

TOYOTA

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Toyota Motor North America

Vehicle Safety & Compliance
Liaison Office
Mail Stop: W4-2D
6565 Headquarters Drive
Plano, TX 75024

June 21, 2019

Heidi King
Deputy Administrator
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: Petition for Exemption from Notification and Remedy Requirements
Inconsequential Noncompliance with FMVSS 108 - Certain MY 2013-2019 Lexus Vehicles

Dear Heidi King:

Pursuant to 49 U.S.C. 30118(d) and 30120(h), and the provisions of 49 CFR Part 556, on behalf of Toyota Motor Corporation ["TMC"], a Japanese corporation located at 1, Toyota-cho, Toyota-city, Aichi-ken, 471-8571, Japan and the Toyota manufacturing entities identified in the attached Noncompliance Information Report dated May 30, 2019 submitted in accordance with the requirements of 49 CFR Part 573 [collectively referred to as "Toyota"], I hereby submit three copies of the enclosed petition to the National Highway Traffic Safety Administration seeking an exemption from the notification and remedy requirements of 49 U.S.C. Chapter 301 on the basis that a noncompliance in certain MY 2013-2019 Lexus vehicles as identified in Toyota's Noncompliance Information Report is inconsequential as it relates to motor vehicle safety.

Please contact me should you have any questions about this petition.

Sincerely,



Cory Hoffman
General Manager
Toyota Motor North America, Inc.

Cc: Jeffrey Giuseppe, Otto Matheke

Enclosures

Petition for Inconsequential Noncompliance
Attachment 1 (Noncompliance Information Report)
Attachment 2 (Data Table)

ES19-002412

**Petition for Exemption from Notification and Remedy Requirements
Pursuant to 49 CFR Part 556**

**Inconsequential Noncompliance with FMVSS No. 108
In Certain 2013-2019 Model Year Lexus Vehicles**

Executive Summary

Toyota submitted the attached Noncompliance Information Report concerning certain 2013-2018 model year Lexus ES and 2013-2019 model year Lexus GS vehicles that may not meet certain photometry requirements of FMVSS No. 108, Rear Reflex Reflectors (See Attachment 1). The supplier found that the photometry performance of the subject reflex reflector could be degraded during the manufacturing process under certain specific conditions, resulting in a potential noncompliance with certain minimum photometric values. Toyota estimated that less than 0.5% of the total number of affected vehicles (502,034) may have reflectors with photometry performance values below the FMVSS requirement.

Based on an analysis of the nature and extent of the noncompliance and the investigation results described below, Toyota has determined that the difference in luminosity between a compliant reflector and a noncompliant one in the “worst case” (approximately -18 percent for the subject reflectors) is not detectible by the human eye.

NHTSA has granted inconsequentiality petitions in the past when the change in luminous intensity is 25 percent or less. The NHTSA sponsored study “Driver Perception of Just Noticeable Differences of Automotive Signal Lamp Intensities” (DOT HS 808 209, September 1994) and The University of Michigan Transportation Research Institute (UMTRI) “Just Noticeable Differences for Low-Beam Headlamp Intensities.” (UMTRI-97-4, February 1997) found that a change in luminous intensity of 25 percent or less is not noticeable by most drivers. In the Subaru petition, discussed below, the agency stated that the same considerations applied to reflectors as to lamps.¹

In this document, Toyota provides its data, views, and arguments in support of this petition. For the reasons set forth below, Toyota believes this noncompliance is inconsequential as it relates to motor vehicle safety.

¹ See 56 Fed. Reg. 59971

Summary of the Noncompliance

This noncompliance relates to the two rear reflex reflectors for the subject vehicles. FMVSS No. 108, paragraph S8.1.11 and Table XVI-a require the rear reflex reflectors to meet minimum photometry requirements. Due to a supplier manufacturing process issue, some of the rear reflex reflectors may not meet certain required photometry values specified in Table XVI-a. As a result, the affected vehicles may not conform to FMVSS No. 108, paragraph S8.1.11. Improvements have been implemented as of May 20, 2019 to assure any new vehicle sold by Toyota meets all FMVSS No. 108 requirements.

Rear Reflex Reflector Assembly

The two rear reflex reflectors on the subject vehicles are designed to reflect light to make other drivers aware of the vehicles' presence under certain conditions. See the representative photograph of a 2013MY Lexus ES350 in Fig. 1 below.

