



May 27, 2021

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VIA EMAIL

G233619

NEF-101km

PE21-010

Subject: General Motors LLC's Responses to NHTSA's April 16, 2021 Information Request in Investigation PE21-010

Dear Ms. Topka:

This letter contains General Motors LLC's ("GM") responses (the "**Responses**") to the information requests in your April 16, 2021 letter (the "**Requests**") relating to National Highway Traffic Safety Administration ("NHTSA") Preliminary Evaluation PE21-010 to investigate "allegations of rust on the driver frontal air bag inflator housings" in certain model year (MY) 2020-2021 Cadillac CT4, CT5, Escalade, Escalade ESV, XT4¹; Chevrolet Silverado 1500, Silverado 2500, Silverado 3500, Suburban, Suburban 1500, Tahoe; GMC Sierra 1500, Sierra 2500, Sierra 3500, Sierra Denali, Yukon and Yukon XL. Peer vehicles were defined as all other vehicles manufactured by GM that utilize the Subject Component manufactured by the same supplier as the Subject Vehicles. Unless otherwise defined herein, GM's Responses rely on the defined terms in the Requests.

GM has defined the timeframe of the Subject Vehicle and Peer Vehicle populations to be between the vehicle production build dates of May 1, 2020 and December 14, 2020. This window has been established as the suspect window through the GM Red X process², a statistical problem-solving tool that GM has been using for over 35 years. May 1, 2020 was established as the day on which assembly plants re-started vehicle production after the COVID-19 shut-down. December 14, 2020 was established as the day on which each of the GM assembly plants that manufactured the Subject and Peer Vehicles issued a clean breakpoint with stock review of all the Subject Components. Assembly plant inventory and supplier inventory checks started in

¹ In its April 16, 2021 letter, NHTSA listed the Cadillac XT5 as a Subject Vehicle. It was agreed to in a meeting between NHTSA and GM on April 29, 2021 that the XT4 is the proper subject vehicle as defined in the GM Internal investigation and as shared with NHTSA on March 17, 2021 and March 31, 2021. Reference USGs 5020 & 5024

² The GM RedX process and study for this condition has been included in Response to Request #9 as well as explained to NHTSA on March 31, 2021 (USG 5024)

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November, and all inventory that was found to be suspect was quarantined by December 15, 2020.

At this time, and based on ongoing investigations by both GM and Autoliv ASP, Inc. (“**Autoliv**”), GM believes that there is a correlation between the delay in production during the COVID-19 shutdown and premature corrosion initiation on the surface of the inflator housing produced by Autoliv which, in some cases, caused rust development.

GM has defined the Peer Vehicles as those vehicles that were built during the May 1, 2020 to December 14, 2020 timeframe, in the United States, where the assembly plant was subject to a production shut-down due to COVID-19. These peer vehicles have the same Subject Component, the driver frontal airbag module inflator housing, made by the same manufacturer, Autoliv. These vehicles have been identified as certain 2020-2021 Chevrolet Blazer, Cadillac XT5 and Cadillac XT6.

PRELIMINARY STATEMENT

GM prepared its Responses by: (i) identifying, in consultation with the appropriate GM business personnel, the primary electronic databases and document repositories in GM’s custody and control that store potentially responsive documents and information in the ordinary course of business, as more fully identified in the Responses below; and (ii) conducting a reasonable search, as appropriate, of these databases and document repositories for responsive documents and information. GM objects to the definitions of “document” and “GM” in the Requests as overbroad, unreasonably burdensome, and not reasonably tailored to records that might be expected to bear relevant and responsive information. GM’s document production does not contain: (i) attorney-client privileged information or information protected as attorney-work product; and (ii) documents generated or archived in these locations after the dates that GM conducted its final searches. GM construes the Information Request as pertaining to vehicles manufactured for sale in the United States and its territories.

GM’s document production is contained in the folder titled G233619_1_GM. Certain portions of these documents are exempt from public disclosure under the Freedom of Information Act (5 U.S.C. § 552(b)(4)) (“**FOIA**”) and 49 CFR part 512, and have been redacted in the copy contained in the folder. GM has submitted the unredacted nonpublic copy of its document production (in the folder titled G233619_2_GM_CONF) to the NHTSA Office of Chief Counsel under 49 C.F.R. part 512.

Some of the documents in GM’s production contain personally identifiable information (“**PII**”) (e.g., vehicle registration information or VIN, employee names, and customer/employee contact information). GM today submits documents with unredacted PII with the understanding that NHTSA (or GM, if NHTSA prefers) will redact any PII before disclosing these documents to the public.

REQUESTS AND RESPONSES

REQUEST 1:

State, by model and model year, the number of subject vehicles GM has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by GM, state the following:

- a. Vehicle identification number (VIN);
- b. Make;
- c. Model;
- d. Model Year;
- e. Subject component part number(s) and design version(s) installed as original equipment;
- f. Name of supplier of original equipment part
- g. Date of manufacture;
- h. Date warranty coverage commenced; and
- i. The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).

