

Part 573 Safety Recall Report

20V-107

Manufacturer Name : Mercedes-Benz USA, LLC.

Submission Date : MAY 07, 2020

NHTSA Recall No. : 20V-107

Manufacturer Recall No. : 2020030009



Manufacturer Information :

Population :

Manufacturer Name : Mercedes-Benz USA, LLC.

Number of potentially involved : 1

Address : 13470 International Parkway

Estimated percentage with defect : 100 %

Jacksonville FL 32218

Company phone : 1-877-496-3691

Vehicle Information :

Vehicle 1 : 2019-2019 Smart FORTWO ELECTRIC DRIVE

Vehicle Type : LIGHT VEHICLES

Body Style : 2-DOOR

Power Train : NR

Descriptive Information : 453.391 FJ9B 1 Vehicle.

The recall population was determined through production records. Vehicles outside of the affected vehicle population have the welding of the main cell conductor that meets current production specifications.

Production Dates : MAY 24, 2019 - MAY 24, 2019

VIN Range 1 : Begin :

NR

End : NR

Not sequential

Description of Defect :

Description of the Defect : Mercedes-Benz AG ("MBAG"), the manufacturer of Mercedes-Benz vehicles has determined that on a certain Model Year ("MY") 2019 Smart EQ vehicle (453 platform), the cell-internal welding of the main cell conductors (connecting the individual cells and cell modules) of the high-voltage battery might not meet current production specifications.

FMVSS 1 : NR

FMVSS 2 : NR

Description of the Safety Risk : In case of an insufficient welding of the main cell conductor, the welded joint might detach under thermo-mechanical loads or vibrations. As a result, the electrical contact within a cell of the high-voltage battery could be interrupted, leading to immediate failure of the entire high-voltage battery. This condition would lead to a loss of propulsion and therefore a stalling of the vehicle while driving.

Depending on the characteristic of the detachment of the welded joint of the main cell conductor, an electric arc occurrence cannot be completely ruled

out. In this case, neighboring cells would ignite which could increase the risk of fire.

Description of the Cause : Due to a production deviation at a supplier, the cell-internal welding of the main cell conductors of a certain batch of high-voltage batteries might not meet the current production specifications.

Identification of Any Warning that can Occur : The customer will not receive an advance warning due to the nature of the failure mechanism.

Involved Components :

Component Name 1 : NR
Component Description : NR
Component Part Number : NR

Supplier Identification :

Component Manufacturer

Name : LG Chem Europe GmbH
Address : Otto-Volger-Strasse 7C
Sulzbach FOREIGN STATES 65843
Country : Germany

Chronology :

In the end of May 2019, the MBAG high-voltage battery plant started analysis based on deviations in the end of line test of certain batteries. The deviations were reported to the supplier of the battery cells.

In the beginning of June 2019, the cell supplier started analysis based on this information. It was determined that insufficient welding was the cause of the impaired connection of the main cell conductor. Further investigation showed that the main cell conductors might have been welded insufficiently due to a temporarily incorrect setting of the welding robot. Based on these results, potentially affected cell batches were determined by the supplier. MBAG then determined the batteries in which those cells were installed.

In parallel, MBAG started to investigate potential effects of an insufficient welding of the main cell conductors. The investigation included simulations of a main cell conductor's behavior under different loads and under consideration of different impairment stages of the welding.

In late 2019, it was determined that the welded joint might detach under certain thermo-mechanical loads or vibrations and that, in consequence, the electrical contact within a cell of the high-voltage battery might be interrupted. Based on the analysis of the cell supplier, which indicated that a very light detachment of the welded joint (with both sides of the welded joint just barely not touching each other) cannot be excluded.

Further analysis was carried out to determine potential effects in such case. In early 2020, it was determined that depending on the characteristics of the detachment, the occurrence of an electric arc cannot be completely excluded.

In parallel, MBAG determined the range of potentially affected vehicles.

On February 14, 2020, MBAG decided to conduct a recall to address the vehicles in the field.

Description of Remedy :

Description of Remedy Program : An authorized Mercedes-Benz smart dealer will replace the high-voltage battery on the affected vehicles.

Pursuant to 49 C.F.R. § 577.11(e), MBUSA does not plan to provide notice about pre-notice reimbursement to owners since none of the involved vehicles would have been previously subject to the condition described and all remain covered under the new vehicle warranty.

How Remedy Component Differs from Recalled Component : The welding of the main cell conductor meets the specifications.

High-voltage battery - Part Number A7983408911

Identify How/When Recall Condition was Corrected in Production : A change in the production procedure of our supplier ensures that this issue can no longer occur from May 29, 2019 onwards.

Recall Schedule :

Description of Recall Schedule : Dealers will be notified of the pending voluntary recall campaign on March 2, 2020. Owners notified of the voluntary recall campaign by an interim letter on March 31, 2020. A copy of all communications will be provided when available.

Planned Dealer Notification Date : MAR 02, 2020 - NR

Planned Owner Notification Date : MAR 31, 2020 - NR

* NR - Not Reported