



RUBBER
manufacturers
association

1400 K Street, NW • Washington, DC 20005 • tel (202) 682-4800 • fax (202) 682-4854 • www.rma.org

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California Energy Commission
Dockets Office, MS-4
Re: Docket No. 07-FET-1
1516 Ninth Street
Sacramento, CA 95814-5512

DOCKET
07-FET-1

DATE APR 22 2009

RECD. APR 23 2009

RE: Comments on CEC Staff Workshop held April 8, 2009

On behalf of the tire manufacturer members of the Rubber Manufacturers Association,¹ I appreciate the opportunity to submit comments on the CEC staff workshop on AB 844 that was held on April 8, 2009.

RMA would like to thank the CEC staff for the opportunity to present information and analysis at the staff workshop. We would like to follow up on several items that were discussed during the workshop.

1. RMA Positions on Various Issues

At the Workshop, the concern was expressed that the Commission was unclear about RMA positions on various relevant issues. In an effort to eliminate this confusion, RMA offers the following outline of RMA positions:

- **Rolling Resistance Test Method.** RMA supports the use of ISO Draft International Standard 28580 as a means to sample for rolling resistance.

¹ The Rubber Manufacturers Association (RMA) is the national trade association representing more than 100 companies that manufacture various rubber products. These member companies include every major domestic tire manufacturer including: Bridgestone Americas Inc., Continental Tire N.A.; Cooper Tire & Rubber Company; The Goodyear Tire and Rubber Company; Michelin North America, Inc.; Pirelli North America; Toyo Tire (U.S.A.) Corporation; and Yokohama Tire Corporation.

RMA advocates that this test method be adopted as the compliance method for the CEC regulation. Of note, though, since the ISO Draft International Standard 28580 has not been yet adopted in final, RMA also supports the use of SAE J1269. The benefit of the new ISO 28580 test, however, is the machine alignment method that is designed to reduce uncertainty caused by test machine variation. Test data gathered by either method can be correlated, so concern about which test is used should be minimal. The ISO Draft International Standard 28580 is slated for finalization by late 2009.

- **Rolling Resistance Rating System.** RMA supports the adoption of a five category rating system based on rolling resistance coefficient. RMA presented its proposal at the Workshop. The data analysis for the proposal is contained in the ENVIRON Report described below and attached to these comments as Attachment 1. RMA has presented its proposal as a “Five Star” system. RMA has chosen stars to represent the categories because of consumer familiarity with five star systems. Other symbols may be appropriate instead – gas pumps, etc. – but the concept remains sound. RMA favors this approach over an Energy Star-type approach that would give consumers yes/no-type information. RMA believes that an Energy Star approach would not give consumers sufficient information to consider during the purchase of tires or sufficiently differentiate tires in the marketplace to stimulate competition and innovation. RMA believes that a Five Star rating system would strike the right balance among the need for consumer information, manufacturer competition and testing capabilities.
- **Basis for Consumer Information – Rolling Resistance Force or Rolling Resistance Coefficient.** RMA supports the use of rolling resistance coefficient as the basis for a tire rolling resistance rating system. Analysis on this point was presented during the Workshop and in RMA’s comments on the February 5, 2009 CEC Staff Workshop. RMA believes that a rating system based on rolling resistance force would have the potential to provide

information that is misleading to consumers and could cause inappropriate tire choices for a consumer's vehicle.

- **Tires Covered by the Consumer Information Requirement.** RMA believes that the consumer information regulation should apply to tires for consumer vehicles. As described in more detail in the RMA comments provided on the December 7, 2007 workshop, RMA recommends that the applicability for AB 844 regulations be stated as “passenger tires for use on passenger cars and light-duty trucks.” Most passenger cars and light-duty trucks use P-metric or Euro-metric passenger car tires. The designation “LT” on a tire includes tires that are typically original equipment on larger, full-sized trucks and work vehicles. RMA recommends that the applicability of the requirement be on the type of vehicle for which the tire is intended, rather than the tire classification itself. The Bennett-Garfield publication, OEM Tire Size Guide, provides information about the original equipment manufacturer (OEM) specifications for tire sizes, load ratings and speed symbols for tires for specific vehicles.
- **Manufacturer Reporting.** RMA supports manufacturer self-certification for compliance with the consumer information requirements under AB 844. Consistent with federal safety and consumer information regulations for motor vehicles and motor vehicle components, including tires, tire manufacturers would submit to the CEC the tire efficiency rating for each tire in their product offerings. CEC could choose to audit manufacturers to assure compliance. RMA also supports a “challenge” approach to assure compliance, where a manufacturer could challenge another manufacturer's rating of a specific tire. If the challenging manufacturer's claim was successful, the challenged company would have to reimburse the challenger and the state for testing and related costs, provide corrected a product rating and be subject to other civil penalties. RMA discussed the self-certification

approach in comments to the CEC in response to the December 7, 2007 workshop, in the White Paper on self-certification and during the April 8, 2009 Workshop. RMA understands that CEC would like to learn more about how manufacturers assure compliance under a self-certification system. RMA members are evaluating how they might provide additional information, potentially submitted as business confidential information (CBI). RMA is seeking more information about how the CBI process works at CEC.

2. ENVIRON Report and Underlying Data.

During the April 8 workshop, Mark Hawley of ENVIRON Corporation presented a summary of analyses he has conducted on behalf of RMA. As described in the workshop, Mr. Hawley has analyzed rolling resistance coefficient (RRc) data from a number of different sources, including CEC and RMA. His analyses address several topics, including market coverage, RRc distribution, sources of uncertainty and the design of an RRc rating system. The final report from ENVIRON on this work is included as Attachment 1 to these comments (“ENVIRON Report”). The underlying data are also provided.

In summary, the ENVIRON Report accomplishes the following:

- Presents a comprehensive database that includes 1,007 RRc values;
- Assesses the degree of market coverage provided by the comprehensive data set;
- Discusses and assesses sources of variation in the data set which can be effectively addressed via categorical treatment;
- Characterizes the range and distribution of rolling resistance coefficient values in the United States passenger car tire market and
- Develops and evaluates a proposed categorical rating system for passenger car tires based on rolling resistance coefficient that provides meaningful consumer choices to purchasers of replacement tires for their vehicles.

- 3. Additional Information Regarding ISO Draft International Standard 28580 Machine Alignment and Data Uncertainty.** RMA appreciated the discussion at the Workshop regarding all of the complex technical, scientific and statistical issues associated with rolling resistance testing. RMA recognizes the need for RMA to provide additional information and analysis to more fully explain the issues surrounding machine alignment, test repeatability and data uncertainty. RMA is developing further analysis and explanation to submit to CEC to assist in explaining these complex issues. RMA's objective is to submit this additional information to CEC prior to the next AB 844 workshop, which we understand has been scheduled for June 10, 2009.
- 4. RMA Responses to CEC Requests.** RMA provides the following in response to CEC requests for information:

 - a. RMA Rolling Resistance Data.** CEC has requested the rolling resistance information that RMA members have developed. That data forms the basis for the ENVIRON Report and is included with that submittal. CEC has requested that the data be provided in Excel format. The data are being submitted as an appendix to the ENVIRON Report in pdf format for the docket. RMA will also provide CEC with an Excel version for its use.
 - b. White Paper of Self-Certification.** CEC requested a copy of a White Paper developed by RMA on self-certification. RMA provided that document to CEC staff in June 2008. The document is provided as an Attachment 2 to these comments as well for purposes of the docket.
 - c. Tire SKUs.** CEC requested information to understand the number of different passenger vehicle and light-duty truck (LT) tires/families of tires manufactured for sale in California. RMA and its members are unable to

provide information specific to the products manufactured for sale in California. Tires are manufactured for the U.S. market only. Tire manufacturers are not able to determine which tires are sold in California due to the nature of the distribution system for tires in the United States. As stated in RMA comments filed in response to the February 5, 2009 CEC Staff Workshop, RMA agrees that Smithers Scientific has reasonably represented the aggregate number of SKUs in the United States tire market. Recognizing that any SKU count is a snapshot in time, RMA supports use of the aggregate Smithers estimates in this process. Exact tire manufacturer SKU counts by company for the United States tire market are considered proprietary information and held as confidential business information by tire companies. RMA has begun a dialogue with CEC legal counsel to learn more about the provisions at CEC for handling business confidential (CBI) information to potentially provide more detailed data, mindful of competitive concerns.

- d. **Industry Testing Capabilities.** CEC requested information about tire manufacturer rolling resistance testing capabilities. RMA is unable to provide data in the manner requested, since machine availability is not assessed in this manner.

Tire testing equipment is typically capable of conducting a number of different tire tests – not only rolling resistance. Depending on how a company’s testing program is organized, a company may utilize a piece of equipment to satisfy a number of different testing needs, or dedicate a machine to solely one type of testing, e.g., rolling resistance. Due to the differences in how equipment is utilized, the type of information sought cannot be obtained by simply learning the number of machines available. Instead, in order to answer the testing capacity question another way, RMA members have developed an alternate metric for assessing the issue.

As discussed at the Workshop, RMA member companies have assessed the number of available test hours within their companies, both with existing manpower and with additional manpower.

The aggregate cost information provided at the Workshop was based on an analysis of individual company testing capacity and the number of SKUs. Available testing capacity is very sensitive and confidential business information, since it directly relates to a company's ability to comply with new requirements with existing equipment and its competitiveness. As with the SKU question above, RMA has begun discussing the CBI process at the CEC to learn how RMA could potentially submit individual company information confidentially.

Thank you for the opportunity to provide these comments. Please contact me should any further explanation be necessary regarding the information provided. We look forward to a continuing public dialogue with other stakeholders in this process and a productive AB 844 Workshop on June 10, 2009.

Respectfully submitted,



Tracey J. Norberg
Senior Vice President and Corporate Counsel

Attachments: (1) ENVIRON Report
(2) White Paper on Self-Certification

**COMPILATION AND ANALYSIS OF
DATA RELATED TO THE
ROLLING RESISTANCE OF
PASSENGER CAR TIRES**

Prepared on behalf of the
Rubber Manufacturers Association

Prepared by
ENVIRON International Corporation
Arlington, Virginia

April 22, 2009

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APPENDIX

The Comprehensive RRC Data Set

EXECUTIVE SUMMARY

ENVIRON International Corporation was retained by the Rubber Manufacturers Association (RMA) to review and analyze existing data relating to the rolling resistance of passenger car tires sold in the United States. A comprehensive data set that includes values for rolling resistance coefficient (RRC) and tire characteristics that may influence rolling resistance was compiled from various sources, including RMA members. Tire shipment data indicate that the size and speed rating categories of the tires listed in the comprehensive data set represent nearly 90 percent of the replacement tires sold in the domestic tire market in 2006.

The distribution of RRC values in the domestic replacement tire market was investigated by fitting probability functions to unweighted and sales-weighted versions of the comprehensive data set. The sales-weighted analysis was performed to address the possibility that some sizes or types of tires are over-represented or under-represented in the comprehensive data set. The probability functions fit to these two versions of the comprehensive RRC data set have similar statistical characteristics and the differences between them are relatively small.

Four sources of variation in the RRC values were identified and the variation resulting from some of these sources was quantified for some of the tested tire products. The four sources of variation are: (1) the limits of precision of individual RRC measurements, (2) differences between individual items of the same tire product, (3) differences between test equipment, and (4) differences between tires designed and produced for different vehicles and purposes by various manufacturers. Most of the RRC values in the comprehensive RRC data set are averages, and this data set includes variation from all four sources. The smaller CEC data set provides five replicate RRC measurements for each of 149 tested tire products and reportedly does not include variation due to differences between test equipment.