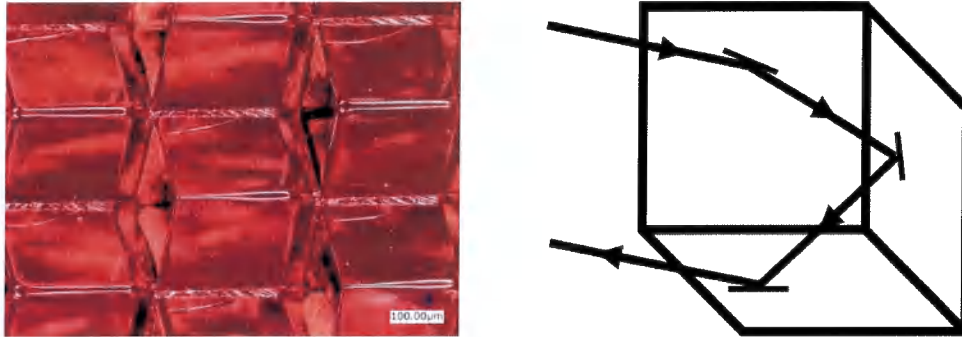
Fig. 1: Rear Reflex Reflector Assembly



Reflector Construction

The rear reflex reflectors used in the vehicles are retro reflectors which are devices that reflect light back to the light source along the same light direction. The rear reflex reflector consists of the lens and housing. The lens of the rear reflex reflector is constructed of molded acrylic. The back surface of lens consists of three mutually perpendicular, intersecting flat surfaces that are lined up internally. The incident light is reflected multiple times on the three perpendicular intersecting planes, and the incident light is returned to the viewer. See Fig. 2 below. To reduce the scattering of the reflected light, all three of the reflective flat surfaces are aligned perpendicular to each other.

Fig. 2: Back Surface of the Lens and Image of Reflection



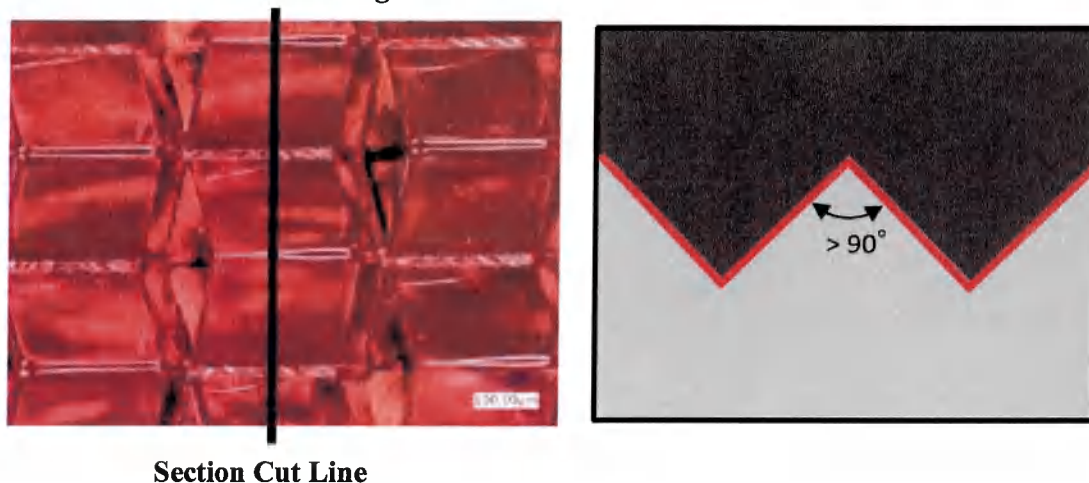
Reflector Production Process

The lens and the housing of the rear reflex reflectors are molded separately. After molding, the lens and the housing are welded together to make an assembly by means of vibration welding. After the welding process, the assemblies are annealed in an oven at 77.5 ± 2.5 degrees Celsius for at least 30 minutes to reduce internal stress from welding.

Technical Root Cause of the Noncompliance

Toyota and the supplier confirmed that, since the start of the reflector production, there have not been any intended changes in the design or the manufacturing process that would affect the photometry performance. Further investigation was conducted to identify the cause of the noncompliance in the part. As explained next, the supplier found that the photometry performance of the subject reflex reflector could be degraded during the annealing process under certain specific conditions, resulting in a potential noncompliance with certain minimum photometric values.