Provide the table in Microsoft Access 2010, or a compatible format, entitled "PRODUCTION DATA."

GM RESPONSE:

In response to your request that GM "[s]tate, by model and model year, the number of subject vehicles GM has manufactured for sale or lease in the United States," GM provides the following table:

		MODEL YEAR		
MAKE	MODEL	2020	2021	TOTAL
Cadillac	CT4	4,378	3,589	7,967
Cadillac	CT5	5,825	5,742	11,567
Cadillac	Escalade		8,344	8,344
GMC	Sierra	87,121	69,128	156,249
Chevrolet	Silverado	202,817	144,135	346,952
Chevrolet	Suburban		17,581	17,581
Chevrolet	Tahoe		48,795	48,795
Cadillac	XT4	5,585	10,208	15,793
GMC	Yukon		34,827	34,827
	Total	305,726	342,349	648,075

TABLE 1-1: SUBJECT VEHICLES

MAKE	MODEL	MODEL YEAR		TOTAL
		2020	2021	
Chevrolet	Blazer	22,527	29,765	52,292
Cadillac	XT5	10,003	14,626	24,629
Cadillac	XT6	6,076	7,486	13,562
	Total	38,606	51,877	90,483

TABLE 1-2: PEER VEHICLES

GM has produced the information requested in subparts (a) through (i) in the G_1_GM folder in the subfolder labeled “Q_01”. Refer to the Microsoft Access 2010 file labeled “Q_01_PRODUCTION DATA.”

REQUEST 2:

State the number of each of the following, received by GM, or of which GM is otherwise aware, which relate to, or may relate to, the alleged defect in the subject and peer vehicles:

- a. Consumer complaints, including those from fleet operators;
- b. Field reports, including dealer field reports;
- c. Reports involving a crash, injury or fatality;
- d. Reports involving a fire;
- e. Property damage claims;
- f. Third-party arbitration proceedings where GM is or was a party to the arbitration; and
- g. Lawsuits, both pending and closed, in which GM is or was a defendant or codefendant.

For subparts “a” through “g” state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for items “c” through “g” provide a summary description of the alleged problem and causal and contributing factors and GM’s assessment of the problem, with a summary of the significant underlying facts and evidence. For items “e” and “f” identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

GM RESPONSE:

In response to subparts (a) through (g) for the Subject Vehicles (as defined in the Requests, the “**Subject Vehicles**”), GM provides the following tables, which GM prepared by conducting a

reasonable keyword search for potentially responsive claims in several databases³.

TYPE OF REPORT	GM REPORTS	SUBCATEGORIES				
		CORRESPONDING TO NHTSA (VOQ) REPORTS	NUMBER WITH PROPERTY DAMAGE	NUMBER WITH CRASH	NUMBER WITH FIRE	NUMBER WITH INJURIES/ FATALITIES
Owner Reports	9	0	0	0	0	0/0
Field Reports	70	1	0	0	0	0/0
Not-In-Suit Claims	0	0	0	0	0	0/0
Third Party Arbitration Proceedings	0	0	0	0	0	0/0
Product Liability Lawsuits	0	0	0	0	0	0/0
Total Reports (Including Duplicates)	79	1	0	0	0	0/0
Total Vehicles with Reports (Unique VIN)	78	1	0	0	0	0/0

TABLE 2-1: SUMMARY OF CLAIMS RESPONSIVE TO REQUEST 2A-2G FOR THE SUBJECT VEHICLES

TYPE OF REPORT	GM REPORTS	SUBCATEGORIES				
		CORRESPONDING TO NHTSA (VOQ) REPORTS	NUMBER WITH PROPERTY DAMAGE	NUMBER WITH CRASH	NUMBER WITH FIRE	NUMBER WITH INJURIES/ FATALITIES
Owner Reports	1	0	0	0	0	0/0
Field Reports	3	0	0	0	0	0/0
Not-In-Suit Claims	0	0	0	0	0	0/0
Third Party Arbitration Proceedings	0	0	0	0	0	0/0
Product Liability Lawsuits	0	0	0	0	0	0/0
Total Reports (Including Duplicates)	4	0	0	0	0	0/0
Total Vehicles with Reports (Unique VIN)	4	0	0	0	0	0/0