Analysis of the CEC data set indicates that the level of uncertainty associated with estimates of the mean RRC varies substantially from one tire product to another and is not clearly related to the other reported variables. Hypothesis tests demonstrate that differences of approximately 10 percent between the average RRC of two tire products of the same size are not always statistically significant. These results indicate that an RRC value assigned to any particular tire product should be reported as an interval, not as a point value.

ENVIRON evaluated a system proposed by the RMA for rating the energy efficiency of replacement tires based on rolling resistance. This system assigns each tested tire to one of five categories defined by ranges of RRC values. Analysis of the comprehensive RRC data set indicates that under the proposed rating system, consumers of most popular sizes and types of replacement passenger car tires would be able to choose among tires with at least two different energy efficiency ratings (“star ratings”). The tested tires in several of the size and speed rating combinations most common in the comprehensive data set have four or five different star ratings. The actual number and range of choices available to a consumer purchasing a tire within a specific size and speed rating group is expected to be substantially greater than that found in the limited data set used in this analysis.

1.0 INTRODUCTION

ENVIRON International Corporation (ENVIRON) was retained by the Rubber Manufacturers Association (RMA) to review and analyze data relating to the rolling resistance of passenger car tires sold in the United States. Recent legislation in California (Assembly Bill 844, 2003) is intended to ensure that replacement tires sold in California are at least as energy efficient, on average, as original equipment tires. The primary objective of the project described in this report is to compile and review a comprehensive data set that can be used to characterize the rolling resistance of passenger car tires sold in the domestic replacement tire market.

1.1 Scope of Work

ENVIRON's scope of work includes four specific tasks:

- Compile a comprehensive data set that represents the rolling resistance characteristics of passenger car tires sold in the domestic replacement tire market;
- Assess the degree of market coverage provided by the comprehensive data set;
- Characterize the variation and distribution of rolling resistance in the domestic replacement tire market; and
- Develop an appropriate rating system for replacement tires based on their rolling resistance.

In addressing these tasks, ENVIRON has relied on information provided by others; our scope of work does not include generating new rolling resistance measurements or other data.

1.2 Report Organization

This report is organized as follows:

- Section 1 states the primary objective, provides some context, and defines the scope of the project.
- Section 2 provides background information including a summary of tire terminology, a description of relevant legislation, a brief review of earlier rolling resistance studies (which includes a discussion of methods for measuring rolling resistance), and a final subsection that identifies the key issues addressed in this report.

- Section 3 describes the data sets used in preparing this report, compilation of the comprehensive data set, evaluation of market coverage, and development of a sales-weighted RRC data set.
- Section 4 describes our analysis of the RRC data sets. Probability distribution functions are fit to two versions (unweighted and sales-weighted) of the comprehensive data set. Sources of variation in rolling resistance are identified and discussed. A rolling resistance rating system is proposed and evaluated.
- Section 5 provides a summary of the report and discusses our findings to date.

2.0 BACKGROUND INFORMATION

2.1 Description and Categories of Passenger Car Tires

This report provides information regarding passenger car tires sold as replacement tires in the United States. These tires are described and categorized by a number of codes and systems established by the tire industry.

The size of a tire sold in the U.S. is described by a combination of three dimensions (rim diameter, section width, and aspect ratio), most often with a prefix that identifies the tire's intended use. Common prefixes include "P" for passenger car tires, "LT" for light truck tires, and "T" for temporary spare tires. Tires with these prefixes are sized according to standards established by the U.S. tire industry, and sizes with the P prefix are referred to as "P-metric". These codes are commonly expressed as a single series, e.g. "P195/65R15"¹. The absence of a prefix with a combination of dimensions that would be appropriate for a passenger car tire indicates that the tire is sized according to an alternative system widely used outside the U.S.; such sizes are commonly referred to as Euro-metric. Many Euro-metric sized tires are available in the U.S. replacement tire market, so the passenger car tires that are the subject of this report include both P-metric and Euro-metric sizes.

Other important tire characteristics are represented by a service description composed of a load index and a speed rating. The load index identifies the tire's rated load carrying capacity, which is related to tire size and inflation pressure. The speed rating, which is related to the tire's intended use, is represented by a letter code that indicates the maximum speed at which the tire can safely carry a given load at a specified inflation pressure. The common speed ratings for passenger car tires are (in order from lowest to highest speed) Q, R, S, T, H, V, W, Y, and Z. Some passenger car tires are not speed-rated.

Some parts of this report address characteristics of specific combinations of tire size and speed rating, while other sections summarize the characteristics of larger categories of tires. Specific combinations are defined by the P prefix (if the combination is P-metric), the three tire dimensions, and a single speed rating code. The larger tire size categories

¹ The R in this designation identifies a tire of radial construction. Nearly all passenger car tires sold in the U.S. in recent years are of radial construction (RMA Fact Book 2006).

include both P-metric and Euro-metric tires with the same three dimensions; these categories are denoted in this report with the prefix in parentheses, as in “(P)195/65R15”. The larger speed rating groups most commonly used in this report are H, V, ZR (which includes W, Y, and Z-rated tires), and other (which includes all other tires with or without speed ratings). As discussed in Section 3.1, other speed rating groupings are used in some of the source data sets.

The smallest category of tires considered in this report is the “SKU” (for stock-keeping unit). Each tire manufacturer usually assigns a separate SKU to each distinct tire design, and all individual tires manufactured to the same product specifications have the same SKU. Some designs (SKUs) differ from each other in ways that are not reflected in the characteristics reported in the RRC data sets considered in this report, such as the style of sidewall markings (raised black letters, raised white letters, outlined raised white letters, etc.). Each of the tires listed in the RRC data sets described in this report is characterized by a manufacturer, brand name, model name, size (including prefix), load index, and speed rating; in most cases, UTQG ratings, and other descriptors are also available. Because the information in the data sets is not always sufficient to define a single SKU, each of the tires listed in the RRC data sets is referred to here as a “tire product”. Thus, each of the categories referred to in this report as a tire product may include a number of SKUs that differ in ways that are not expected to influence rolling resistance.

2.2 Review of Recent Legislation Regarding Rolling Resistance

California AB 844 (2003)

California enacted Assembly Bill 844 (AB 844), the Replacement Tire Efficiency Program, in 2003. This bill requires the California Energy Commission (CEC) to establish, in consultation with the California Integrated Waste Management Board, a replacement tire efficiency program. The legislation requires that the CEC “develop and adopt” by July 1, 2006:

- “A database of the energy efficiency of a representative sample of replacement tires sold in the state, based on test procedures adopted by the commission.”
- “Based on the data [in the database], a rating system for the energy efficiency of replacement tires sold in the state, that will enable consumers to make more informed decisions when purchasing tires for their vehicles.”

- “Based on the test procedures adopted [by the commission] and the rating system established [by the commission], requirements for tire manufacturers to report to the commission the energy efficiency of replacement tires sold in the state.”

Additionally, the legislation requires that CEC develop and adopt minimum energy efficiency standards for replacement tires by July 1, 2007 “except to the extent that the commission determines that it is unable to do so in a manner” that satisfies the following conditions:

- “Be technically feasible and cost effective.”
- “Not adversely affect tire safety.”
- “Not adversely affect the average tire life of replacement tires.”
- “Not adversely affect state efforts to manage scrap tires [pursuant to state legislation].”

Federal Legislation – H.R. 6 (2007)

Section 111 of the U.S. Energy Independence and Security Act of 2007 (H.R. 6) creates a national consumer tire information program. The law directs the Secretary of Transportation to promulgate rules within 24 months of the law’s enactment establishing a “national tire fuel efficiency consumer information program for replacement tires designed for use on motor vehicles to educate consumers about the effect of tires on automobile fuel efficiency, safety and durability.” The law specifies that the rulemaking include a national tire fuel efficiency rating system; consumer information dissemination requirements; tire efficiency test method specifications; and a national tire maintenance consumer information program. The law requires periodic Reports to Congress on the utility of the rules and other criteria. The law also gives the Secretary of Transportation significant enforcement discretion to assure compliance with requirements promulgated under the law. The National Highway Traffic Safety Administration (NHTSA) is developing a notice of proposed rulemaking (NPRM) to address this mandate. NHTSA is expected to publish the NPRM in spring 2009.

2.3 Methods for Measuring Rolling Resistance

Measurements of a tire’s rolling resistance can be obtained by test methods established by the Society of Automotive Engineers (SAE) and other automotive industry organizations. The results of these measurements for a specific tire are most commonly quantified by a parameter known as the rolling resistance coefficient (RRC). The RRC is

derived by dividing the measured rolling resistance by a percentage of the load applied to the tire during the test.

A number of standardized test methods are available for measuring the rolling resistance of passenger car tires. The method used to develop most of the RRC data discussed in this report is a variation of the SAE J1269 standard. This standard involves testing a tire under multiple loads and inflation pressures at the same speed (80 kilometers per hour, or kph) under specified test conditions. Four or more different combinations of load and inflation pressure are typically used in testing passenger car tires. At present, there is no globally harmonized, single-point standard test method for determining the rolling resistance of passenger car tires (although the ISO Draft International Standard 28580 test method is designed to provide such a test). Most of the RRC data discussed in this report was obtained using a single load variation of the J1269 standard or by using data obtained under multiple loads to calculate the rolling resistance for standard reference conditions. The comprehensive RRC data set described in later sections of this report includes unaligned data from multiple laboratories. This data set can be used to evaluate trends but it is not appropriate to use the data to compare individual tires because the uncertainty surrounding individual data points is not quantified.

One alternative to the J1269 standard is SAE standard J2452 (sometimes referred to as the coastdown method), which involves testing the tire at multiple combinations of load, inflation pressure, and speed. Tests of passenger car tires under this standard typically involve four or more combinations of load and inflation pressure at six different speeds. This standard is most commonly used by vehicle manufacturers to provide rolling resistance data for use in mathematical modeling of vehicle fuel economy.

Other methods for testing rolling resistance are developed by the International Standards Organization (ISO). The current ISO 8767 standard allows for both single-speed and multiple-speed testing under at least one load at a specified inflation pressure. Another current ISO standard (ISO 18164) prescribes a single-point test. The test conditions specified for both of the ISO standards differ in some respects from the conditions specified for the SAE standards.

Another international standard is currently being developed to provide a test method that can be used worldwide for regulatory development and compliance purposes. This new standard (ISO 28580) is based on a single-point test conducted at 80 kph at a load equal

to 80 percent of the tire's rated maximum load capacity. When issued, this standard will include procedures for addressing complications related to some of the potential sources of variation in RRC test results. The primary sources of variation to be addressed by the standard are related to the repeatability of measurements obtained using the same test equipment and alignment of measurements obtained on different test equipment. Methods for quantifying, limiting, and adjusting for these sources of variation will be specified. Final adoption of this standard is currently expected by late 2009.

2.4 Summary of Previous Rolling Resistance Studies

A detailed review of the technical literature relating to tire rolling resistance is beyond the scope of this project, but the primary references used by ENVIRON in preparing this report are described in this section.