During reflector manufacturing, the annealing operators were instructed to anneal the part for at least 30 minutes. However, it was confirmed that annealing for longer than 30 minutes could start to affect the reflective surface angle. The supplier determined that the worst-case annealing condition was at the end of a day, when the parts were annealed 30 minutes and then the oven automatically turned off, but the parts were left in the oven overnight. Some of these parts had the greatest change in angle of the reflective flat surface. The supplier found that, if the aforementioned annealing condition occurred, the reflective flat surfaces could become greater than 90 degrees, which causes the reflected light to be more scattered. See Fig. 3 below. As a result, the affected parts may not conform to the photometry requirements of FMVSS No. 108, paragraph S8.1.11.

Fig. 3: Reflector Section Cut

Extent of the Noncompliance

To determine the amount of deviation from the photometry standard, the supplier, using the worst-case annealing time, produced 60 reflectors (30 right hand and 30 left hand). All the data measured for all points of all 60 pieces are shown in Attachment 2. Of these 60 parts, one part was slightly below the FMVSS standard for photometry requirements for H-V at the 0.2-degree observation angle. See Table 1 below. From production data records, the supplier also estimated that approximately 12 percent of the vehicles may contain parts produced with the worst-case annealing process described above and calculated less than 0.5% of the vehicles reported in the Part 573 Report may have a reflector with photometry performance values below the FMVSS requirement based on a statistical analysis of the 60 reflectors produced.

To predict the worst-case part that could have ever been produced, Toyota performed two different statistical calculations using the data from the 60 reflectors. Toyota calculated at 4.2 standard deviations from the mean that no part would deviate below 8.1 percent from the FMVSS standard.

In addition, to further identify the potential worst-case part, Toyota performed a tolerance interval calculation² to determine the maximum possible deviation from the worst-case annealed parts. Tolerance interval is used to statistically analyze the interval limits of a certain population from a normally distributed sample with certain confidence levels.

Based on this calculation, it was determined with 99.9 percent certainty that 100 percent of the population of reflectors produced outside of normal annealing process do not contain a

² See NIST Engineering Statistics Handbook: 7.2.6.3. Tolerance intervals for a normal distribution <https://www.itl.nist.gov/div898/handbook/index.htm>

photometry value below 3.7 candela or 18 percent deviation below the standard. See Tables 2 and 3 below.

In summary, based on these statistical analyses, Toyota determined that there is virtually no possibility that any of the subject vehicles in the field were produced with a part that is greater than 25 percent deviation from the standard. As discussed below, a deviation less than 25 percent is not detectable by the human eye.

Table 1: Noncompliant Part Measurements

Test Point	H-V	10U-V	10D-V	H-20L	H-20R
Requirement	4.5	3.0	3.0	1.5	1.5
Sample #B-40(RH)	4.45	4.09	5.45	2.93	4.89

Table 2: Statistical analysis of the worst deviation for LH (N=30)

Test Point (LH)	H-V	10U-V	10D-V	H-20L	H-20R
Requirement	4.5	3.0	3.0	1.5	1.5
Average	5	3.7	3.6	3.9	2.8
Sigma	0.17	0.16	0.13	0.18	0.10
Certainty	99.9%	99.9%	99.9%	99.9%	99.9%
Within % Population in the field	100%	100%	100%	100%	100%
Minimum Photometry Value	3.8	2.5	2.7	2.6	2.0
Deviation from Requirement	-16%	-16%	-11%	75%	35%

Table 3: Statistical analysis of the worst deviation for RH (N=30)

Test Point (RH)	H-V	10U-V	10D-V	H-20L	H-20R
Requirement	4.5	3.0	3.0	1.5	1.5
Average	4.8	4.2	5.1	3	4.6
Sigma	0.15	0.17	0.22	0.12	0.19
Certainty	99.9%	99.9%	99.9%	99.9%	99.9%
Within % Population in the field	100%	100%	100%	100%	100%
Minimum Photometry Value	3.7	3.0	3.5	2.1	3.2
Deviation from Requirement	-18%	0%	18%	39%	114%

The Noncompliance is Inconsequential as it relates to Motor Vehicle Safety

Toyota believes that the non-compliance is inconsequential to motor vehicle safety for the following reasons:

- I. The extent of the noncompliance for the subject reflex reflectors is such that the human eye is unable to differentiate the reflected light of noncompliant reflectors from the reflected light of ones that are compliant.
- II. There are no known complaints related to the noncompliance.
- III. In similar situations, NHTSA has granted petitions for inconsequential noncompliance relating to the subject requirement of FMVSS 108.

Information concerning each of these reasons is discussed further below.