TABLE 2-2: SUMMARY OF CLAIMS RESPONSIVE TO REQUEST 2A-2G FOR THE PEER VEHICLES

As summarized in Tables 2-1 and 2-2, GM is aware of 78 (53 corresponding warranty) unique claims involving the Subject Vehicles and 4 (1 corresponding warranty) unique claims involving the Peer Vehicles that may be responsive to Request 2. In determining the responsiveness of a claim, GM erred on the side of coding the claim as responsive, even if the evidence in GM's possession linking the claim to the alleged defect (as defined in the Requests, the "Alleged Defect") was implausible, inconclusive, or circumstantial. For example, a claim with the potential effect of the alleged defect, defined as an airbag light on while turning the steering wheel or pressing on the horn, but without confirmed rust in the inflator housing, is included as a responsive claim. The decision to include those claims without confirmed rust on the inflator, is

³ These databases include: Customer Assistance Center (CAC), Product Assistance Center (PAC), Business Resource Center (BRC), Technical Assistance Center (TAC), Field Information Network Database (FIND), Company Vehicle Evaluation Program (CVEP), Captured Testing Fleet (CTF), COMPASS, Early Quality Feedback (EQF), Problem Resolution Tracking System (PRTS), Field Product Report Database (FPRD), Global Incident Management System (GIMS), and GM Legal records.

due to the timing of the technical service bulletin (TSB). The TSB was issued on March 18, 2021 after the timeframe where most claims were made, and therefore there was not a bulletin to assist with looking for rust as a potential contamination. Accordingly, the claim totals in Tables 2-1 and 2-2 may be conservative. In addition, at a much lower claim count, those with a confirmed rust presence at the connector have also been included as responsive claims.

In response to subparts “c” and “d,” GM is not aware of any relevant incidents or claims involving a crash, airbag non-deployment, injury, fatality or property damage. With respect to subparts “e” and “f,” GM is not aware of any third-party arbitration proceedings or lawsuits related to the Alleged Defect in the Subject Vehicles

Additional information about the claims is available in the document production that GM is providing in response to Request 4, and GM’s assessment of the Alleged Defect is provided in its Response to Request 13.

VOQ Analysis

There were 15 VOQs listed in the Request, none of which can be conclusively linked to the Alleged Defect:

GM identified a corresponding relevant record for 2 out of 15 VOQs:

- 5 of the VOQ claims were outside of the Subject Vehicle scope:
 - 1 was a vehicle built on an older platform without the subject component supplier inflator housing. (11384282)
 - 2 were vehicles of an older platform and model year than the Subject and Peer Vehicle populations. (11343883, 1339175)
 - 2 were vehicles built prior to May 1, 2020:
 - In addition to the build month, GM’s Engineering Assessment for the vehicle listed in VOQ (11385428) was that the crash was below the threshold for airbag deployment.
 - In addition to the build month, there is no history of an airbag light on for the vehicle listed in VOQ (11395340) nor is there a DTC code set in its history.
- 7 of the VOQ claims are not related to the driver airbag or inflator. They are related to the performance of a seat air bag electrical connection, for which GM has an open field action.⁴ (11360339, 11362839, 1363644, 11363479, 11362218, 11361893, 11374129)
- 1 VOQ (11390093) claim of a crash with a non-deployment was evaluated as part of GM’s Engineering Assessment, and the vehicle did not have a history of an airbag light on with a DTC in the history. In addition, the crash was below the threshold for airbag deployment. Because there was no history of an air bag inflator contamination, this claim was determined not to be a relevant claim and was not included in GM’s assessment.

⁴ GM field action N202310850. Notably, the performance of the seat air bag electrical connection was not compromised by any contamination.

- 1 VOQ claim, 11376429, has no corresponding claim within the GM system. This VIN has a history of a warranty record with a B0001 DTC set in the history, but the customer declined further diagnosis and work on the vehicle.
- 1 VOQ claim, 11385267⁵, has a corresponding claim within the GM system and is provided in the Microsoft Access file labeled “Q_03_REQUEST NUMBER TWO DATA” in the subfolder labeled “Q_03” in the G233619_1_GM folder.

REQUEST 3:

Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 2, state the following information:

- a. GM’s file number or other identifier used;
- b. The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);
- c. Vehicle owner or fleet name (and fleet contact person), street address, email address and telephone number;
- d. Vehicle’s VIN;
- e. Vehicle’s model year;
- f. Vehicle’s mileage at time of incident;
- g. Incident date;
- h. Report or claim date;
- i. Whether a crash is alleged;
- j. Whether a fire is alleged;
- k. Whether property damage is alleged;
- l. Number of alleged injuries, if any; and
- m. Number of alleged fatalities, if any.

Provide this information in Microsoft Access 2010, or a compatible format, entitled “REQUEST NUMBER TWO DATA.”

GM RESPONSE:

GM has produced the requested information for the Subject Vehicles in the G233619_1_GM folder in the subfolder labeled “Q_03”. Refer to the Microsoft Access 2010 file labeled “Q_03_REQUEST NUMBER TWO DATA.”