The Pneumatic Tire (NHTSA 2005)

The Pneumatic Tire, published by NHTSA in 2005, provides detailed technical information regarding tire design, terminology, testing, and performance. This document is composed of chapters written by recognized authorities on various aspects of passenger car tire design, construction, and use. This reference includes chapters on rolling resistance; tire testing and inspection; tire standards and specifications; and tire safety, durability, and failure analysis. Chapter 15 (Introduction to Tire Safety, Durability, and Failure Analysis) notes that the tire design process involves trade-offs between performance factors including traction, wear, ride comfort, handling, durability, rolling resistance, and others. Other chapters in this volume note the importance of maintaining proper tire inflation.

Tires and Passenger Vehicle Fuel Economy (TRB 2006)

Another important reference is Tires and Passenger Vehicle Fuel Economy, which was issued as Special Report 286 (SR286) by the Transportation Research Board (TRB) of the National Research Council in 2006. SR286 was prepared by a committee charged by NHTSA with developing and performing a national tire efficiency study and literature review. SR286 summarizes a number of earlier studies of rolling resistance in passenger car tires and draws general conclusions from those studies. The following observations from SR286 are potentially relevant to the current project:

- Rolling resistance is due to hysteresis, which is a function of tire characteristics such as dimensions, geometry, composition, and tread depth. The RRC of a tire

decreases as the tire wears; this reduction is due in part to the reduction in tread depth. Rolling resistance is also affected by operating conditions such as load, temperature, and inflation pressure. The RRC of an underinflated tire is substantially higher than that of a tire that is properly inflated.

- A reduction in RRC of 0.001 (1 in the units used in this report²) is expected to increase fuel economy by 1 to 2 percent. The actual increase will be closer to 1 percent for low-RRC tires and urban driving, and closer to 2 percent for high-RRC tires and highway driving.
- Earlier studies described in SR286 provide some useful information, but data from most of these studies does not represent current replacement market tires. Based on comparisons of recent data (Ecos Consulting 2002, RMA 2005) to data from earlier studies, SR286 concludes (p. 74) that “significant progress has been made in reducing rolling resistance . . . over the past 25 years.”
- SR286 draws the following general conclusions from examination of data (p. 75): RRC tends to be higher for smaller rim diameters (13 and 14 inches) and higher speed ratings (W, Y, and Z), but there is substantial variation in RRC (often greater than 20 percent) among tires of similar size and speed rating.
- The rolling resistance, traction, and wear characteristics of tires are not independent (p. 78).

In addition to the review of earlier studies, SR286 presents an independent analysis of rolling resistance data obtained from two sources described in more detail in a later section of this report (i.e., the 2002 Ecos Consulting data set and the 2005 RMA data set). The combined data set used in this analysis includes 196 RRC values. Data for light truck (LT-metric) and winter tires were excluded. SR286 indicates that the data set used in the analysis may not be representative of the domestic replacement tire market, and suggests (p. 83) that sales data should be used to determine the distribution of tire characteristics that is representative of tires in use.

² RRC values are dimensionless numbers obtained by dividing the measured rolling resistance by a portion of the applied load. RRC values computed in this way are typically on the order of 0.01. Many people in the tire industry find it convenient to multiply the computed values by 1,000. This is equivalent to deriving the RRC by dividing the rolling resistance in kilograms by a portion of the load expressed in metric tons (1,000 kg), so the resulting values are sometimes assigned units of kg/metric ton. This adjustment (multiplication by 1,000) results in a typical value of 10 and may reduce confusion and the likelihood of errors. Except where otherwise specified, all of the RRC values in this report include multiplication by 1,000.

Part of the SR286 committee's scope of work was to evaluate the potential effects of lowering the rolling resistance of replacement tires on tire wear life and safety-related performance characteristics. The SR286 report addresses this task in part by comparing the RRC values to the Uniform Tire Quality Grade (UTQG) ratings for tread wear and traction in the combined data set. The report notes, however, that no direct measure of traction is available and that the UTQG tread wear ratings may not be a reliable index of tire wear performance. Regarding the relationship between RRC and tread wear ratings, SR286 reports (p. 92) that there is no noticeable association when all 196 data points are considered at once but that subsets of the data suggest the possibility of a weak relationship. Regarding the relationship between RRC and traction ratings, SR286 reports (p. 85) that few tires have a low RRC value and a high (AA) UTQG traction rating.

A multiple regression analysis summarized in SR286 indicates that with adjustments for manufacturer and data provider, about 50 percent of the variation in RRC can be explained by a combination of variables that represent tire characteristics including two tire dimensions (rim diameter and aspect ratio), tread depth, speed rating, and UTQG traction rating. Overall, this regression supports the conclusion drawn from earlier studies that RRC tends to be higher for tires with smaller rim diameters and higher speed ratings (p. 96). Another regression analysis presented in SR286 indicates that after an adjustment for manufacturer, about 50 percent of the variation in UTQG tread wear ratings can be explained by a combination of variables that represent tire weight, tread depth, speed rating, and UTQG traction rating. Overall, this regression suggests that reducing tread depth to reduce RRC may also reduce tread wear rating and tire life (p. 99). SR286 also notes (p. 99) that rolling resistance declines as a tire wears and the difference in RRC measured in two new tires may be disproportionately higher than the average difference in RRC over the life of the tires.

The California Fuel-Efficient Tire Report (CEC 2003)

Another reference that is relevant to this project is the California Fuel-Efficient Tire Report produced in 2003 by the CEC. This two-volume document describes work regarding fuel efficiency and tires performed by or for the CEC through 2002, including the initial RRC testing (43 tires) performed by an independent laboratory for Ecos Consulting. Volume I of the CEC report states that "sufficient data is not available to draw conclusions regarding the performance and characteristics of fuel-efficient tires" and recommends an expanded data collection program. This volume also indicates that

the CEC recognizes the potential trade-offs inherent in tire design, noting that in addition to more RRC data, “analysis and potentially additional testing are needed to ensure that no safety or other important tire attributes are compromised with fuel-efficient tires.” Volume II of the report was prepared by CEC’s consultants, TIAX LLC and Ecos Consulting.

Subsequent to publication of the 2003 report, CEC sponsored testing of 745 tires (5 replicates of each of 149 types) by an independent laboratory. The resulting data have been released to the RMA. This data set is described in more detail in a later section of this ENVIRON report.

2.5 Identification of Key Issues Regarding Rolling Resistance

The intent of the California legislation (AB 844) is to ensure that replacement tires sold in the state are at least as energy efficient, on average, as original equipment tires. The tasks required by AB 844 include development of: (1) a data base of the energy efficiency of a representative sample of replacement tires sold in the state; (2) a rating system for the energy efficiency of replacement tires sold in the state; and (3) requirements for tire manufacturers to report the energy efficiency of replacement tires sold in the state.

Our review of this legislation, related web sites, and the documents described in preceding sections of this report leads to identification of the following key issues regarding rolling resistance:

1. The RRC data available in early studies (especially studies conducted before 2002) may not be representative of the current replacement tire market.
2. The degree to which the available RRC data represent the replacement tire market should be evaluated on the basis of replacement tire sales.
3. The distribution of RRC values among a wide variety of replacement tires should be considered in efforts to develop an appropriate energy efficiency rating system.
4. Variation among RRC measurements for the same tire product is expected due to the limits of precision of individual tests (testing precision) and item-to-item variability (product variation). Unless all of the RRC measurements for a tire product are made on the same equipment, systematic differences between RRC measurements made with different test equipment (differences among test machines) may be another important source of variation. These sources of

- variation affect the level of certainty with which the rolling resistance characteristics of a particular tire product can be estimated, which should be considered in developing an appropriate energy efficiency rating system.
5. An appropriate energy efficiency rating system would provide a choice of ratings to the consumer, who is typically interested in purchasing a tire with size and speed rating characteristics specified by the vehicle manufacturer. If possible, the rating system should also allow a consumer to evaluate the likely effects of a small change in size or speed rating on energy efficiency.

3.0 DEVELOPMENT OF THE DATA SETS

This section of the report describes the data sets used in preparing this report, compilation of the comprehensive data set, evaluation of market coverage, and development of a sales-weighted version of the RRC data set.

3.1 RRC Data from Previous Studies

The comprehensive data set compiled for this study includes RRC data from three earlier data sets, which are described separately.

The Ecos Consulting/TRB Data Set (2002)

ENVIRON obtained a tabulated version of the RRC data set generated by Ecos Consulting in 2002 from a web site³ maintained by the Transportation Research Board. According to SR286, a total of 48 tires were tested using the SAE J1269 method. Only 34 of these tests were used in the SR286 analyses; seven tests conducted on LT-metric tires and seven tests conducted on winter specialty tires were excluded due to the SR286 focus on passenger car tires. The 34 Ecos RRC tests used in the SR286 analyses include both P-metric and Euro-metric tires in each of four different tire size categories. The authors of SR286 increased the amount of information available for these tires by adding UTQG ratings for tread wear, traction, and temperature; tire weight and tread depth data obtained from manufacturer product specification sheets; and retail prices obtained from commercial tire web sites in 2005. The data file obtained from the TRB web site provides speed rating information for these tires using the following groups; (S,T), (H,V), and (W,Y,Z).

The RMA/TRB Data Set (2005)

RMA member companies submitted RRC data for more than 200 tires to the National Research Council committee that prepared SR286 in 2005. The data for 154 replacement tires and 8 original equipment tires were used in the SR286 analyses; data for light truck and winter tires were excluded. ENVIRON obtained this data set from the TRB web site listed above for the Ecos Consulting/TRB data set, and also obtained the electronic files submitted to the TRB by the RMA in 2005. The information provided in the original electronic files varies from one manufacturer to another, but the listing obtained from the TRB web site includes UTQG ratings for tread wear, traction, and temperature; tire

³ trb.org/news/blurp_detail.asp?id=5973 (SR286 p. 53)

weight and tread depth data obtained from manufacturer product specification sheets; and retail prices obtained from commercial tire web sites in 2005. The data file obtained from the TRB web site provides speed rating information for these tires using the same groupings used for the Ecos data; (S,T), (H,V), and (W,Y,Z). Data are provided for 77 different tire sizes (as defined by the P prefix and the three tire dimensions). ENVIRON detected an internal contradiction in the SR286 data table; the rim diameter for the Michelin Pilot LTX P285/55R18 tire (row 99 of the table for replacement tires) was listed as 16 instead of 18. This discrepancy was resolved by comparing the SR286 table to the RMA files, then corrected in the comprehensive data set. In addition, comparison of the SR286 data tables to information provided on the manufacturers' web sites during preparation of the comprehensive data set led to changes in the speed rating groups assigned to four of the tires (rows 54, 64, 113, and 114 of the SR286 table for replacement tires) and to the weight assigned to another tire (row 18 of the SR286 table for replacement tires).

The CEC Data Set (2007)

As noted above, the CEC sponsored testing of 745 tires by an independent laboratory. The resulting data have been released to the RMA. The tests were performed in groups of 5 replicates of each of 149 different tire products. Many different models of two popular tire sizes were tested, including 77 models of (P)195/65R15 tires and 45 models of (P)265/70R17 tires⁴. In addition, 28 different sizes (including P195/65R15) of a single model of tire were tested. For each tested tire, the CEC data sets include identifying information (brand, model, size, and serial number); performance data (load index, speed rating, maximum sidewall load and pressure, and UTQG ratings); other descriptive information (price, construction and sidewall marking details, overall diameter, tread depth, and weight); and measured rolling resistance in pounds. ENVIRON used the information provided by CEC to calculate the RRC for each tire by the following formula:

$$\text{RRC} = (\text{rolling resistance}) / (0.7 \times \text{sidewall maximum load})$$

which assumes that the load applied during the rolling resistance test was 70 percent of the maximum load reported in the CEC files. Average RRC values, overall diameter,

⁴ The (P) used in these size descriptions indicates that both P-metric and Euro-metric tire sizes are included in these categories.

tread depth, and weight were calculated for each set of tires to provide average values for 5 replicates of each of the 149 tire products included in the CEC data set.