- I. **The extent of the noncompliance for the subject reflex reflectors is such that the human eye is unable to differentiate the reflected light of noncompliant reflectors from the reflected light of ones that are compliant.**

The Noncompliance is Inconsequential, because there is no noticeable difference in reflected light between a noncompliant part and a compliant part.

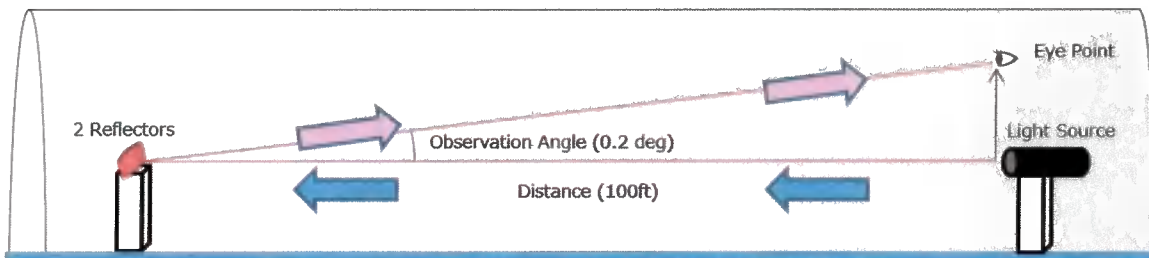
As discussed above, the technical cause of the noncompliance is related to the annealing process at the end of a day when reflectors were left in the oven as the oven cooled down. An assessment was made of the maximum deviation from the standard that could result from this circumstance. Based on the 60-piece parts study using the worst-case annealing process, Toyota calculated at 4.2 standard deviations from the mean that no part would deviate below 8.1 percent from the FMVSS standard. Considering the tolerance interval calculation method described previously, the worst possible deviation from the standard would be -18 percent.

The NHTSA sponsored study "Driver Perception of Just Noticeable Differences of Automotive Signal Lamp Intensities" (DOT HS 808 209, September 1994) and The University of Michigan Transportation Research Institute (UMTRI) "Just Noticeable Differences for Low-Beam Headlamp Intensities." (UMTRI-97-4, February 1997) found that a change in luminous intensity of 25 percent or less is not noticeable by most drivers. The agency noted in 1990 when it granted an inconsequentiality petition filed by Hella, Inc., "a reduction of approximately 25 percent in luminous intensity is required before the human eye can detect the difference between two lamps." (55 FR 37601, at 37602). In the Subaru petition the agency stated that the same considerations applied to reflectors as to lamps.³

³ See 56 Fed. Reg. 59971

To verify that a deviation of 18 percent is not detectable to the human eye, Toyota and the supplier conducted evaluations of the reflected light from the noncompliant part that was produced in the 60-piece study and another reflector that was approximately 20 percent higher in reflectivity. The reflectors (samples #B-23 for LH and #B-40 for RH) were mounted in a dark tunnel and set up to simulate the FMVSS 108 test setup at 0.2 degrees. See Fig. 4 below. Ten panelists were instructed to stand at a specific location 100 feet from the reflectors at a height approximating a 0.2-degree angle to the reflectors. They were asked if the reflector brightness was the same or different. After the ten panelists completed the survey, the same panelists were asked to repeat the activity; they were unaware that the parts and setup had not been changed. This survey activity was then repeated using two parts of equal reflectivity (#B-19 and #B-58). In these surveys, none of the panelists were able to identify the noncompliant part or correctly identify differences in reflectivity.

Fig. 4: Image of evaluation



In addition, Toyota installed the same two parts that were checked in the dark tunnel (#B-23 and #B-40) on a 2018MY Lexus ES350. Using the headlamps from another vehicle that was aligned 100 feet behind the ES, Toyota members visually observed the reflectivity between the two parts at night and were unable to distinguish a difference between the two reflectors. They looked the same. See Image 1.

Image 1: Photo of Samples (#B-23 for LH and #B-40 for RH)



II. There are no known complaints related to the noncompliance.

Toyota conducted a search of consumer complaints, field reports, dealer reports, Vehicle Owner Questionnaires (VOQs), and legal claims for the subject vehicles and found no report alleging that the rear reflectors could not be seen or were not bright enough. This search is current as of May 29, 2019.

III. In similar situations, NHTSA has granted petitions for inconsequential noncompliance relating to the subject requirement of FMVSS 108.