REQUEST 4

Produce copies of all documents related to each item within the scope of Request No. 2. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method GM used for organizing the documents. Describe in detail the search methods and search criteria used by GM to identify the items in response to Request No. 2.

⁵ The claim for VOQ 11385267 was for an air bag light on, however the evidence for root cause is with the connector attachment and not rust. The claim was included due to GM’s decision to code claims conservatively.

GM RESPONSE:

With respect to Request 4, GM CAC, PAC, TAC and Legal records are GM's primary repositories of potentially responsive documents in the ordinary course of business. GM identified responsive documents by conducting a keyword search of these records for potentially responsive claims and reviewed the associated claim file to confirm the responsiveness of the claim. GM is producing the responsive, nonprivileged documents associated with responsive claims listed in Table 2-1 in the Microsoft Access file labeled "Q_03_REQUEST NUMBER TWO DATA" in the subfolder labeled "Q_03" in the G233619_1_GM folder. GM has organized the records by the GM file number.

Additionally, this response was compiled and prepared upon review of documents produced by various GM locations. This response does not include documents generated or received at those GM locations after their searches.

REQUEST 5

State, by model and model year, a total count for all of the following categories of claims, collectively, that have been paid by GM to date that relate to, or may relate to, the alleged defect in the subject vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

Separately, for each such claim, state the following information:

- a. GM's claim number;
- b. Vehicle owner or fleet name (and fleet contact person), street address, email address and telephone number;
- c. VIN;
- d. Repair date (in "yyyy/mm/dd" date format);
- e. Vehicle mileage at time of repair;
- f. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
- g. Labor operation number(s);
- h. Problem codes;
- i. Diagnostic trouble codes;
- j. Replacement part number(s) and description(s);
- k. Concern stated by customer;
- l. Cause as stated on the repair order;
- m. Correction as stated on the repair order; and
- n. Additional comments, if any, by dealer/technician relating to claim and/or repair.

Provide this information in Microsoft Access 2010, or a compatible format, entitled “WARRANTY DATA.”

GM RESPONSE

To collect warranty data responsive to this request, GM conducted a reasonable keyword search of the GM Global Analysis and Reporting Tool (“GART”), GM’s primary repository of potentially responsive warranty claim information in the ordinary course of business.

Table 5-1, below, summarizes the warranty claims for the Subject Vehicles that may relate to the Alleged Defect.⁶ There are a total of 927 warranty claims (923 unique VINs) for the Subject Vehicles and 56 warranty claims (56 unique VINs) for the Peer Vehicles that were categorized as responsive.⁷ Of the 927 Subject Vehicle claims, 23 claims had a causal notation related to that of rust or corrosion at the inflator housing. Of the 56 Peer Vehicle claims, 1 claim had a causal notation related to that of rust or corrosion at the inflator housing. This total includes 69 claims that were also reported as a field report in Response 2.

	No Rust mentioned	Corrosion/Rust mentioned	Grand Total
CT4	8	1	9
CT5	16	1	17
Escalade	2		2
Sierra	287	5	292
Silverado	349	9	358
Suburban	12	1	13
Tahoe	104	3	107
XT4	67	2	69
Yukon	59	1	60
Grand Total	904	23	927

TABLE 5-1: SUMMARY OF SUBJECT VEHICLE WARRANTY CLAIMS

⁶ GART does not contain the vehicle owner’s name or telephone number. Additionally, some replacement part numbers, part descriptions and customer concern code descriptions are not included in the GM warranty database. In response to subpart (j), the diagnostic trouble code (DTC) is not captured separately and, if available, is included in one of the verbatim fields.

⁷ GM identified responsive records based on the information supplied to GM by the servicing dealerships, which can contain material errors and omissions. Warranty records, for example, do not always accurately or completely describe the condition of the allegedly defective part at the time of the warranty correction, and service personnel may not consistently classify warranty repairs using the correct labor and trouble codes.

	No Rust mentioned	Corrosion/Rust mentioned	Grand Total
Blazer	40	1	41
XT5	1		1
XT6	14		14
Grand Total	55	1	56

TABLE 5-2: SUMMARY OF PEER VEHICLE WARRANTY CLAIMS

Similar to the approach GM took to respond to Request 2, in determining the responsiveness of a claim to this Request, GM erred on the side of coding the claim as responsive, even if the evidence in GM’s possession linking the claim to the Alleged Defect was implausible, inconclusive, or circumstantial. For example, a claim with the potential effect of the alleged defect, defined as an airbag light on while turning the steering wheel or pressing on the horn, but without confirmed rust in the inflator housing, is included as a responsive claim. The decision to include those claims without confirmed rust on the inflator, is due to the timing of the technical service bulletin (TSB). The TSB was issued on March 18, 2021, after the timeframe where most claims were made, and therefore there was not a bulletin to assist with looking for rust as a potential contamination. Accordingly, the claim totals in Tables 5-1 and 5-2 may be conservative. In addition, at a much lower claim count, those with a confirmed rust presence at the connector have also been included as responsive claims.

