



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

ODI RESUME

Investigation: PE 19-004

Date Opened: 03/29/2019

Investigator: Michael Lee

Approver: Stephen Ridella

Subject: Non-crash Vehicle Fires

Date Closed: 12/22/2021

Reviewer: Scott Yon

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: Kia Motors America

Products: 2011-2014 Kia Optima and Sorento; and 2010-2015 Kia Soul

Population: 1,686,790

Problem Description: Allegations of non-crash vehicle fires.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	444	1,940	2,384
Crashes/Fires:	444	1,940	2,384
Injury Incidents:	22	57	79
Number of Injuries:	27	76	103
Fatality Incidents:	0	1	1
Number of Fatalities:	0	1	1

ACTION / SUMMARY INFORMATION

Action: This Preliminary Evaluation has been upgraded to an Engineering Analysis (EA) 21-003; reference NHTSA Recalls 20V-750 and 21V-844.

Summary:

During this Preliminary Evaluation (PE), the Office of Defects Investigation (ODI) assessed the scope, frequency and potential safety-related consequences of non-crash vehicle fires caused by both engine failures and failures of other vehicle systems/components in model year (MY) 2011-2014 Kia Optima, MY 2011-2014 Kia Sorento and MY 2010-2015 Kia Soul vehicles equipped with Theta II, Gamma, Nu and Lambda II engines (approximately 1.7 million vehicles). ODI also reviewed field and other data on other Kia vehicles (approximately 3.6 million additional vehicles) equipped with the same engines used in the above-mentioned vehicles.

As a result of this PE, Kia has issued NHTSA Recalls 20V-750 and 21V-844 to address potential engine failures and fires in certain Kia vehicles equipped with various engine types. Additional information on these and other related recall actions is available in the downloadable version of this resume available at NHTSA.gov.

In addition, ODI has upgraded this PE to an Engineering Analysis (EA) 21-003 which will focus on potential recall scope concerns and recall remedy concerns related to the engine failure-related recalls mentioned above and conducted previously. See the EA21-003 Opening Resume available at NHTSA.gov for more information.

Also available in the downloadable version of this resume is a list of the reference numbers for the 444 ODI reports, or Vehicle Owner Questionnaires (VOQs), cited above which ODI received through mid-November 2021. Note that the Manufacturer reports cited above are customer complaints received through March 2019.

PE19-004 Additional Summary

In its 2019 response to ODI's information request under this Preliminary Evaluation (PE), Kia Motors America (Kia) provided a total of 3,119 customer complaint reports of alleged non-crash fires (both engine related and non-engine related) on all Kia vehicles equipped with the subject engines (total approximately 5.3 million vehicles). ODI's analysis of fire reports likely related to engine failures identified several combinations of models, model years and engine types having higher fire rates than other Kia vehicles and several peer vehicles of the subject Optima and Sorento. As a result, Kia has issued two safety recalls (Recall IDs 20V-750 and 21V-844) to address the potential engine failures and fires in the following Kia vehicles: MY 2012-13 Forte and Forte Koup equipped with Theta II 2.4L MPI engines; MY 2014-15 Forte and Forte Koup with Nu 2.0L GDI engines; MY 2011-13 and MY 2017-18 Optima Hybrid with Theta II 2.4L MPI HEV engines; MY 2012-13 Sorento with Theta II 2.4L MPI engines; MY 2014-2015 Soul with Nu 2.0L GDI engines; and MY 2012 Sportage with Theta II 2.4L MPI engines.

To summarize all field actions since 2017, Kia has issued the following safety recalls to address vehicles fires due to engine failures involving various engine types (Theta II GDI, Theta II MPI, Theta II MPI HEV, Nu GDI and Gamma GDI): 17V-224, 19V-120, and the above-mentioned 20V-750 and 21V-844. The remedies for these recalls typically involve engine inspection (to detect existing damage), and if necessary, engine replacement. Additionally, Kia is installing an engine control software modification known as Knock Sensor Detection Software which is intended to detect impending engine failure, alert the driver, and limit the engine power (to lessen likelihood of engine failure and fire).

In addition, during this PE investigation, ODI has influenced the following recalls to address various non-engine related fires: 18V-907 (high pressure fuel pipe leak), 20V-088 (moisture in ABS module), 20V-100 (low pressure fuel hose leak), 20V-101 (fuel rail leak), 20V-518 (ABS module fluid leak) and 20V-519 (ABS module fluid leak). In summary, ODI has influenced ten safety recalls totaling almost 2.3 million vehicles for various causes of non-crash vehicle fires. During the investigation, Kia has also conducted several other recalls related to non-crash fires, which were not directly influenced by ODI.

Finally, via both Kia and the media, ODI became aware of a non-crash engine compartment fire that occurred in Hawaii, in June 2019, involving a MY 2019 Kia Soul rental vehicle. This vehicle was not covered by any recall for engine compartment fires. ODI has not determined the cause of the fire. The driver reportedly was severely burned and subsequently died (due to injuries from the fire incident) in the summer of 2020.

List of 444 VOQ Numbers

10429442	10554720	10566975	10572612	10587361	10608591	10626163	10639351	10639417
10645013	10661186	10692124	10693084	10694186	10702294	10705662	10714982	10722839
10726832	10731276	10748707	10783067	10786603	10787041	10787877	10789435	10808477
10824280	10836751	10839138	10846035	10850516	10865183	10873241	10873251	10874184
10892633	10894943	10898504	10901907	10903731	10903804	10914540	10915744	10918948
10926798	10927841	10938549	10958524	10965933	10970145	10971641	10978698	10984187
10984715	10984970	10985144	10991332	10991353	10993739	10994523	11001902	11004359
11004929	11005870	11010794	11010999	11012450	11012531	11013556	11013481	11015550
11015777	11015830	11016332	11019133	11021789	11022912	11022903	11025437	11031971
11032346	11040562	11041768	11047022	11052937	11055326	11062889	11066866	11071675
11073341	11074148	11075310	11076296	11081758	11083606	11089043	11089968	11090119
11090295	11093994	11096761	11097793	11097934	11098807	11101703	11101961	11102293
11102349	11104798	11110065	11110876	11111005	11110889	11111480	11111767	11111708
11111915	11112486	11112496	11112455	11112495	11112989	11113500	11114289	11114517
11115017	11115586	11115650	11115903	11119735	11119545	11119577	11120580	11120842
11121206	11121693	11121719	11121844	11122204	11123614	11124571	11127964	11128568
11128790	11128814	11129070	11128846	11128852	11129587	11131126	11132280	11132316
11132366	11132429	11132973	11132956	11133028	11133319	11133307	11133458	11139133
11139148	11139335	11139506	11140474	11140337	11140471	11140287	11140650	11141323
11141168	11141807	11142172	11142200	11142750	11144208	11144563	11150291	11151813
11152031	11153421	11154095	11153705	11154128	11154184	11154347	11154618	11154526
11154607	11156388	11156505	11160749	11160651	11160978	11161031	11162215	11163325
11163941	11164332	11165647	11165465	11164861	11166761	11170550	11170556	11170588
11170597	11170614	11171259	11171483	11173061	11173144	11173740	11175775	11176066
11176183	11176454	11181712	11182680	11183465	11183921	11183965	11184819	11185770
11186541	11187086	11187011	11187068	11189793	11190052	11190214	11190488	11191562
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11229272	11230331	11232849	11233839	11240622	11240680	11241177	11241352	11241543
11241747	11242501	11243904	11244378	11254066	11256524	11257248	11258319	11267196
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11330872	11338842	11339893	11341658	11342176	11343004	11343390	11343712	11344092
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