NHTSA has previously granted at least two similar petitions for inconsequential noncompliance, one for a tail lamp and one for a side reflex reflector assembly. A brief summary of the decisions is provided below:

- Hella (55 Fed. Reg. 37601, September 12, 1990)
In the petition, Hella argued that industry experience and supporting studies have established that the human eye in the vast majority of cases cannot detect a change in luminescence unless it is more than a 25 percent increase or decrease. NHTSA stated that a reduction of approximately 25 percent in luminous intensity is required before the human eye can detect the difference between two lamps. Of the noncompliant lamps tested, the greatest disparity reported between a compliant lamp and a noncompliant lamp was 3.6 cd, which is a 20 percent higher luminous intensity than compliant lamps. According to the SAE Recommended Practice J576, this differential cannot be detected by the human eye. For this reason, the Hella petition was granted.
- Subaru (56 Fed. Reg. 59971, November 26, 1991)
Subaru submitted a petition for inconsequential noncompliance in 1991 concerning the failures of luminous intensity on the side reflex reflector. NHTSA considered the petitioner's statement that observers could not differentiate between the reflected light of complying and noncomplying reflectors at distances of 30m, 60m, and 100m. As the agency noted in 1990 when it granted an inconsequentiality petition filed by Hella, Inc., "a reduction of approximately 25 percent in luminous intensity is required before the human eye can detect the difference between two lamps." (55 FR 37601, at 37602). The agency applied the same considerations to reflectors as to lamps. The luminous transmittance failures of the Subaru reflectors were all less than 20 percent of the minimum values specified by the standard, and, therefore, they were undetectable by the naked eye. For this reason, the petition was granted.

Conclusion

For the reasons set forth above, Toyota believes this noncompliance is inconsequential as it relates to motor vehicle safety and seeks an exemption from the notice and remedy requirements of 49 U.S.C. Chapter 301 for the subject vehicles.



Toyota Motor North America, Inc.
Vehicle Safety & Compliance
Liaison Office
Mail Stop: W4-2D
6565 Headquarters Drive
Plano, TX 75024

May 30, 2019

NONCOMPLIANCE INFORMATION REPORT

1. Vehicle Manufacturer Name:

Toyota Motor Corporation, ["TMC"]
1, Toyota-cho, Toyota-city,
Aichi, 471-8571, Japan

Toyota Motor Manufacturing, Kentucky, Inc. ["TMMK"]
1001 Cherry Blossom Way, Georgetown, KY, 40324

Affiliated U.S. Sales Company

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

Manufacturer of the Rear Reflex Reflectors

KOITO MANUFACTURING CO., LTD.
500, Kitawaki, Shimizu-ku, Shizuoka-city
Shizuoka, 424-8764, Japan

2. Identification of Involved Vehicles:

Based on production records, we have determined the involved vehicle population to be the vehicles listed in the table below.

Make/Car Line	Model Year	Manufacturer	Production Period
Lexus / ES350	2013 - 2018	TMC & TMMK	February 9, 2012 through July 25, 2018
Lexus / ES300h	2013 - 2018	TMC	February 9, 2012 through June 1, 2018

Lexus / GS200t/300/350	2013 - 2019	TMC	July 19, 2011 through May 21, 2019
Lexus / GS450h	2013 - 2018	TMC	October 5, 2011 through August 31, 2018
Lexus / GS-F	2016 - 2019	TMC	July 14, 2015 through May 20, 2019

Applicability	Part Number	Part Name	Component Description
Lexus / ES350 Lexus / ES300h Lexus / GS200t/300/350	81910-30040	REFLECTOR ASSY, REFLEX, RH	Rear Reflex Reflector
Lexus / GS450h Lexus / GS-F	81920-30040	REFLECTOR ASSY, REFLEX, LH	

- 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) Only vehicles in the above production range which had a rear reflex reflector that was inappropriately manufactured during the specific manufacturing process discussed below could be affected.

3. Total Number of Vehicles Involved:

Total : 502,034

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

Based on production records during the specific manufacturing process discussed below, Toyota estimates approximately 12% of the vehicle population may contain the rear reflex reflectors which were not appropriately manufactured. However, whether the noncompliance is present on each potentially affected vehicle depends on the variation of each individual part.

5. Description of Noncompliance:

This noncompliance relates to the rear reflex reflectors for the subject vehicles. FMVSS No. 108, paragraph S8.1.11 and Table XVI-a require the rear reflex reflectors to meet minimum photometry requirements. Due to a supplier manufacturing process issue, some of the rear reflex reflectors may not meet certain required photometry values specified in Table XVI-a. As a result, the affected vehicles may not conform to FMVSS No. 108, paragraph S8.1.11.