Table 5-3, below, summarizes the Incidents Per Thousand Vehicles (“IPTV”) for the Subject Vehicles and Peer Vehicles at 10 Months in Service (“MIS”) by model year.

Vehicle Group	IPTV @ [10] MIS
Subject Vehicle All	2.1
Peer Vehicle All	1.3
Subject Vehicle w/rust/corrosion	0.05
Peer Vehicle w/rust/corrosion	1.026

TABLE 5-3: SUBJECT VEHICLE AND PEER VEHICLE WARRANTY CLAIM RATES

GM has produced the requested information in subparts (a) through (n) in the G233619_1_GM folder in the subfolder labeled “Q_05”. Refer to the Microsoft Access 2010 file labeled “Q_05_WARRANTY DATA.” In response to subparts (l) and (m), GM has included in these records all available dealer-provided “verbatim text” in the GART database relating to the responsive claims that are currently in GM's possession⁸.

REQUEST 6

Describe in detail the search methods and search criteria used by GM to identify the claims in response to Request No. 5, including the labor operations, problem codes, diagnostic trouble codes, part numbers and any other pertinent parameters used.

Provide a list of all labor operations, labor operation descriptions, problem codes, and problem code descriptions, diagnostic trouble codes and diagnostic trouble code descriptions applicable to the alleged defect in the subject vehicles. State whether the diagnostic trouble codes are automatically reported to the warranty database electronically or manually entered into the warranty database by a claims administrator.

State, by make and model year, the terms of the new vehicle warranty coverage offered by GM on the subject vehicles (i.e., the number of months and mileage for which coverage is provided and the vehicle systems that are covered). Describe any extended warranty coverage option(s) that GM offered for the subject vehicles and state by option, model, and model year, the number of vehicles that are covered under each such extended warranty.

GM RESPONSE:

To populate Table 5-1, GM searched the GART warranty database for the labor codes that GM identified as potentially related to the Alleged Defect in the Subject Vehicles and Peer Vehicles. These labor codes are summarized in Table 6-1. Each warranty record may have up to five verbatim fields. All verbatim claim fields were read, and a claim was determined to be responsive if the verbatim indicated that the claim may have been related to the Alleged Defect in the Subject Component.

LABOR CODE	LABOR CODE DESCRIPTION
5430840	Terminal Replacement
5430902	Wire-to-Wire Repair
5430922	Connector Reconnection
6450010	Steering Wheel Airbag Coil Replacement
6450180	Restraints Control Module Replacement
6450380	Steering Wheel Airbag Replacement
6459939	Airbags/Electronics - Customer Concern Not Duplicated (CCND)
7440130	Steering Wheel Replacement

⁸ The verbatim text is provided to GM by the dealer that serviced the warranty claim and reflects both dealer-and customer-provided comments relating to the claim.

TABLE 6-1: LABOR CODES USED IN GART WARRANTY SEARCH

Table 6-2 summarizes the relevant diagnostic trouble codes that may be related to the Alleged Defect in the Subject Vehicles. The diagnostic trouble codes are manually entered into the warranty database in one of the five verbatim fields and may be subject to technician input error or omission.

DTC CODE	DTC CODE DESCRIPTION⁹
B0001	Steering Wheel Module Stage 1 High Control
B0002	Steering Wheel Module Stage 2 High Control
B0012	Driver Steering Wheel Air Bag Stage 1 High Control
B0013	Driver Steering Wheel Air Bag Stage 2 High Control

TABLE 6-2: DTC CODES USED IN GART WARRANTY SEARCH

Table 6-3 summarizes the terms of new vehicle warranty coverage offered by GM on the Subject Vehicles and Peer Vehicles:

MODEL YEAR	MAKE	WARRANTY TYPE	WARRANTY TERMS
2020-2021	Chevrolet	Limited Bumper-To-Bumper	3 year / 36,000 miles
2020-2021	Cadillac	Limited Bumper-To-Bumper	4 year / 50,000 miles
2020-2021	GMC	Limited Bumper-To-Bumper	3 year / 36,000 miles

TABLE 6-3: NEW VEHICLE WARRANTY COVERAGE OFFERED BY GM ON SUBJECT VEHICLES

Many different optional extended warranty plans were available for the Subject Vehicles through GM dealerships. These plans were offered at different prices and for varying lengths of time, based on a customer's preference.

REQUEST 7

Produce copies of all service, warranty, and other documents that relate to, or may relate to, the alleged defect in the subject vehicles, that GM has issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities. This includes, but is not limited to, bulletins, advisories, informational documents, training documents, or other documents or communications, with the exception of standard shop manuals. Also include the latest draft copy of any communication that GM is planning to issue within the next 120 days.