3.2 Additional RRC Data Provided by RMA Members

To support the development of a comprehensive data set, members of the RMA provided additional RRC data to ENVIRON. Through April 1, 2008 ENVIRON had received RRC data sets from seven tire manufacturers, all members of RMA. Collectively, these data sets provide information for 675 passenger car tire RRC tests that are included in the comprehensive data set. Data for LT-metric tires and deep tread, winter-type snow tires are not included in this total because these tires fall outside the definition of “replacement tires” provided in AB 844. RRC data from tests performed on various sizes of Michelin X-Ice winter tires are included in the total because the tread depths reported for these tires are not indicative of an abnormally deep tread pattern. RRC tests performed on tires that have been sold as original equipment are included because such tires are generally available in the replacement market as well. Most of the manufacturers indicated to ENVIRON that all of the RRC tests represent tire models and sizes for which at least 15,000 units are produced or imported annually. The reported number of replicate tests performed to derive each RRC value ranges from one to eight.

3.3 Compilation of the Comprehensive Data Set

A comprehensive data set that includes 1,007 RRC values was developed from the information provided in the four data sets described above, i.e., the 2002 Ecos Consulting/TRB data set (34 RRC values); the 2005 RMA/TRB data set (162 RRC values); the 2007 CEC data set (149 RRC values); and the 2007-2008 RMA data set (675 RRC values). The 13 RRC values provided by Goodyear in 2007 had been submitted to the National Research Council in 2005 and included in the SR286 data set with less specific speed rating information. Although duplicate reporting of RRC tests for specific tires would not significantly affect the primary findings discussed in this report, these 13 tire tests were deleted from the 2005 RMA/TRB data set before the data sets were combined to prevent double-counting. This resulted in a total of 1,007 RRC tests. A few minor errors in the data sets were corrected during development of the comprehensive data set. The information provided with each RRC value depends to a large extent on the source of the data; some of the variables of interest were not reported in all of the previous studies or by all of the tire manufacturers. Each RRC value is associated with a specific tire product identified by manufacturer, brand, model, and size. The size of each tire product is defined by three dimensions (section width, aspect ratio, and rim diameter)

that may or may not be preceded by the prefix (“P”) that distinguishes between P-metric (U.S.) and Euro-metric passenger car tires. The comprehensive data set also notes whether each tested tire has been sold as original equipment.

The other tire characteristics included in the comprehensive data set were not reported in all of the original data sets. As explained in The Pneumatic Tire (NHTSA 2005) a tire’s service description is composed of a load index and a speed rating. The load index indicates the tire’s rated load carrying capacity and the speed rating indicates the maximum speed at which the tire is designed to carry that load. The data sets obtained from the TRB web site do not include load index values or specific speed ratings; ENVIRON obtained the missing values for these two variables from web sites⁵ maintained by the tire manufacturers and large tire retailers (tirerack.com and others) and added them to the comprehensive data set. Other variables addressed in the comprehensive data set include UTQG ratings, tread depth, outside diameter, and weight of the tested tires. The data for each of these variables is incomplete because some of this information has not been located.

3.4 Characterization of the Domestic Replacement Tire Market

AB 844 requires the CEC to develop a database of the energy efficiency of a representative sample of replacement tires sold in the state. One way of judging the degree to which an RRC data set represents the replacement tires sold in the state is to determine whether the data set covers the range of tire characteristics found in the replacement tire market. In this case, the primary tire characteristics of concern are the size and service description variables (load index and speed rating); auto manufacturers specify the size and speed rating characteristics of the replacement tires that are suitable for use on each of their passenger vehicles. Even if the data set covers the range of sizes and service descriptions found in the replacement tire market, the statistical characteristics of the data set may not be representative of the market if the frequency with which certain tire products appear in the data set is much different from the frequency with which these tire products appear in the market. To evaluate the degree to which an RRC data set represents the replacement tire market, the replacement tire market was characterized by determining the range and frequency of the size and service description variables of the tire products sold in that market.

⁵ To the extent possible, missing data was copied from web sites maintained by the tire manufacturers. Information from other sites was used only when the missing information was not found on the manufacturers’ web sites and the descriptive information on the retailers’ web sites matched all of the available information for the tested tire product.

The RMA publishes a Fact Book each year that provides statistics on tire shipments in the preceding year. In the 2007 Fact Book, domestic passenger tire shipments by RMA members are reported and broken down by tread design, speed rating, and market (original equipment vs. replacement) along with estimates of non-RMA shipments. For each market, the 10 most popular sizes are listed with their percentages of those markets. These statistics are helpful, but they do not provide a detailed characterization of the entire replacement tire market. The 2007 Fact Book indicates that shipments by RMA members accounted for approximately 90 percent of the domestic replacement tire market in 2006.

At ENVIRON's request, the RMA supplied a compilation of domestic passenger car tire shipment data for 2006 submitted by RMA members. The data submitted by the various members are combined to protect confidential information. The total number of units shipped by all RMA member companies is reported for each combination of tire size and speed rating in separate tables for the original equipment and replacement tire markets. In the absence of actual sales data, the tire shipment data set provided by the RMA was used to estimate the range and relative frequency of tire sizes and service descriptions sold in the domestic replacement tire market. The replacement market table includes 1,999 specific combinations; some of these are for tires with rim diameters of 12 inches or less or temporary and space saver spare tires, which are excluded from the definition of replacement tires in AB 844. Shipment data for these tires, as well as for some sizes with one or more dimensions missing or masked to protect proprietary information, are not considered in the analyses described in this report. The remaining rows of the replacement market data table provide shipment totals for 1,888 specific combinations of tire size and speed rating. The total number of replacement tires shipped by RMA members in 2006 is approximately 175.5 million, while the total for the excluded combinations is less than 300,000. Thus, the excluded combinations represent less than 0.2 percent of the total 2006 replacement tire shipments by RMA members.

The 1,888 specific combinations of tire size and speed rating are counted by considering P-metric and Euro-metric sizes with the same dimensions as separate sizes. For example, sales data for P-metric P195/65R15 tires with an S speed rating are reported separately from sales for Euro-metric 195/65R15 tires with an S speed rating. If the distinction between P-metric and Euro-metric sizes is ignored, replacement market tire shipment totals are available for 464 tire sizes defined by the three dimension variables. This

aggregation of the data is reasonable because the distinction between the P-metric and Euro-metric sizes is ignored by most consumers, many tire vendors, and in reports prepared by some previous investigators (including the SR286 committee). Many of these sizes appear with only one or two of the 11 speed rating codes listed in the tire shipment data set.⁶

3.5 Coverage of the Domestic Replacement Tire Market

The comprehensive RRC data set includes data for 151 different tire sizes (defined by the three tire dimension variables) with various speed rating codes. The extent to which this data set represents the domestic replacement tire market is illustrated in Figure 1. This figure shows the percentages of 2006 RMA replacement shipments for categories defined by the 151 tire sizes and four speed rating groups. The speed rating groups used in Figure 1 represent four levels of tire performance and are based on tire construction characteristics that can influence rolling resistance; these groups are also used in the RMA's annual Fact Book publications. The percentages of shipments shown in Figure 1 are used as estimates of sales percentages in evaluating the coverage of the domestic replacement tire market provided by the comprehensive RRC data set.

Each category of tire size and speed rating group is color-coded in Figure 1 to indicate the nature of the data available for that category. Categories that do not appear in either the RRC data set or the replacement tire shipment data set are represented by dark blue cells. These categories are probably not manufactured. The pattern of dark blue cells in Figure 1 suggests that tires with higher speed ratings are generally not found in many of the smaller sizes, and that lower speed ratings are less common in the largest tire sizes. The medium-blue cells represent categories that appear in the RRC data set and the tire shipment table, while the light green cells represent categories with shipment data but no RRC data.

The numbers in Figure 1 indicate that the tire size and speed rating group categories represented in the comprehensive RRC data set account for almost 88 percent of replacement tire sales. If the speed ratings are disregarded, the sizes in the RRC data set account for nearly 93 percent of replacement tire sales. None of the categories that are not represented by RRC data accounts for as much as one percent of the shipments in the domestic replacement tire market. Although the figure only illustrates the extent of

⁶ The speed rating codes that appear in the passenger car tire shipment data set include P, Q, R, S, T, H, V, W, Y, Z, and no rating.

market coverage for the 151 tire sizes that appear in the RRC data set, this is true for all of the 464 tire sizes that appear in the tire shipment data table. Based on these observations, the comprehensive RRC data set represents the overwhelming majority of the tires sold in the domestic replacement tire market.

3.6 Development of the Sales-Weighted RRC Data Set

To determine whether the RRC values in the comprehensive data set provide an accurate representation of the frequency distribution of RRC values in the replacement tire market, the percentage of RRC tests for each combination of tire size and speed rating was compared to the percentage of replacement tire shipments that is associated with that combination. The percentages and ratios used in this comparison are shown in Table 1. Tire shipment data was not available for 8 of the 308 specific tire size and speed rating combinations, probably due to masking of dimensions in the shipment data to protect proprietary information. Ratios calculated as (percentage of RRC tests)/(percentage of replacement shipments) indicate that some combinations of tire size and speed rating are substantially over-represented or under-represented in the comprehensive RRC data set relative to their percentages of replacement tire shipments. A ratio of one indicates that a combination is represented in proportion to estimated sales, lower ratios suggest under-representation, and higher ratios suggest over-representation. Almost 80 percent of the ratios are between 0.1 and 10. The lowest ratio is less than zero because reported replacement tire shipments for that particular combination of size and speed rating were negative. Most of the 66 combinations that are heavily over-represented in the comprehensive RRC data set (i.e., that have ratios greater than 10 in Table 1) are for larger tire sizes with high performance ratings but relatively small shipment volumes.

To account for this apparent imbalance in the comprehensive data set, a sales-weighted version of the data set was developed. In this data set, each RRC value is accompanied by a weighting factor based on the percentage of replacement tire shipments it represents. Sales data for individual brands and models of tires are not available, so the weights are based on sales percentages (estimated from shipment data) that are aggregated over all replacement tires sold by RMA members with a specific combination of tire size and speed rating. First, the percentage of total shipments (i.e., market share) for each specific combination of tire size and speed rating was calculated. Then the percentage of total sales associated with each RRC test was determined by dividing the market share for the size/speed rating combination represented by the RRC test by the number of RRC tests available for that combination. This step, which ensures that each combination is

represented by a single RRC value computed by averaging the RRC values that represent that combination, was necessary because while each of the 1,007 RRC tests is associated with a certain size/speed rating combination, some combinations are represented by many RRC tests. Thus, each of the 1,007 RRC tests was assigned a weight based on the market share it represents. The comprehensive RRC data set contains 1,007 RRC values, but some of these values are reported for more than one test – there are only 583 unique RRC values. The total weight assigned to each unique RRC value was calculated by adding the weights assigned to the tests that reported that RRC value. Finally, the weights were adjusted to sum to one. This procedure provided a set of unique RRC values, each accompanied by a weighting factor based on the share of the 2006 replacement market represented by the RRC value.

