insured Vehicle at the incident after the fire was extinguished by SCDF personnel. These were provided to us by Mr Tan.
19. Our examination of these photographs revealed that the fire had started from the front of the Insured Vehicle. The photographs had also showed the Insured Vehicle on fire and similar extent of damage and burn pattern to the Insured Vehicle as per what we had observed during our physical inspection of the Insured Vehicle. There were one Vehicle that were parked beside the Insured Vehicle, however it did not sustained fire damage from the burning of the Insured Vehicle. Apart from the aforesaid; there was no further notable information that could be gathered from these photographs. See photos 13 and 14 below which were provided to us by Mr Tan.





**Photo 13** shows the SCDF officer on scene after the fire was put out on the Insured Vehicle. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Tan, location when the fire broke out.



**Photo 14** shows the badly burned Insured Vehicle at the MSCP after the fire was put out by the SCDF. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Tan, location when the fire broke out.

20. Given the circumstances of the incident as reported, the possibility of the cause of fire to the Insured Vehicle being due to engine overheating would seem unlikely as Mr Tan had mentioned to us that the Insured Vehicle was left parked stationary overnight prior to the fire incident.
21. The possibility of the fire being due to external factors (foreign material(s) stuck on hot surfaces, arson and sabotage amongst others) would also seem unlikely. As the location where the Insured Vehicle caught fire was also observed to be not at a secluded location.
22. The possibility of the fire being due to electrical in nature would then seem more likely given that engine overheating and external factors would both seem unlikely. The fire being due to electrical nature is also supported by the condition of the several stretches of wiring from the ABS pump and its connector which was burnt internally to its bare copper state on the Insured Vehicle which was a sign of short circuit that which was earlier discussed in paragraph 9 above.



23. Our checks with both local and international bodies and associations had also revealed that at the time of writing this report, there is a manufacturer recall of similar make and model vehicle to the Insured Vehicle that may possibly be related to fire being originated from the engine compartment of the Insured Vehicle. See search result from LTA below.

## Vehicle Recall Details

\* ONLY INFORMATION ON VEHICLE RECALLS SUBMITTED FROM 9 APRIL 2007 IS AVAILABLE

Owner ID Type <b>Singapore NRIC</b>	Owner ID <b>222H</b>
Vehicle No. <b>SKZ9085D</b> ←	Make/Model <b>HYUNDAI/ NISSANATA 2.0</b> ←
Engine No.: <b>G4KA6337487</b>	Chassis No.: <b>KMHEU41BR6A246863</b>

## Recall Details

**Recall No.: R2018070555**

Manufacturer Recall Date:  
**01 Jun 2018** ←

Estimated Completion Year of Recall:  
**2021**

Brief Description (As Provided by Motor Dealer):  
**On some superannuated vehicles might experience electrical short inside the ABS/VDC (Vehicle Dynamic Control) module.** ←

Date Rectified:  
**-** ←

Hotline Information:  
**CALVIN KAN at 64735588**  
**ISMAIL BIN TAIB at 64735588**

For more details, contact KOMOCO MOTORS PTE LTD

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Recall shows the recall details of the Insured Vehicle, this recall package consist of the ABS module which will experience electrical short circuit. This components have not been replaced and might be the cause of the fire. (arrowed).

24. Our checks to the above mentioned components in the LTA recall, which will cause a short circuit and have might have resulted in the fire incident to the Insured Vehicle. Our investigation shows that the fire had started from the mentioned components and this is also supported by the LTA recall details that the ABS pump module will experience electrical short and result in a fire.
25. Pertaining to the LTA recall aspect, Mr Tan informs us that he did not recall receiving the LTA recall letter or any information regarding to the Insured Vehicle.

### **Conclusion**

26. Having investigated and technically analysed the damages of burnt nature to the Insured Vehicle, we are of the view that the cause of fire to the Insured Vehicle was of electrical nature. For this particular case, the fire had originated from the Abs pump module to its wiring harnesses leading to its electrical components in the engine compartment of the Insured Vehicle.
27. We did not find any evidence which had suggested that the cause of fire to the Insured Vehicle was due to poor maintenance and/or recurring electrical problem.
28. There was no modification(s) or additional electronic and/or electrical component(s) fitted on the Insured Vehicle at the time of our inspection of the Insured Vehicle.



29. Our investigations had also revealed that at the time of writing this report, there was a manufacturer recall to similar make and model vehicle as the Insured Vehicle that may possibly be related to this incident. The mentioned component on the LTA recall had not been rectified and the cause of fire had likely started from that component.

**Sherwin Beh***Technical Investigator***Ang Bryan Tani***AMSOE, AMIRTE, AFF SAE, M.MATAI, AFF.Inst.AEA**Senior Technical Investigator**Technical Investigation & Reconstructionist (SAE-A)*

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