GM RESPONSE:

The documents that are responsive to Request 7 are in the G233619_1_GM folder in the subfolder labeled "Q_07".

REQUEST 8

Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to,

⁹ The DTC description may vary based on the symptom code associated with the fault.

the alleged defect in the subject vehicles that have been conducted, are being conducted, are planned, or are being planned by, or for, GM. For each such action, provide the following information:

- a. Action title or identifier;
- b. The actual or planned start date;
- c. The actual or expected end date;
- d. Brief summary of the subject and objective of the action;
- e. Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and
- f. A brief summary of the findings and/or conclusions resulting from the action.

For each action identified, provide copies of all documents related to the action, regardless of whether the documents are in interim, draft, or final form. Organize the documents chronologically by action.

GM RESPONSE:

GM identified responsive production investigations by conducting a reasonable search in GM's Global Vehicle Safety-Case Observation Review and Evaluation ("GVS-CORE") database, which is the primary electronic records database for GM's Safety and Field Investigations organization. GM is aware of the following product investigations conducted by GM or at GM's direction that relate to the Alleged Defect:

<u>Action 8-A: GM Internal Investigation N20-231875</u>	
Start/End Dates	November 17, 2020 – February 25, 2021
Involved Engineering Groups	GM Global Safety and Field Investigations, GM Global Engineering
Description	GM investigated claims of airbag light on due to an alleged inflator rust causing a malfunction in the Subject Vehicles.
Outcome	On February 25, 2021, upon review of the collected data, GM's Safety Field Action Decision Authority (SFADA) decided to Close with no Field Action. A Technical Service Bulletin (TSB) was issued in order to provide direction to the dealership for warranty service in the event that a vehicle was identified that had a higher than average amount of rust that may have caused an intermittent resistance spike, causing the airbag light to be illuminated, with a history code of a relevant DTC.
Associated Documents	Information and documents contained in GVS-CORE related to investigation N20-231875. The files are in the G233619_1_GM and G233619_2_GM_CONF folders labeled as 8A 231875 in the index file.

<u>Action 8-B: GM Internal Investigation N21-233618</u>	
Start/End Dates	April 12, 2021 - TBD
Involved Engineering Groups	GM Global Safety and Field Investigations, GM Global Engineering
Description	Upon receipt of PE21-010, GM, per its process, opened an internal investigation to update data relating to claims of airbag light on due to an alleged inflator rust causing a malfunction in the Subject Vehicles and Peer Vehicles.
Outcome	This investigation has not been completed at the time of this response's submission on May 27, 2021.
Associated Documents	Information and documents will be provided in a supplemental response, on or before June 25, 2021, unless otherwise communicated.
<u>Action 8-C: GM Engineering Studies - PRTS</u>	
Start/End Dates	November 17, 2020 – May 5, 2021
Involved Engineering Groups	GM Global Engineering
Description	Problem Resolution Tracking System (PRTS) records associated with the Alleged Defect due to claims of airbag light on with an alleged inflator rust in the Subject Vehicles.
Outcome	The conclusions are consistent with GM's Response to Request 13 as it relates to causal or contributory factors, failure mechanisms, and failure modes.
Associated Documents	Information and documents contained in the PRTS system related to this action are in the G233619_2_GM_CONF folder in the PRTS subfolder.

TABLE 8-1: GM INVESTIGATIONS OF THE ALLEGED DEFECT IN THE SUBJECT AND PEER VEHICLES

GM is producing the nonprivileged documents that are responsive to Request 8 in the G233619_1_GM and G233619_2_GM_CONF folders in the subfolders labeled "Q_08". The index file "NHTSA IR PE21-010 Driver Airbag Light Index.xlsx" provided is a directory of the files with the original file names and is labeled as listed in Table 8-1.

REQUEST 9

With respect to GM's Project Red X investigation into the effects of the alleged defect, provide all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries, evaluations and/or reports including but not limited to the following:

- a. Project description;
- b. Project protocols;
- c. Interim reports;
- d. Final report;
- e. Any other relevant information;
- f. Participants; and
- g. Participant affiliation

GM RESPONSE:

GM is producing the documents that are responsive to Request 9 for the GM Project Red X investigation in the G233619_2_GM_CONF folder in the subfolder labeled “Q_09”. The index file provided is a directory of the files with the original file names and is labeled as Red X.

REQUEST 10

Describe all modifications or changes made by, or on behalf of, GM in the design, material composition, manufacture, quality control, supply, or installation of the subject component, from the start of production to date, which relate to, or may relate to, the alleged defect in the subject vehicles. For each such modification or change, provide the following information:

- a. The date or approximate date on which the modification or change was incorporated into vehicle production;
- b. A detailed description of the modification or change;
- c. The reason(s) for the modification or change;
- d. The part number(s) (service and engineering) of the original component;
- e. The part number(s) (service and engineering) of the modified component;
- f. Whether the original unmodified component was withdrawn from production and/or sale, and if so, when;
- g. When the modified component was made available as a service component; and
- h. Whether the modified component can be interchanged with earlier production components.