6. Test Results and Other Information:

In January and February, 2019, the Korea Automobile Testing and Research Institute (KATRI) of South Korea's Ministry of Land, Infrastructure and Transport (MOLIT) performed compliance testing on the rear reflex reflector for a Korean-specification 2015MY Lexus ES300h that indicated a potential noncompliance with the Korean lighting standard. KATRI found that certain photometry test values were below the minimum requirements specified in the Korean motor vehicle safety lighting and reflector regulation.

Toyota and the supplier began an investigation to determine if the reflex reflector was in compliance with the Korean standard. The supplier found that the photometry performance of the subject reflex reflector could be degraded during the annealing process under certain conditions, resulting in a potential noncompliance with certain minimum photometric values described in the Korean regulation.

The regulations for the lighting and reflex device are different between Korea and the U.S. However, the subject reflex reflectors were produced by the same supplier and used in certain models sold in the U.S. An investigation was undertaken to check if the reflex reflectors met the safety standard in the U.S. On May 24, 2019, it was determined, based upon testing the reflectors in accordance with FMVSS No. 108, that the subject vehicles may not fully conform to FMVSS No. 108, paragraph S8.1.11.

7. Description of Corrective Repair Action:

Pursuant to 49 U.S.C. 30118(d) and 30120(h), and the provisions of 49 CFR Part 556, Toyota intends to petition NHTSA for an exemption from the notification and remedy requirements of 49 U.S.C. Chapter 301 on the basis that this noncompliance is inconsequential to motor vehicle safety.

Attachment 2

[Unit: cd/ft-cd]

Observation Angle		0.20				
Incident Angle		H-V	10U-V	10D-V	H-20L	H-20R
FMVSS Requirement		4.500	3.000	3.000	1.500	1.500
No.	LH/RH					
B-1	LH	4.970	3.830	3.880	3.940	2.850
B-2	LH	4.920	3.720	3.870	3.980	2.750
B-3	LH	4.980	3.540	3.370	3.940	2.800
B-4	LH	4.900	4.010	3.550	3.980	2.690
B-5	LH	4.930	3.800	3.480	3.970	2.700
B-6	LH	5.000	3.500	3.660	4.250	2.660
B-7	LH	4.990	3.660	3.780	4.090	2.740
B-8	LH	4.980	3.510	3.570	3.920	2.740
B-9	LH	5.010	3.780	3.610	4.170	2.700
B-10	LH	4.870	3.630	3.770	4.060	2.740
B-11	LH	5.060	3.690	3.690	3.670	2.930
B-12	LH	4.880	3.650	3.740	3.690	2.780
B-13	LH	5.150	3.910	3.630	3.770	2.750
B-14	LH	5.170	3.790	3.800	3.740	2.650
B-15	LH	5.200	3.850	3.670	4.170	2.830
B-16	LH	5.130	3.520	3.520	3.700	2.790
B-17	LH	5.000	3.450	3.710	3.940	2.850
B-18	LH	4.820	3.840	3.630	4.040	2.630
B-19	LH	4.680	3.940	3.620	3.700	2.950
B-20	LH	5.260	3.790	3.500	4.100	2.640
B-21	LH	5.010	3.340	3.490	3.750	2.560
B-22	LH	5.010	3.570	3.470	4.140	2.710
B-23	LH	5.380	3.620	3.620	3.890	2.740
B-24	LH	5.030	3.640	3.740	3.720	2.840
B-25	LH	4.860	3.580	3.480	3.940	2.910
B-26	LH	4.810	3.790	3.820	3.830	2.930
B-27	LH	4.790	3.870	3.560	3.770	2.760
B-28	LH	5.260	3.770	3.410	4.190	2.830
B-29	LH	5.140	3.900	3.560	3.680	2.830
B-30	LH	5.120	3.840	3.580	3.810	2.650
B-31	RH	4.740	4.320	4.980	2.960	4.350
B-32	RH	4.750	4.220	4.910	2.750	4.490
B-33	RH	4.810	4.150	5.050	2.780	4.410
B-34	RH	4.780	4.150	5.550	2.840	4.840
B-35	RH	4.750	4.190	5.430	3.010	4.510
B-36	RH	4.690	3.980	5.190	2.730	4.500
B-37	RH	4.610	4.050	5.250	3.050	4.550
B-38	RH	4.520	4.270	5.090	3.110	4.500
B-39	RH	4.790	4.430	5.030	3.080	4.710
B-40	RH	4.450	4.090	5.450	2.930	4.890
B-41	RH	4.760	4.040	4.700	3.010	4.630
B-42	RH	4.580	4.140	5.250	2.960	4.710
B-43	RH	4.780	3.980	5.250	2.890	4.700
B-44	RH	5.020	4.150	5.410	2.980	4.830
B-45	RH	4.940	4.380	4.950	2.800	4.930
B-46	RH	4.870	4.490	5.060	3.060	4.830
B-47	RH	4.780	4.130	5.350	3.040	4.740
B-48	RH	4.750	4.020	5.130	3.210	4.680
B-49	RH	4.710	4.270	5.090	2.900	4.540
B-50	RH	5.110	4.400	4.850	2.830	4.230
B-51	RH	4.930	4.140	5.400	2.930	4.580
B-52	RH	4.870	4.380	4.750	2.950	4.830
B-53	RH	4.920	4.550	5.340	2.910	4.280
B-54	RH	4.580	4.060	5.030	3.060	4.460
B-55	RH	4.780	4.410	5.080	3.230	4.440
B-56	RH	4.610	4.160	4.960	2.690	4.600
B-57	RH	4.800	3.860	5.110	2.950	4.690
B-58	RH	4.680	4.220	5.230	2.880	4.550
B-59	RH	5.050	4.170	5.230	3.000	5.010
B-60	RH	4.850	4.100	4.760	2.950	4.460