The sales-weighted RRC data set developed by this process can be used to characterize the distribution of RRC values within the domestic replacement tire market. Note, however, that the weights were calculated using tire shipment data reported for RMA members only and aggregated over all shipments for each combination of tire size and speed rating. Although shipments by RMA members account for approximately 90 percent of total replacement market sales, the extent to which the distribution of non-RMA sales across the size/speed rating combinations may differ from the distribution of RMA shipments is not known. Also, the market share for each combination of tire size and speed rating is expected to vary somewhat from year to year; recent trends are toward increased sales of tires in larger sizes and with higher speed ratings. In addition, some tire size/speed rating combinations are not represented in the comprehensive RRC data set by direct testing (as explained in Section 3.5).

4.0 ANALYSIS OF THE DATA SETS

4.1 Distribution of RRC Values in the Replacement Market

ENVIRON used both versions of the comprehensive RRC data set (unweighted and sales-weighted) to characterize the distribution of RRC values in the domestic tire replacement market. The RRC values in each data set were analyzed independently to select and fit an appropriate distribution for the population represented by that data set. Each of the selected distributions was characterized by graphing and tabulating the cumulative density function. Most of this analysis was performed using a commercial software package (Crystal Ball version 7.3, produced by Decisioneering Inc.). The characteristics of the distributions fit to the two data sets were compared; the differences between these distributions are small.

The summary statistics for the two data sets are shown in Table 2A. The general characteristics of the data sets are very similar; each has a mean RRC of approximately 10, a relatively small standard deviation, and a slight positive skew. Relative to the unweighted comprehensive data set, the sales-weighted data set has a slightly higher mean, median, and skew with a slightly lower standard deviation. To expedite the process of fitting and evaluating various distribution functions to the sales-weighted data set, a large set of possible RRC values was generated for each data set by Monte Carlo simulation. Goodness-of-fit statistics produced by analysis of the large samples indicate that both data sets are generally consistent with a log-normal distribution and less consistent with a normal distribution. Although there is no reason to expect the population of RRC values in the domestic replacement tire market to follow a specific mathematical distribution function (particularly when a wide variety of sizes, service descriptions, and manufacturers are considered together), a log-normal distribution curve was fit to each of the data sets.

The statistical characteristics of the two fitted distributions are illustrated in Figure 2 and tabulated in Table 2B. The distributions are very similar, but the differences may be meaningful in the context of developing and evaluating tire rating systems based on RRC values.

4.2 Sources of Variation in RRC Values

The variation in the RRC values in the comprehensive data set is attributable to a number of sources. Most of this variation is likely due to differences in the rolling resistance characteristics of the various tire products represented in the data set. This section focuses on the sources of variation that may affect RRC values used to represent a single tire product or SKU. The effects of variation on comparisons between tire products are also discussed.

Variation in RRC Measurements for a Single Tire Product or SKU

Where a number of individual RRC measurements made on different items of the same tire product or SKU with the same test equipment are available, there are two primary sources of the variation among the measurements. One source is the limited precision with which RRC measurements can be made; the standard testing procedures are complex and the final RRC value obtained from any test can be affected by a number of conditions that can only be controlled within certain ranges. This first source of variation (testing precision) includes both repeatability on the same test equipment over the short term (hours) and stability of the test equipment over the longer term (day to day, week to week). The second source of variation is differences among the individual items tested (product variation); although tires are engineered and manufactured to close quality control tolerances, some item-to-item variability is inevitable. Unless the precision of the individual measurements has been determined, it is difficult to separate the variation caused by this source from the item-to-item variation. In this case, it is reasonable to assume that variation in the replicate measurements for each tire product is contributed by both sources and to treat the variation from these two sources together. The limits of precision that can be achieved in RRC testing on a particular set of test equipment are addressed in the proposed ISO 28580 standard by setting targets for the variation among repeated measurements made on special reference tires. The proposed ISO 28580 standard also includes procedures for quantifying and correcting for systematic differences between test equipment (a third source of variation). The variation due to differences between test machines may be important when comparing RRC values in data sets that include measurements made in different laboratories.

The RRC values in the comprehensive data set were obtained from a variety of sources with differing levels of information regarding the way in which the RRC value was determined. Most of the RRC values provided by the RMA members in 2007-2008 were reported as averages derived from replicate measurements produced at in-house testing

facilities. Information regarding systematic variations between the laboratories that conducted the tests is not available, and the number of replicates reported for the various values ranges from 1 to 8. The RRC data submitted to the National Research Council by individual manufacturers in 2005 and included in the SR286 data tables was most likely produced by similar methods, but the number of replicates is not reported in the SR286 tables. The RRC values in the Ecos data set also appear to be averages of replicate measurements and the number replicates is not reported in the SR286 tables, but all of the measurements used to develop this data set were probably made in a single laboratory. Except in cases where the RRC value is based on a single test, individual measurements are not available in these data sets.

The CEC data set differs from these other data sets in two important ways. First, the CEC data set includes a separate RRC measurement for each of 5 replicates for each tested tire product or SKU. Second, all of the CEC tests were apparently performed by the same laboratory (Smithers Scientific Services, Inc.) and presumably on the same test equipment. Due to these differences, the CEC data set can be used to study the variation that results from the limited precision of RRC measurements and item-to-item variability.

Variation Among Replicate RRC Measurements for a Single Product or SKU

The CEC data set includes 5 replicate measurements for each of 149 different SKUs. ENVIRON has not obtained an estimate of the precision of the individual measurements, so for simplicity, all of the variation in the replicate measurements for each tire product is referred to in this discussion as item-to-item variation. Item-to-item variation in the same tire SKU may occur for several reasons, including differences in materials availability over time or in different geographic regions, manufacturing equipment or process changes, differences in equipment between different plants manufacturing the same item, and simple variability within a manufacturing plant (within quality control limits). This type of variability is necessary for manufacturing flexibility and efficiency.

The CEC data set demonstrates that small differences in RRC may be observed in rolling resistance testing of multiple replicates of a specific tire SKU. The variation among the 5 RRC measurements provided for each tested SKU is quantified by the standard deviation, which is listed in Table 3. Characteristics that may vary from item to item and affect the RRC of each tested tire are reported individually in the CEC data set. These characteristics include the serial number, overall diameter, tread depth, and weight of each tire. ENVIRON examined the relationships among the deviations from the average

values for each SKU to see whether the variation in RRC measurements within each SKU was due to variations in overall diameter, tread depth, and weight. The variations in RRC do not appear to be related to variations in overall diameter or tread depth, and variations in tire weight explain less than 20 percent of the variation in RRC measurements. ENVIRON also examined the serial numbers for the SKUs with high levels of variation in the RRC measurements. In general, the serial numbers reported for the SKUs with high levels of variation in the RRC measurements were no more variable than the serial numbers reported for other SKUs.

Uncertainty Associated with RRC Values Assigned to a Single Product or SKU

The level of uncertainty associated with an RRC value depends on the basis for the value and the way the value is used. An individual measurement (i.e., the result of a single test) may be a very accurate estimate of the actual RRC of the item tested; but because of item-to-item variability, it is a much less accurate estimate of the mean RRC of all items of the same tire product or SKU. When the individual measurement is used to represent the RRC of the tested item, the only relevant source of variation is the limited precision of the test procedure; but when the same measurement is used to represent the entire SKU, item-to-item variability must also be considered.

To evaluate the accuracy with which averages of replicate RRC measurements can be used to represent entire SKUs, ENVIRON developed confidence intervals for the mean RRC values for the 149 SKUs in the CEC data set. Table 3 shows the size of the 95 percent confidence interval computed for each SKU. The confidence interval is a range of values that is often written as the average value plus or minus a specified amount, for example 10.5 ± 0.5 . For each of the tested SKUs, the probability that the true average (mean) RRC for the SKU is within the confidence interval is 95 percent. The average half-width in the table is ± 0.26 , but the smallest confidence interval would be written as 10.98 ± 0.03 and the largest would be 10.01 ± 1.3 . Thus, the uncertainty involved in estimating the mean RRC for a tire SKU from a small number of tests varies substantially from one SKU to another and can be quite large for some tire products. Reducing the number of replicate tests from 5 to 3 would likely double the half-width of these confidence intervals.

The confidence interval half-widths listed in Table 3 are plotted against the average RRC values in Figure 3. There is no apparent relationship between the average RRC and the half-width. Further investigations indicate that the half-width (which reflects the item-to-

item variation) is not strongly related to other reported SKU characteristics such as tire size, speed rating, and UTQG ratings.

Statistical tests using the CEC data indicate that the mean RRC values of many of the tested SKUs may not be significantly different even when the difference in the average RRC values for the 5 replicate measurements is substantial. Because the standard deviation of the 5 replicate measurements varies substantially from one SKU to another, all pairwise comparisons within each of the two primary size categories were examined. Using a 95 percent level of significance, the results indicate that some pairs of SKUs with differences in average RRC as low as 0.16 are significantly different, while other pairs of SKUs with differences in average RRC greater than 1.0 are not significantly different. The implications of this analysis for the larger comprehensive data set should be considered. As noted previously, most of the RRC values reported in the comprehensive data set were derived as averages of replicate measurements produced at in-house testing facilities. The number of replicates reported for the various values ranges from 1 to 8 and the individual replicate measurements are not available. Therefore, the levels of uncertainty associated with most of the RRC values in the comprehensive data set cannot be accurately determined. These levels may differ substantially from one tire product to another. However, even if the levels of uncertainty associated with the RRC values in the other data sets are similar to those observed in the CEC data set, systematic variations between the laboratories that conducted the RRC tests for the various tire products may result in additional variation that must be considered in attempts to compare the RRC values used to represent different tire products. At present, the information needed to quantify the variation from this source is not available.

Implications for a Consumer Information Program

The preceding analysis of item-to-item variability illustrates one reason why rolling resistance values for specific tire products should be viewed as intervals that reflect uncertainty, rather than as point values. This analysis was conducted using the CEC data set, which does not include variation in RRC values due to differences between test equipment. In larger data sets that include variation from this source, the level of confidence associated with differences in average RRC values would be lower than suggested by the preceding analysis. Even a point value actually represents an interval; for example, an RRC value reported as 10.6 indicates that the actual value is between 10.55 and 10.65. Thus, the number of digits used in reporting a value implies an interval. When possible, point values should be reported to a level of precision that is consistent

with the level of certainty. When the level of uncertainty is substantially greater than suggested by a point value, other methods of presenting the uncertainty should be considered. When the point value is used to represent a characteristic of a large population (such as the mean RRC of all items in a single SKU), one alternative is to provide a confidence interval with the point value.

The objective of the energy efficiency rating system required by AB 844 is to enable consumers to make more informed decisions when purchasing replacement tires. The information provided to consumers should allow them to select tires that are more energy efficient. The selection process will involve comparison of two or more tire products using the information provided by the energy efficiency rating system. This information should be reliable; a consumer who uses the information to select a more energy-efficient tire should be confident that the selected tire actually is more efficient. A selection process based on comparison of point values that represent the mean RRC of an entire SKU or tire product is not likely to be reliable. Statistical tests using the CEC data indicate that the mean RRC values of many of the tested SKUs may not be significantly different, even when the difference in the average RRC values for the 5 replicate measurements is greater than 1.0 kg/metric ton. Therefore, comparisons of the rolling resistance of individual SKUs or tire products should be based on intervals rather than point values.