Also, provide the above information for any modification or change that GM is aware of which may be incorporated into vehicle production within the next 120 days.

GM RESPONSE:

There were no changes to the driver airbag module or inflators during the time period between May 1, 2020 to December 14, 2020. The vehicles were built with the listed part numbers (production and service are identical), based on color and trim for that vehicle, with one of the following for each of the subject and peer vehicles:

Program	Silverado LD/HD	Sierra LD/HD	Sierra Denali	Tahoe/ Suburban	Yukon	Yukon Denali	Escalade	CT4	CT5	XT4
MY	2020- 2021	2020- 2021	2020- 2021	2021	2021	2021	2021	2020 – 2021	2020 – 2021	2020 – 2021
Production/ Service PN(s)	84750512	84750517	84750520	84823462	84823467	84823470	84823455	84848654	84848654	84756697
	84750513	84750518	84750521	84823463	84823468	84823471	84823456	86779688	86779688	
	84750514			84823464		84823472	84823457	84848654	84848654	
	84750515			84823465			84823459	84925857	84925857	

TABLE 10-1: PRODUCTION & SERVICE PART NUMBERS FOR SUBJECT VEHICLES

Program	Blazer	XT6	XT5
MY	2020 - 2021	2020 - 2021	2020 - 2021
Production/Service PN(s)	84898026	84763634	84567622
	84898025	84903367	84569170
		84903368	84569173
		84903370 (MY21 only)	84651437

TABLE 10-2: PRODUCTION & SERVICE PART NUMBERS FOR PEER VEHICLES

REQUEST 11

Produce one of each of the following:

- Exemplar samples of each design version of the subject component; and
- Field return samples of the subject component exhibiting the subject failure mode.
- Any kits that have been released, or developed, by GM for use in service repairs to the subject component/assembly which relate, or may relate, to the alleged defect in the subject vehicles.

GM RESPONSE:

The requested components were shipped on May 25, 2021. The shipment includes the field return parts listed in Table 11-1. The Exemplar sample will be shipped on or before June 18, 2021. Per agreement with NHTSA, the live modules will be shipped directly to NHTSA's VRTC location in Ohio.

Model Years	Part Number	Description	Warranty	VIN
2021 Chevrolet Silverado	84750513	Driver airbag module	Intermittent airbag light on; DTC B0012; rust on inflator	3GCPYEEK8MG109046
2021 Chevrolet Tahoe	84823464	Driver airbag module	Airbag light on; rust on inflator	1GNSCNKD3MR144678
2021 Chevrolet Silverado	84750513	2021 Chevrolet Silverado	Exemplar Sample	
2021 Chevrolet Tahoe	84823464	2021 Chevrolet Tahoe	Exemplar Sample	

TABLE 11-1: SUBJECT COMPONENT SAMPLES FOR THE SUBJECT VEHICLES

REQUEST 12:

State the number of each of the following that GM has sold that may be used in the subject vehicles by component name, part number (both service and engineering/production), model and model year of the vehicle in which it is used and month/year of sale (including the cut-off date for sales if applicable):

- a. Subject component; and
- b. Any kits that have been released, or developed, by GM for use in service repairs to the subject component/assembly.

For each component part number, provide the supplier's name, address, and appropriate point of contact (name, title, and telephone number). Also identify by make, model and model year, any other vehicles of which GM is aware that contain the identical component, whether installed in production or in service, and state the applicable dates of production or service usage.

GM RESPONSE:

The requested sales information for the Subject Component in both production and service versions is provided in the G233619_1_GM folder; subfolder labeled "Q_12." The dealer RO file summarizes the sale volume by make, model and model year and date of sale. The make, model and model year are not provided in the customer paid file since VIN information is not available.

This data has limited analytical value in analyzing the field performance of a motor vehicle component, because the records do not contain sufficient information to establish the reason for the part sale or, in the case of a dealer sale, whether the part was actually used to repair a customer vehicle or is being held as dealer stock. Therefore, it is difficult to draw any conclusions regarding the performance of the Subject Component, or malfunctions thereof, from this data.

REQUEST 13:

Furnish GM's assessment of the alleged defect in the subject and peer vehicle models, including:

- a. The causal or contributory factor(s);
- b. The failure mechanism(s);
- c. The failure mode(s);
- d. The risk to motor vehicle safety that it poses;
- e. What warnings, if any, the operator and the other persons both inside and outside the vehicle would have that the alleged defect was occurring or subject component was malfunctioning; and
- f. The reports included with this inquiry.

