

August 10, 2023

DEFECT INFORMATION REPORT

1. Vehicle Manufacturer Name:

Toyota Motor Manufacturing, Texas, Inc. ["TMMTX"]
1 Lone Star Pass, San Antonio, TX 78264-3413

Affiliated U.S. Sales Company:

Toyota Motor North America, Inc. ["TMNA"]
6565 Headquarters Drive, Plano, TX 75024

Manufacturer of Fuel Tank Assembly:

Textron Inc. (Corporate)
40 Westminster Street Providence, RI 02903
Phone: +1-401-421-2800

Country of Origin: USA

2. Identification of Involved Vehicles and Affected Components:

Based on production records, we have determined the involved vehicle population as in the table below.

Make/Car Line	Model Year	Manufacturer	Production Period
Toyota / Tundra	2022-2023	TMMTX	November 2, 2021 through July 24, 2023
Toyota / Tundra Hybrid			March 15, 2022 through June 7, 2023

Applicability	Part Number	Part Name	Component Description
MY2022-2023 Toyota Tundra/ Tundra Hybrid	77209-0C180	Tube Sub-Assy. Fuel Tank Main	Fuel Tube Assembly

Note: (1) Although the involved vehicles are within the above production period range, not all vehicles in this range were sold in the U.S.

(2) This issue only affects certain Tundra and Tundra Hybrid vehicles equipped with a fuel tube assembly and surrounding components of a specific design prior to production changes to protect and secure the fuel tube. Other Toyota or Lexus vehicles sold in the U.S. are not equipped with a fuel tube and surrounding components of this design and are not affected by the condition described in Section 5 below.

3. Total Number of Vehicles Potentially Involved:

Tundra : 138,410
Tundra Hybrid : 29,769
Total : 168,179

4. Percentage of Vehicles Estimated to Actually Contain the Defect:

Toyota is unable to estimate the percentage of the involved vehicles that actually will develop a fuel leak, as this depends on how a vehicle is assembled and the conditions under which it is operated. However, as the NHTSA manufacturer portal requires an integer value be entered, Toyota has entered the value “1” in response to this question in the portal. For the purpose of this report, “1” means “unknown”.

5. Description of Problem:

The subject vehicles are equipped with a plastic fuel tube that is held in place by a clamp and routed near metallic brake lines at the top of the fuel tank. The clamp can allow the fuel tube to move into contact with the adjacent brake line under certain driving conditions. Over time, driving and other induced vibrations can cause the fuel tube to rub against the brake line, which could result in a fuel leak if the fuel tube wall wears through. A fuel smell while driving and or while parked may be noted; leaking fuel may also be observed near the right rear wheel area of the vehicle. A fuel leak in the presence of an ignition source could increase the risk of fire.

6. Chronology of Principal Events:

November 2022 – December 2022

In November 2022, Toyota received a dealer report indicating the customer's vehicle was leaking fuel from the fuel tube on top of the fuel tank assembly. The report indicated that the fuel tube appears to have been making contact with the frame rail. The fuel tube was recovered for investigation.

January 2023-July 2023

In late January, Toyota received an additional report, documenting a Toyota field staff's conversation with a dealer technician, indicating a customer's vehicle was leaking fuel near the fuel tank. As this vehicle had been repaired and no longer available for inspection, the Toyota field staff inspected two like model Tundra vehicles and noted that the fuel tube could be moved by hand and that, when moved, it could come in contact with the near-by brake line located on the frame rail. One of the two Tundra vehicles was also found to have possible contact with the brake line along the frame rail. The leaking fuel tube from the repaired vehicle noted in the field report was recovered for additional investigation.

In February, Toyota inspected the two fuel tubes noted above and found the fuel tube wall was worn through on those parts. However, it could not be determined how the fuel tube had contacted other vehicle parts, as noted in the reports, and if that contact resulted in the fuel tube leaking. Toyota began inspecting company fleet vehicles and found visible signs of fuel tube movement from its original installed position towards the brake line. During this time, the manufacturing plant implemented an in-line inspection to confirm that there was no contact between the fuel tube and brake line and that components were being assembled correctly. The manufacturing plant also surveyed vehicles in the yard and did not identify any with contact between the fuel tube and brake line.

Based on initial investigation activities, it could not be determined how the fuel tube may have contacted surrounding parts. Therefore, Toyota began vehicle dynamic tests to evaluate any potential movement of the fuel tube while driving; it observed that the fuel tube moved towards and contacted the brake line. Additionally, Toyota ran cycle tests, based on Toyota internal standards, on fuel tubes to understand if the contact observed on the aforementioned vehicles could wear through the fuel tube wall, resulting in a leak. A leak condition could not be duplicated during these standard tests. Toyota ran additional tests under more severe conditions than the standard tests, which included artificially positioning components so that there would be high contact force between the fuel tube and brake line. This testing could create wear through the fuel tube wall; however, the resulting amount of wear on the fuel tube was much greater than observed on vehicles in the market.

Toyota visited the fuel tube supplier to understand the investigation results from other recovered fuel tubes, as well as to audit the current fuel tube manufacturing process. During this audit, new and recovered fuel tubes were inspected on a check fixture, and it was found that the shape of the fuel tubes was out of specification. Modified fuel tube tooling and procedures to bring the fuel tube back into specification began to be developed.

Based on the observations of fuel tube contact to surrounding components from dynamic testing and findings from the supplier of the fuel tube shape being out of specification, Toyota began investigating the design and tolerance stack-up of the fuel tube in relation to its surrounding components. Through this engineering analysis, Toyota found that the design and worst-case tolerance stack-up of the fuel tube and surrounding components could result in fuel tube migration and then contact with a near-by brake line, which could result in a fuel leak.

Toyota also conducted a field survey to see if vehicles in the field had a contact condition between the fuel tube and brake line. Of the vehicles surveyed, Toyota found that more than half of the vehicles had a contact condition, with one having a fuel leak.

Toyota conducted various testing activities, including spray pattern and rate tests, to assess the potential effect of the fuel leak. It was determined that the leaking fuel would likely not contact potential ignition sources on the vehicle. However, Toyota evaluated the potential fuel leak condition on a vehicle parked and running for extended periods of time. Based on this evaluation, Toyota determined this condition could increase the risk of a fire in the presence of an external ignition source.

August 7, 2023

Based on the results of the above investigation, Toyota decided to conduct a voluntary safety recall campaign.

As of August 7, 2023, based on a diligent review of records, Toyota's best engineering judgment is that there are fourteen Toyota Field Technical Reports and twenty-seven warranty claims that have been received from U.S. sources that relate or may relate to this condition and which were considered in the decision to submit this report.

7. Description of Corrective Repair Action:

All known owners of the subject vehicles will be notified to return their vehicles to a Toyota dealer. The dealers will replace the fuel tube with an improved part and additional clamps at no cost to customers. Toyota is currently preparing the remedy parts for this recall. As a temporary measure until final remedy parts are available, the dealers will install protective materials and a clamp on the fuel tube at no cost to customers.

Reimbursement Plan for pre-notification remedies

The owner letter will instruct vehicle owners who have paid to have this condition remedied prior to this campaign to seek reimbursement pursuant to Toyota's General Reimbursement Plan.

8. Recall Schedule:

Notifications to owners of the affected vehicles will occur by October 9, 2023. A copy of the draft owner notification will be submitted as soon as it is available.

9. Distributor/Dealer Notification Schedule:

Notifications to distributors/dealers will be sent on August 10, 2023. Copies of dealer communications will be submitted as they are issued.

10. Manufacturer's Campaign Number:

[Interim / Remedy] 23TB09 / 23TA09