4.3 Evaluation of a Proposed RRC Rating System

AB 844 requires the CEC to adopt an energy efficiency rating system for replacement tires that will enable consumers to make more informed decisions when purchasing tires. One desirable characteristic of this system is consumer choice; ideally, a consumer purchasing tires for a specific vehicle would find a selection of tires with the same size and similar service descriptions, but a range of fuel efficiency ratings. The RMA and others have suggested rating systems that divide the replacement tire market into intervals (or bins) based on RRC values. ENVIRON evaluated one of many such systems in this study.

The system analyzed in this study assigns energy efficiency ratings using the following criteria:

Energy Efficiency Rating	Lower RRC Limit	Upper RRC Limit
5-star	None	7.5
4-star	7.5	9.0
3-star	9.0	10.5
2-star	10.5	12.0
1-star	12.0	None

The consequences of adopting this system have been evaluated using the comprehensive (1,007-value) RRC data set. A consumer purchasing tires for a specific vehicle is expected to consider size based on the three tire dimensions (section width, aspect ratio, and rim diameter) without regard to the prefix used to distinguish between P-metric and Euro-metric tires. Assuming that this consumer considers speed rating in making a decision, the distinctions that are most likely to matter are between the four speed rating groups used in the RMA’s annual Fact Book and in earlier sections of this report. The four speed rating groups (which are based on tire construction characteristics that can influence rolling resistance) are:

- H-rated tires designed for speeds of up to 130 miles per hour (mph);
- V-rated tires designed for speeds of up to 149 mph;
- ZR-rated tires designed for speeds higher than 149 mph; and
- Tires with various speed ratings (generally ranging from P to T) designed for maximum speeds lower than 130 mph.

The range of energy efficiency rating choices such a consumer might have when purchasing replacement tires for a specific vehicle was investigated by tabulating the number of RRC test values in each energy efficiency segment for each combination of tire size and speed rating group found in the comprehensive RRC data set. The results of this investigation are shown in Figure 4.

Under the rating system considered in this report, a choice of at least two energy efficiency ratings would be available for most consumers. The comprehensive data set includes RRC values for tires in 206 distinct categories defined by tire dimensions and

speed rating group. Together, these 206 combinations account for nearly 88 percent of 2006 replacement market shipments by RMA members, and the 116 combinations represented by two or more RRC test values account for nearly 80 percent of these shipments. Of the 116 combinations with multiple RRC tests, 87 are represented by tires with at least two different energy efficiency ratings under the system considered here. These 87 combinations account for more than 75 percent of 2006 replacement market shipments by RMA members. Consumers purchasing tires with any of these 87 combinations of tire size and speed rating group would have a choice of two or more energy efficiency ratings. The tested tires in several of the size and speed rating combinations most common in the comprehensive data set have 4 or 5 different star ratings. These results are based on the comprehensive RRC data set, but even this data set does not include measurements for many specific sizes and models of replacement tires. Therefore, the actual number and range of choices available to a consumer purchasing a tire within a specific size and speed rating group is expected to be substantially greater than that found in the limited data set used in this analysis.

5.0 CONCLUSIONS

A comprehensive data set that represents the rolling resistance characteristics of passenger car tires sold in the domestic replacement tire market was developed. This data set includes 1,007 RRC measurements compiled from tests performed using standardized methods by tire manufacturers and independent laboratories. The data set also includes values for a number of tire characteristics that may influence rolling resistance. As defined by size and service description, over 200 different types of passenger car tires were tested. Tire shipment data indicate that these types represent nearly 90 percent of the replacement tires sold in the domestic tire market in 2006.

The distribution of rolling resistance coefficients in the domestic replacement tire market was investigated by analysis of two versions of the comprehensive data set. In the unweighted version of the data set, the distribution of RRC values was determined by fitting probability functions to the reported RRC values; in the sales-weighted version, the functions were fit to weighted RRC values. The sales-weighted analysis was performed to address the possibility that some sizes or types of tires were over-represented or under-represented in the comprehensive data set. The probability functions fit to these versions of the comprehensive RRC data set have similar statistical characteristics and the differences between them are relatively small.

Four sources of variation in the RRC values were identified and the variation resulting from some of these sources was addressed quantitatively. These four sources are: (1) the limits of precision of individual RRC measurements (test precision), (2) differences between individual items (tires) of the same tire product (product variability), (3) differences between test equipment, and (4) differences between tire products designed and produced for different vehicles and purposes by various manufacturers. The comprehensive RRC data set includes variation from all four of these sources but few of the RRC values are individual measurements, while the smaller CEC data set reportedly does not include variation due to differences between test equipment and provides five individual measurements (replicates) for each tested product. Analysis of the CEC data set indicates that the level of uncertainty associated with the average RRC value varies substantially from one product to another and does not appear to be related to the other reported variables. Hypothesis tests demonstrate that differences in average RRC between tire products as great as 1 kg/metric ton (or approximately 10 percent of the RRC values) are not always statistically significant due to the variation among the

replicates for each product. These results indicate that an RRC value assigned to any particular tire product should be reported as an interval, not as a point value.

A system proposed by the RMA for rating the energy efficiency of replacement tires based on rolling resistance was evaluated. This system assigns each tested tire to one of five categories defined by ranges of RRC values. Each category is represented by a number of stars (from one star for tires with the highest RRC values to five stars for tires with the lowest RRC values). Analysis of the comprehensive RRC data set indicates that under this rating system, consumers of most popular sizes and types of replacement passenger car tires would be able to choose among tires with at least two different star ratings.

TABLES

TABLE 1
Ratios (percentage of RRC tests/percentage of replacement sales)
for 308 specific combinations of tire size and speed rating
in the comprehensive RRC data set

P-metric or non-P	section width	aspect ratio	rim diameter	speed rating	number of RRC tests	percentage of total RRC tests	percentage of 2006 RMA replacement sales	ratio	percentage of 2006 RMA replacement sales for rows with ratios <10	number of RRC tests for cells with ratios <10
P	155	80	13	S	2	0.199%	0.191%	1.04	0.191%	2
P	165	80	13	S	1	0.099%	0.020%	4.90	0.020%	1
N	175	70	13	S	1	0.099%	0.142%	0.70	0.142%	1
P	175	70	13	S	8	0.794%	0.561%	1.42	0.561%	8
P	175	70	13	T	1	0.099%	0.071%	1.40	0.071%	1
P	175	80	13	S	1	0.099%	0.018%	5.41	0.018%	1
N	185	70	13	S	1	0.099%	0.046%	2.14	0.046%	1
P	185	80	13	S	1	0.099%	0.035%	2.85	0.035%	1
N	175	65	14	S	1	0.099%	0.055%	1.82	0.055%	1
P	175	65	14	S	2	0.199%	0.567%	0.35	0.567%	2
P	175	70	14	S	1	0.099%	0.159%	0.63	0.159%	1
N	185	60	14	T	1	0.099%	0.010%	9.91	0.010%	1
P	185	60	14	H	5	0.497%	0.104%	4.77	0.104%	5
P	185	60	14	T	1	0.099%	0.068%	1.46	0.068%	1
N	185	65	14	S	2	0.199%	0.127%	1.56	0.127%	2
P	185	65	14	H	2	0.199%	0.062%	3.18	0.062%	2
P	185	65	14	S	11	1.092%	1.263%	0.87	1.263%	11
P	185	65	14	T	5	0.497%	0.478%	1.04	0.478%	5
N	185	70	14	S	4	0.397%	0.252%	1.58	0.252%	4
N	185	70	14	T	3	0.298%	0.309%	0.97	0.309%	3
P	185	70	14	S	9	0.894%	0.857%	1.04	0.857%	9
P	185	70	14	T	1	0.099%	0.188%	0.53	0.188%	1
P	185	75	14	S	1	0.099%	0.405%	0.25	0.405%	1
P	195	60	14	H	1	0.099%	0.157%	0.63	0.157%	1
N	195	70	14	S	1	0.099%	0.272%	0.37	0.272%	1
N	195	70	14	T	1	0.099%	0.346%	0.29	0.346%	1
P	195	70	14	S	7	0.695%	1.144%	0.61	1.144%	7
P	195	75	14	S	1	0.099%	0.534%	0.19	0.534%	1
N	205	70	14	S	1	0.099%	0.047%	2.11	0.047%	1
P	205	70	14	S	1	0.099%	0.190%	0.52	0.190%	1
N	205	75	14	P	1	0.099%	no data	--		0
P	205	75	14	S	3	0.298%	0.654%	0.46	0.654%	3
P	215	70	14	S	1	0.099%	0.348%	0.29	0.348%	1
P	215	75	14	S	1	0.099%	0.083%	1.20	0.083%	1
P	185	60	15	T	1	0.099%	0.246%	0.40	0.246%	1
N	185	65	15	Q	1	0.099%	0.008%	12.1		0
P	185	65	15	S	1	0.099%	0.283%	0.35	0.283%	1
P	185	65	15	T	3	0.298%	0.190%	1.57	0.190%	3
N	195	50	15	V	1	0.099%	0.026%	3.84	0.026%	1
N	195	50	15	W	1	0.099%	0.007%	13.7		0
N	195	55	15	V	1	0.099%	0.105%	0.94	0.105%	1
N	195	55	15	W	1	0.099%	0.015%	6.64	0.015%	1
P	195	55	15	T	1	0.099%	0.004%	24.1		0
P	195	55	15	V	2	0.199%	0.071%	2.80	0.071%	2
N	195	60	15	H	6	0.596%	1.046%	0.57	1.046%	6
N	195	60	15	V	2	0.199%	0.034%	5.83	0.034%	2
P	195	60	15	H	4	0.397%	0.766%	0.52	0.766%	4
P	195	60	15	S	3	0.298%	0.266%	1.12	0.266%	3
P	195	60	15	T	2	0.199%	0.547%	0.36	0.547%	2
N	195	65	15	H	18	1.787%	0.833%	2.15	0.833%	18
N	195	65	15	Q	2	0.199%	0.015%	13.0		0
N	195	65	15	T	6	0.596%	0.297%	2.01	0.297%	6
N	195	65	15	V	3	0.298%	0.028%	10.6		0
P	195	65	15	H	20	1.986%	0.483%	4.11	0.483%	20
P	195	65	15	S	27	2.681%	1.078%	2.49	1.078%	27
P	195	65	15	T	23	2.284%	0.555%	4.12	0.555%	23
P	195	65	15	V	3	0.298%	0.000%	746		0
P	205	50	15	W	1	0.099%	0.000%	3,410		0
N	205	60	15	H	5	0.497%	0.648%	0.77	0.648%	5
N	205	60	15	T	1	0.099%	0.201%	0.50	0.201%	1
N	205	60	15	V	1	0.099%	0.026%	3.85		0
P	205	60	15	H	4	0.397%	0.402%	0.99	0.402%	4
P	205	60	15	S	1	0.099%	0.070%	1.42	0.070%	1
P	205	60	15	V	1	0.099%	0.001%	77.3		0
N	205	65	15	H	4	0.397%	0.629%	0.63	0.629%	4
N	205	65	15	Q	1	0.099%	0.014%	7.22	0.014%	1
N	205	65	15	S	2	0.199%	0.010%	19.0		0
P	205	65	15	H	11	1.092%	0.624%	1.75	0.624%	11
P	205	65	15	S	12	1.192%	1.438%	0.83	1.438%	12
P	205	65	15	T	14	1.390%	1.156%	1.20	1.156%	14
P	205	65	15	V	2	0.199%	0.101%	1.97	0.101%	2
N	205	70	15	T	1	0.099%	0.158%	0.63	0.158%	1
P	205	70	15	S	11	1.092%	2.106%	0.52	2.106%	11
P	205	70	15	T	3	0.298%	0.450%	0.66	0.450%	3
P	205	75	15	S	5	0.497%	0.863%	0.58	0.863%	5
P	205	75	15	T	1	0.099%	0.033%	3.00	0.033%	1
P	215	65	15	S	5	0.497%	0.475%	1.05	0.475%	5
P	215	65	15	V	1	0.099%	0.000%	214		0
N	215	70	15	Q	1	0.099%	0.013%	7.71	0.013%	1
N	215	70	15	T	2	0.199%	0.208%	0.95	0.208%	2
P	215	70	15	S	15	1.490%	2.209%	0.67	2.209%	15
P	215	70	15	T	2	0.199%	0.539%	0.37	0.539%	2
P	215	75	15	S	6	0.596%	0.802%	0.74	0.802%	6
N	225	60	15	H	1	0.099%	0.065%	1.52	0.065%	1
P	225	75	15	S	2	0.199%	0.695%	0.29	0.695%	2
P	235	70	15	S	2	0.199%	0.650%	0.31	0.650%	2
N	235	75	15	S	4	0.397%	0.272%	1.46	0.272%	4
P	235	75	15	S	22	2.185%	3.520%	0.62	3.520%	22
P	235	75	15	T	1	0.099%	0.201%	0.50	0.201%	1
P	245	70	15	S	1	0.099%	0.007%	13.6		0
P	255	70	15	S	1	0.099%	0.221%	0.45	0.221%	1
N	265	70	15	H	1	0.099%	0.002%	48.0		0
P	275	60	15	H	1	0.099%	0.000%	-57,974		0
N	205	45	16	W	1	0.099%	0.042%	2.34	0.042%	1
P	205	50	16	H	1	0.099%	0.061%	1.61	0.061%	1
N	205	55	16	H	17	1.688%	0.917%	1.84	0.917%	17
N	205	55	16	T	1	0.099%	0.109%	0.91	0.109%	1
N	205	55	16	V	5	0.497%	0.208%	2.39	0.208%	5
N	205	55	16	W	3	0.298%	0.103%	2.88	0.103%	3
N	205	55	16	Y	3	0.298%	0.007%	45.0		0
N	205	55	16	Z	2	0.199%	0.004%	47.3		0
P	205	55	16	H	4	0.397%	0.566%	0.70	0.566%	4
P	205	55	16	S	3	0.298%	0.410%	0.73	0.410%	3
P	205	55	16	T	3	0.298%	0.280%	1.06	0.280%	3
P	205	55	16	V	1	0.099%	0.092%	1.08	0.092%	1
P	205	55	16	W	1	0.099%	0.005%	19.5		0
P	205	55	16	Y	1	0.099%	no data	--		0
N	205	60	16	V	1	0.099%	0.053%	1.86	0.053%	1