GM RESPONSE:

GM's Assessment of the Alleged Defect in the Subject Vehicles:

- a. At this time, and based on ongoing investigations by both GM and Autoliv, GM believes that there is a correlation between the delay in production during the COVID-19 shutdown and premature corrosion initiation on the surface of the inflator housing produced by Autoliv which, in some cases, caused rust development.
- b. In the rare instance when a rust particle dislodges from the Driver Airbag inflator housing and enters the airbag connector prior to assembly, it may cause an intermittent resistance spike at the airbag connector. This failure mechanism results in a notification to the customer to Service Airbag, with a light illumination.
 - i. The failure mechanism was identified by GM through the Red X technical process, and bench testing also confirmed that:
 - a. The condition only generates excessive resistance in the airbag electrical system when the steering wheel horn cover is manipulated or when the steering wheel is turned.
 - b. This excessive resistance is momentary and below the level that would prevent airbag deployment.
 - c. The condition generates an airbag MIL and the DTC that latches for 100 ignition cycles – effectively warning the driver that the vehicle requires service. The vehicle's airbag remains functional.
- c. The failure mode that caused this early onset corrosion and rust has yet to be determined by GM or the supplier, Autoliv.
- d. This condition does not constitute a defect or pose an unreasonable risk to motor vehicle safety for the following reasons:
 - i. There are zero accidents, injuries, non-deployments, fatalities or fires associated with this condition.

- ii. There is a low rate of occurrence 2.1 IPTV @ 10 MIS¹⁰ for all warranty claims, and 0.05 IPTV for those with a notation of visible rust and/or corrosion on the inflator.
- iii. Condition declares early in vehicle life with Service Airbag light illumination.
- iv. Once the connection of the driver airbag module to the steering wheel and clock-coil is made at the plant, or at the dealership for service, there is no longer an opportunity for rust migration. The connector is sealed and has gold terminals, so there is no expectation of fretting corrosion.¹¹
- v. Any potential impact to airbag functionality is momentary and will be accompanied by appropriate warning.
- vi. The airbag will deploy as long as the resistance is less than 10 ohms.
- vii. The SDM is not impacted by rust or corrosion at the inflator surface in any way and when initiated, and the pertinent threshold is met, will command the deployment of the airbag.
- viii. Corrosion level validation testing is standard practice for all airbag modules, and all of the Subject and Peer Vehicles passed the validation testing for extensive corrosion, including highly rusted inflator modules, with no issue of non-deployment.¹²
- e. The operator and persons inside the vehicle are alerted to the malfunction, and the malfunction is detectable in the following ways:
 - i. Service Airbag light illumination. DTC code is saved in history for intermittent light illumination claims.
 - ii. OnStar notification, for those subscribed to OnStar, via email, text and/or app notice.
 - iii. Resistance above 4.4Ω for greater than 2 seconds will set DTC B0001, B0002, B0012 or B0013 and turn on the service airbag light. Under 10 ohms, the airbag is likely to deploy as designed if there is only one high resistance loop and there is no loss of the 12V battery.
- f. Please reference responsive records and documents provided in the G233619_2_GM_CONF folder in the subfolder labeled “Q_8” and “Q_9.”

CONCLUSION

GM concludes, based on current data, that the Subject Component in the Subject and Peer Vehicles is not defective and does not pose an unreasonable risk to motor vehicle safety. GM's Responses are based upon its investigation to date and reflect its current information and assessment. GM continues to monitor the performance of the Subject Component in the Subject and Peer Vehicles in the field and reserves the right to supplement or amend its Responses as appropriate.

¹⁰ This rate was calculated based on the number of warranty claims that GM determined to be responsive at a conservative definition, including notations of rust and also claims that are potentially related, but without a notation of rust or corrosion on the inflator.

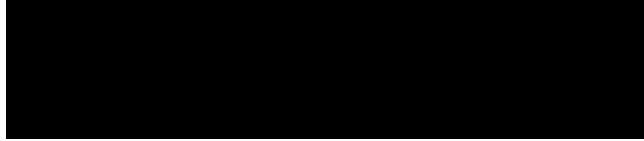
¹¹ The RedX conclusion with the rationale for this statement was shared with NHTSA on March 31, 2021, USG 5024

¹² Shared with NHTSA on March 31, 2021. Reference USG 5024, page 8

Letter to Tanya Topka
PE21-010 Response
May 27, 2021

Please contact me or Matt Jerinsky (matthew.jerinsky@gm.com), of our Washington, D.C. office, if you require further information about this response or the nature or scope of our searches.

Sincerely,



Regina Carto, Executive Director
Global Safety Field Investigations

cc: Mr. Kevin Miller
ODI_IRresponse@dot.gov

Enclosures

G233619_1_GM – Public copy of GM's document production