Part 573 Safety Recall Report

19V-405

Manufacturer Name : Toyota Motor Engineering & Manufacturing

Submission Date : MAY 30, 2019

NHTSA Recall No. : 19V-405

Manufacturer Recall No. : NR



Manufacturer Information :

Manufacturer Name : Toyota Motor Engineering & Manufacturing
 Address : 6565 Headquarters Drive
 Plano TX 75024
 Company phone : 1-800-331-4331

Population :

Number of potentially involved : 502,034
 Estimated percentage with defect : 12 %

Vehicle Information :

Vehicle 1 : 2013-2018 Lexus ES350

Vehicle Type :

Body Style :

Power Train : NR

Descriptive Information : (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) Only vehicles in the above production range which had a rear reflex reflector that was inappropriately manufactured during the specific manufacturing process discussed below could be affected. Note: Based on production records during the specific manufacturing process discussed below, Toyota estimates approximately 12% of the vehicle population may contain the rear reflex reflectors which were not appropriately manufactured. However, whether the noncompliance is present on each potentially affected vehicle depends on the variation of each individual part.

Production Dates : FEB 09, 2012 -JUL 25, 2018

VIN Range 1 : Begin :

NR

End : NR

Not sequential

Vehicle 2 : 2013-2018 Lexus ES300h

Vehicle Type :

Body Style :

Power Train : NR

Descriptive Information : (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) Only vehicles in the above production range which had a rear reflex reflector that was inappropriately manufactured during the specific manufacturing process discussed below could be affected. Note: Based on production records during the specific manufacturing process discussed below, Toyota estimates approximately 12% of the vehicle population may contain the rear reflex reflectors which were not appropriately manufactured. However, whether the noncompliance is present on each potentially affected vehicle depends on the variation of each individual part.

Production Dates : FEB 09, 2012 - JUN 01, 2018

VIN Range 1 : Begin :

NR

End : NR

Not sequential

Vehicle 3 : 2013-2019 Lexus GS200t/300/350

Vehicle Type :

Body Style :

Power Train : NR

Descriptive Information : (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) Only vehicles in the above production range which had a rear reflex reflector that was inappropriately manufactured during the specific manufacturing process discussed below could be affected. Note: Based on production records during the specific manufacturing process discussed below, Toyota estimates approximately 12% of the vehicle population may contain the rear reflex reflectors which were not appropriately manufactured. However, whether the noncompliance is present on each potentially affected vehicle depends on the variation of each individual part.

Production Dates : JUL 19, 2011 - MAY 21, 2019

VIN Range 1 : Begin :

NR

End : NR

Not sequential

Vehicle 4 : 2013-2018 Lexus GS450h

Vehicle Type :

Body Style :

Power Train : NR

Descriptive Information : (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) Only vehicles in the above production range which had a rear reflex reflector that was inappropriately manufactured during the specific manufacturing process discussed below could be affected. Note: Based on production records during the specific manufacturing process discussed below, Toyota estimates approximately 12% of the vehicle population may contain the rear reflex reflectors which were not appropriately manufactured. However, whether the noncompliance is present on each potentially affected vehicle depends on the variation of each individual part.