TABLE 1
Ratios (percentage of RRC tests/percentage of replacement sales)
for 308 specific combinations of tire size and speed rating
in the comprehensive RRC data set

P-metric or non-P	section width	aspect ratio	rim diameter	speed rating	number of RRC tests	percentage of total RRC tests	percentage of 2006 RMA replacement sales	ratio	percentage of 2006 RMA replacement sales for rows with ratios <10	number of RRC tests for cells with ratios <10
P	205	60	16	H	3	0.298%	0.573%	0.52	0.573%	3
P	205	60	16	V	10	0.993%	0.253%	3.93	0.253%	10
P	205	65	16	T	1	0.099%	0.172%	0.58	0.172%	1
N	215	45	16	W	1	0.099%	0.003%	34.4		0
N	215	55	16	H	4	0.397%	0.455%	0.87	0.455%	4
N	215	55	16	V	1	0.099%	0.061%	1.62	0.061%	1
P	215	55	16	S	1	0.099%	0.005%	20.9		0
P	215	55	16	T	1	0.099%	0.044%	2.28	0.044%	1
N	215	60	16	Q	1	0.099%	0.007%	13.7		0
N	215	60	16	V	1	0.099%	0.061%	1.62	0.061%	1
P	215	60	16	H	2	0.199%	0.215%	0.92	0.215%	2
P	215	60	16	S	7	0.695%	0.804%	0.86	0.804%	7
P	215	60	16	T	1	0.099%	0.903%	0.11	0.903%	1
P	215	60	16	V	10	0.993%	0.223%	4.45	0.223%	10
N	215	65	16	H	1	0.099%	0.065%	1.54	0.065%	1
N	215	65	16	S	6	0.596%	0.336%	1.77	0.336%	6
N	215	65	16	T	2	0.199%	0.760%	0.26	0.760%	2
P	215	65	16	T	4	0.397%	0.241%	1.65	0.241%	4
N	215	70	16	S	1	0.099%	0.133%	0.75	0.133%	1
P	215	70	16	S	4	0.397%	0.445%	0.89	0.445%	4
N	225	50	16	H	1	0.099%	0.179%	0.56	0.179%	1
N	225	50	16	W	1	0.099%	0.102%	0.98	0.102%	1
N	225	55	16	H	4	0.397%	0.321%	1.24	0.321%	4
N	225	55	16	W	1	0.099%	0.077%	1.29	0.077%	1
P	225	55	16	H	2	0.199%	0.152%	1.31	0.152%	2
P	225	55	16	V	1	0.099%	0.057%	1.75	0.057%	1
N	225	60	16	Q	2	0.199%	0.016%	12.4		0
N	225	60	16	T	3	0.298%	0.594%	0.50	0.594%	3
N	225	60	16	V	2	0.199%	0.034%	5.88	0.034%	2
P	225	60	16	H	11	1.092%	0.506%	2.16	0.506%	11
P	225	60	16	S	30	2.979%	2.543%	1.17	2.543%	30
P	225	60	16	T	17	1.688%	1.299%	1.30	1.299%	17
P	225	60	16	V	5	0.497%	0.643%	0.77	0.643%	5
N	225	70	16	T	1	0.099%	0.032%	3.07	0.032%	1
P	225	70	16	S	9	0.894%	0.684%	1.31	0.684%	9
P	225	70	16	T	1	0.099%	0.081%	1.22	0.081%	1
N	235	60	16	H	2	0.199%	0.168%	1.18	0.168%	2
P	235	60	16	T	2	0.199%	0.109%	1.83	0.109%	2
N	235	65	16	T	6	0.596%	0.078%	7.67	0.078%	6
P	235	65	16	S	2	0.199%	0.006%	36.1		0
N	235	70	16	H	2	0.199%	0.018%	10.8		0
N	235	70	16	S	1	0.099%	0.100%	0.99	0.100%	1
P	235	70	16	S	17	1.688%	1.211%	1.39	1.211%	17
P	235	75	16	S	1	0.099%	0.237%	0.42	0.237%	1
N	245	50	16	W	1	0.099%	0.055%	1.80	0.055%	1
P	245	50	16	Z	1	0.099%	0.002%	41.1		0
N	245	70	16	H	1	0.099%	0.003%	34.5		0
N	245	70	16	S	1	0.099%	0.174%	0.57	0.174%	1
P	245	70	16	H	1	0.099%	0.015%	6.64	0.015%	1
P	245	70	16	S	10	0.993%	0.855%	1.16	0.855%	10
P	245	70	16	T	2	0.199%	0.086%	2.32	0.086%	2
N	245	75	16	S	2	0.199%	0.109%	1.82	0.109%	2
P	245	75	16	S	9	0.894%	0.694%	1.29	0.694%	9
P	245	75	16	T	1	0.099%	0.093%	1.07	0.093%	1
P	255	50	16	Z	1	0.099%	0.001%	75.5		0
N	255	65	16	H	4	0.397%	0.123%	3.24	0.123%	4
P	255	65	16	S	2	0.199%	0.180%	1.10	0.180%	2
N	255	70	16	S	1	0.099%	0.143%	0.70	0.143%	1
P	255	70	16	S	8	0.794%	1.616%	0.49	1.616%	8
N	265	70	16	S	1	0.099%	0.192%	0.52	0.192%	1
P	265	70	16	S	11	1.092%	1.645%	0.66	1.645%	11
P	265	70	16	T	1	0.099%	0.154%	0.65	0.154%	1
P	265	75	16	H	1	0.099%	0.007%	14.7		0
P	265	75	16	S	6	0.596%	0.621%	0.96	0.621%	6
P	275	70	16	H	2	0.199%	0.030%	6.66	0.030%	2
P	275	70	16	S	3	0.298%	0.050%	6.02	0.050%	3
N	205	40	17	W	1	0.099%	0.108%	0.92		0
N	205	40	17	Y	2	0.199%	0.005%	37.3	0.108%	1
P	205	50	17	V	1	0.099%	0.008%	11.8		0
N	215	45	17	W	1	0.099%	0.157%	0.63		0
N	215	50	17	V	1	0.099%	0.149%	0.67	0.157%	1
P	215	50	17	H	1	0.099%	0.050%	1.97	0.149%	1
P	215	50	17	V	7	0.695%	0.120%	5.81	0.050%	1
N	215	55	17	V	1	0.099%	0.078%	1.27	0.120%	7
N	215	55	17	W	3	0.298%	0.012%	25.6	0.078%	1
P	215	55	17	V	5	0.497%	0.191%	2.60		0
N	215	60	17	T	1	0.099%	0.022%	4.49	0.191%	5
N	225	45	17	H	1	0.099%	0.183%	0.54	0.022%	1
N	225	45	17	W	3	0.298%	0.248%	1.20	0.183%	1
N	225	45	17	Y	11	1.092%	0.116%	9.45	0.248%	3
N	225	50	17	V	5	0.497%	0.165%	3.01	0.116%	11
N	225	50	17	W	5	0.497%	0.065%	7.65	0.165%	5
P	225	50	17	V	6	0.596%	0.074%	8.02	0.065%	5
N	225	55	17	H	2	0.199%	0.073%	2.70	0.074%	6
N	225	55	17	T	1	0.099%	0.056%	1.79	0.073%	2
N	225	55	17	V	1	0.099%	0.045%	2.22	0.056%	1
P	225	55	17	H	3	0.298%	0.115%	2.59	0.045%	1
P	225	55	17	T	2	0.199%	0.152%	1.31	0.115%	3
P	225	55	17	V	2	0.199%	0.056%	3.52	0.152%	2
P	225	60	17	T	9	0.894%	0.202%	4.42	0.056%	2
P	225	60	17	V	1	0.099%	0.005%	19.9	0.202%	9
N	225	65	17	S	2	0.199%	0.047%	4.20		0
N	235	45	17	W	4	0.397%	0.151%	2.63	0.047%	2
N	235	45	17	Y	3	0.298%	0.069%	4.30	0.151%	4
P	235	45	17	W	5	0.497%	0.056%	8.91	0.069%	3
N	235	50	17	V	2	0.199%	0.027%	7.40	0.056%	5
P	235	50	17	V	5	0.497%	0.036%	13.9	0.027%	2
N	235	55	17	H	1	0.099%	0.093%	1.06		0
N	235	55	17	W	2	0.199%	0.005%	37.0	0.093%	1
P	235	55	17	H	2	0.199%	0.077%	2.59		0
P	235	55	17	V	1	0.099%	0.020%	4.99	0.077%	2
P	235	55	17	W	1	0.099%	0.099%	1.01	0.020%	1
P	235	60	17	H	1	0.099%	no data	--	0.099%	1
N	235	65	17	H	8	0.794%	0.148%	5.38		0
N	235	65	17	S	1	0.099%	0.044%	2.24	0.148%	8
P	235	65	17	H	4	0.397%	0.045%	8.92	0.044%	1
P	235	65	17	S	3	0.298%	0.161%	1.85	0.045%	4
P	235	65	17	T	6	0.596%	0.192%	3.10	0.161%	3