Production Dates : OCT 05, 2011 - AUG 31, 2018

VIN Range 1 : Begin :

NR

End : NR

Not sequential

Vehicle 5 : 2016-2019 Lexus GS-F

Vehicle Type :

Body Style :

Power Train : NR

Descriptive Information : (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) Only vehicles in the above production range which had a rear reflex reflector that was inappropriately manufactured during the specific manufacturing process discussed below could be affected. Note: Based on production records during the specific manufacturing process discussed below, Toyota estimates approximately 12% of the vehicle

population may contain the rear reflex reflectors which were not appropriately manufactured. However, whether the noncompliance is present on each potentially affected vehicle depends on the variation of each individual part.

Production Dates : JUL 14, 2015 - MAY 20, 2019

VIN Range 1 : Begin :

NR

End : NR

Not sequential

Description of Noncompliance :

Description of the Noncompliance : This noncompliance relates to the rear reflex reflectors for the subject vehicles. FMVSS No. 108, paragraph S8.1.11 and Table XVI-a require the rear reflex reflectors to meet minimum photometry requirements. Due to a supplier manufacturing process issue, some of the rear reflex reflectors may not meet certain required photometry values specified in Table XVI-a. As a result, the affected vehicles may not conform to FMVSS No. 108, paragraph S8.1.11.

FMVSS 1 : 108 - Lamps, reflective devices, and assoc. Equipment

FMVSS 2 : NR

Description of the Safety Risk : Pursuant to 49 U.S.C. 30118(d) and 30120(h), and the provisions of 49 CFR Part 556, Toyota intends to petition NHTSA for an exemption from the notification and remedy requirements of 49 U.S.C. Chapter 301 on the basis that this noncompliance is inconsequential to motor vehicle safety.

Description of the Cause : NR

Identification of Any Warning that can Occur : NR

Supplier Identification :

Component Manufacturer

Name : KOITO MANUFACTURING CO., LTD.

Address : 500, Kitawaki, Shimizu-ku
Shizuoka-city FOREIGN STATES 424-8764

Country : Japan

Chronology :

In January and February, 2019, the Korea Automobile Testing and Research Institute (KATRI) of South Korea's Ministry of Land, Infrastructure and Transport (MOLIT) performed compliance testing on the rear reflex reflector for a Korean-specification 2015MY Lexus ES300h that indicated a potential noncompliance with the Korean lighting standard. KATRI found that certain photometry test values were below the minimum requirements specified in the Korean motor vehicle safety lighting and reflector regulation.

Toyota and the supplier began an investigation to determine if the reflex reflector was in compliance with the

Korean standard. The supplier found that the photometry performance of the subject reflex reflector could be degraded during the annealing process under certain conditions, resulting in a potential noncompliance with certain minimum photometric values described in the Korean regulation.

The regulations for the lighting and reflex device are different between Korea and the U.S. However, the subject reflex reflectors were produced by the same supplier and used in certain models sold in the U.S. An investigation was undertaken to check if the reflex reflectors met the safety standard in the U.S. On May 24, 2019, it was determined, based upon testing the reflectors in accordance with FMVSS No. 108, that the subject vehicles may not fully conform to FMVSS No. 108, paragraph S8.1.11.

Description of Remedy :

Description of Remedy Program : Pursuant to 49 U.S.C. 30118(d) and 30120(h), and the provisions of 49 CFR Part 556, Toyota intends to petition NHTSA for an exemption from the notification and remedy requirements of 49 U.S.C. Chapter 301 on the basis that this noncompliance is inconsequential to motor vehicle safety.

How Remedy Component Differs from Recalled Component : Not Applicable

Identify How/When Recall Condition was Corrected in Production : NR

Recall Schedule :

Description of Recall Schedule : Pursuant to 49 U.S.C. 30118(d) and 30120(h), and the provisions of 49 CFR Part 556, Toyota intends to petition NHTSA for an exemption from the notification and remedy requirements of 49 U.S.C. Chapter 301 on the basis that this noncompliance is inconsequential to motor vehicle safety.

Planned Dealer Notification Date : NR - NR

Planned Owner Notification Date : NR - NR

* NR - Not Reported