TABLE 1
Ratios (percentage of RRC tests/percentage of replacement sales)
for 308 specific combinations of tire size and speed rating
in the comprehensive RRC data set

P-metric or non-P	section width	aspect ratio	rim diameter	speed rating	number of RRC tests	percentage of total RRC tests	percentage of 2006 RMA replacement sales	ratio	percentage of 2006 RMA replacement sales for rows with ratios <10	number of RRC tests for cells with ratios <10
N	245	40	17	Y	4	0.397%	0.060%	6.67	0.192%	6
N	245	45	17	W	4	0.397%	0.180%	2.21	0.060%	4
N	245	45	17	Y	1	0.099%	0.043%	2.33	0.180%	4
P	245	45	17	W	1	0.099%	0.012%	8.28	0.043%	1
N	245	50	17	W	1	0.099%	0.003%	30.3	0.012%	1
N	245	60	17	T	1	0.099%	0.006%	16.4		0
N	245	65	17	H	1	0.099%	0.008%	13.0		0
N	245	65	17	S	1	0.099%	0.098%	1.01		0
P	245	65	17	H	2	0.199%	0.065%	3.07	0.098%	1
P	245	65	17	S	10	0.993%	0.554%	1.79	0.065%	2
P	245	70	17	S	4	0.397%	0.184%	2.16	0.554%	10
P	245	75	17	S	1	0.099%	0.009%	11.2	0.184%	4
N	255	45	17	W	2	0.199%	0.015%	13.5		0
P	255	45	17	V	1	0.099%	0.002%	40.6		0
P	255	45	17	W	1	0.099%	0.002%	49.7		0
P	255	60	17	S	2	0.199%	0.028%	7.01		0
P	255	65	17	H	2	0.199%	0.001%	196	0.028%	2
P	255	65	17	S	2	0.199%	0.075%	2.64		0
P	255	75	17	S	1	0.099%	0.008%	12.5	0.075%	2
P	265	65	17	S	4	0.397%	0.206%	1.93		0
N	265	70	17	S	2	0.199%	0.141%	1.41	0.206%	4
P	265	70	17	H	9	0.894%	0.095%	9.38	0.141%	2
P	265	70	17	R	1	0.099%	0.028%	3.55	0.095%	9
P	265	70	17	S	48	4.767%	1.457%	3.27	0.028%	1
P	265	70	17	T	5	0.497%	0.158%	3.14	1.457%	48
N	275	40	17	W	1	0.099%	0.064%	1.54	0.158%	5
N	275	55	17	V	1	0.099%	0.073%	1.37	0.064%	1
P	275	60	17	S	3	0.298%	0.066%	4.53	0.073%	1
P	285	70	17	T	1	0.099%	0.023%	4.25	0.066%	3
N	225	40	18	W	2	0.199%	0.176%	1.13	0.023%	1
N	225	40	18	Y	1	0.099%	0.055%	1.81	0.176%	2
N	225	45	18	W	3	0.298%	0.052%	5.75	0.055%	1
P	225	50	18	W	1	0.099%	0.001%	73.8	0.052%	3
P	225	55	18	T	1	0.099%	0.013%	7.59		0
P	225	60	18	H	1	0.099%	0.098%	1.01	0.013%	1
P	225	60	18	T	1	0.099%	0.021%	4.76	0.098%	1
P	225	60	18	V	1	0.099%	0.001%	67.3	0.021%	1
P	235	45	18	V	1	0.099%	0.015%	6.76		0
P	235	55	18	V	6	0.596%	0.144%	4.13	0.015%	1
P	235	60	18	V	3	0.298%	0.043%	6.92	0.144%	6
P	235	65	18	S	4	0.397%	0.019%	21.5	0.043%	3
N	245	40	18	W	2	0.199%	0.060%	3.31		0
N	245	40	18	Y	1	0.099%	0.051%	1.94	0.060%	2
N	245	45	18	W	3	0.298%	0.090%	3.30	0.051%	1
N	245	45	18	Y	2	0.199%	0.056%	3.54	0.090%	3
N	245	50	18	W	1	0.099%	0.003%	37.7	0.056%	2
P	245	50	18	V	1	0.099%	no data	--		0
N	255	40	18	Y	1	0.099%	0.020%	4.93		0
N	255	45	18	W	1	0.099%	0.015%	6.82	0.020%	1
P	255	45	18	Y	1	0.099%	0.000%	521	0.015%	1
N	255	55	18	H	4	0.397%	0.087%	4.55		0
N	255	55	18	W	1	0.099%	0.005%	18.6	0.087%	4
P	255	55	18	V	2	0.199%	0.006%	32.5		0
P	255	70	18	H	1	0.099%	0.000%	630		0
P	255	70	18	S	3	0.298%	0.022%	13.3		0
P	265	65	18	S	2	0.199%	0.003%	73.4		0
N	275	40	18	W	4	0.397%	0.017%	23.1		0
N	275	40	18	Y	2	0.199%	0.025%	7.84		0
P	275	65	18	H	1	0.099%	0.020%	5.00	0.025%	2
N	285	50	18	W	1	0.099%	0.002%	54.0	0.020%	1
P	285	55	18	V	1	0.099%	0.000%	672		0
N	285	60	18	W	2	0.199%	0.002%	105		0
N	235	35	19	Y	2	0.199%	0.023%	8.71	0.023%	2
N	245	45	19	Y	1	0.099%	0.020%	4.97	0.020%	1
N	255	35	19	Y	1	0.099%	0.010%	9.82	0.010%	1
N	255	50	19	V	1	0.099%	0.014%	7.22	0.014%	1
N	275	50	19	W	1	0.099%	0.000%	469		0
N	285	45	19	V	1	0.099%	0.011%	8.68	0.011%	1
N	225	30	20	W	1	0.099%	0.006%	17.1		0
N	245	35	20	W	2	0.199%	0.064%	3.11	0.064%	2
N	245	40	20	W	1	0.099%	0.006%	16.9		0
P	245	50	20	T	1	0.099%	no data	--		0
N	255	35	20	W	1	0.099%	0.051%	1.97	0.051%	1
P	255	55	20	H	1	0.099%	no data	--		0
N	275	30	20	W	2	0.199%	0.006%	32.3		0
P	275	55	20	H	1	0.099%	0.039%	2.57	0.039%	1
P	275	55	20	S	1	0.099%	0.186%	0.53	0.186%	1
P	275	55	20	T	1	0.099%	no data	--		0
P	275	60	20	T	1	0.099%	0.013%	7.52	0.013%	1
N	285	55	20	V	1	0.099%	0.001%	83.3		0
N	295	40	20	Y	1	0.099%	0.007%	14.6		0
N	305	50	20	V	1	0.099%	0.017%	5.85	0.017%	1
N	335	30	20	Y	1	0.099%	0.000%	336		0
N	265	35	22	W	1	0.099%	0.071%	1.40	0.071%	1
N	265	40	22	W	1	0.099%	0.003%	38.2		0
P	275	45	22	V	1	0.099%	0.009%	11.3		0
N	285	35	22	W	1	0.099%	0.018%	5.39	0.018%	1
P	285	45	22	H	1	0.099%	no data	--		0
N	295	45	22	W	1	0.099%	0.001%	150		0
N	305	40	22	V	1	0.099%	0.096%	1.03	0.096%	1
N	305	45	22	W	1	0.099%	0.006%	17.6		0
N	305	35	24	W	1	0.099%	0.009%	11.1		0
					1,007	100.00%	69.39%		68.93%	897

TABLE 2A: Statistics for the Two Comprehensive RRC Data Sets		
Statistic	Unweighted	Sales-Weighted
number of values	1,007	577
Mean	9.98	10.01
Median	9.78	9.89
Standard Deviation	1.34	1.27
Skewness	0.65	0.70
Kurtosis	4.86	5.69
Coefficient of Variation	0.13	0.13
Minimum	6.15	6.15
Maximum	17.90	17.90

TABLE 2B: Statistics for Probability Distributions Fit to the Data Sets		
Statistic	Unweighted	Sales-Weighted
Distribution	lognormal	lognormal
Mean	9.98	10.01
Median	9.89	9.89
Standard Deviation	1.33	1.27
Skewness	0.41	0.70
Kurtosis	3.28	5.69
Coefficient of Variation	0.13	0.13

TABLE 3**Confidence Intervals for CEC Tire Test Data**

Standard Deviation and Half-Width for 149 tire products in CEC data files

Group ID	Tire Size	Market	average RRC based on 5 replicates	standard deviation of RRC based on 5 replicates	half-width of 95% confidence interval based on 5 replicates
195-01	P195/65R15	REP	12.36	0.472	0.59
195-02	P195/65R15	OE	9.07	0.067	0.08
195-03	P195/65R15	REP	9.32	0.293	0.36
195-04	P195/65R15	OE	8.50	0.094	0.12
195-05	P195/65R15	OE	9.69	0.053	0.07
195-06	P195/65R15	REP	9.56	0.428	0.53
195-07	P195/65R15	OE	9.89	0.568	0.71
195-08	P195/65R15	REP	13.43	0.244	0.30
195-09	P195/65R15	REP	12.23	0.108	0.13
195-10	P195/65R15	REP	9.75	0.207	0.26
195-11	P195/65R15	REP	10.56	0.061	0.08
195-12	P195/65R15	REP	13.01	0.114	0.14
195-13	P195/65R15	REP	11.08	0.101	0.13
195-14	P195/65R15	REP	9.44	0.305	0.38
195-15	195/65R15	OE	8.74	0.032	0.04
195-16	P195/65R15	REP	11.80	0.084	0.10
195-17	195/65R15	REP	9.70	0.076	0.09
195-18	P195/65R15	REP	11.58	0.065	0.08
195-19	P195/65R15	REP	11.61	0.744	0.92
195-20	P195/65R15	REP	12.23	0.459	0.57
195-21	P195/65R15	REP	13.89	0.280	0.35
195-22	P195/65R15	REP	13.11	0.138	0.17
195-23	P195/65R15	REP	10.36	0.253	0.31
195-24	P195/65R15	REP	12.16	0.138	0.17
195-25	195/65R15	REP	10.69	0.461	0.57
195-26	195/65R15	REP	10.84	0.146	0.18
195-27	195/65R15	REP	10.42	0.111	0.14
195-28	P195/65R15	REP	10.32	0.122	0.15
195-29	195/65R15	REP	10.91	0.512	0.64
195-30	P195/65R15	REP	9.53	0.067	0.08
195-31	P195/65R15	REP	10.36	0.308	0.38
195-32	P195/65R15	REP	10.55	0.219	0.27
195-33	P195/65R15	REP	11.05	0.057	0.07
195-34	P195/65R15	REP	9.51	0.254	0.32
195-35	P195/65R15	REP	10.98	0.211	0.26
195-36	195/65R15	REP	10.88	0.190	0.24
195-37	P195/65R15	REP	11.56	0.700	0.87
195-38	P195/65R15	REP	10.98	0.023	0.03
195-39	P195/65R15	REP	11.76	0.255	0.32
195-41	195/65R15	REP	9.60	0.264	0.33
195-42	P195/65R15	REP	11.30	0.252	0.31
195-43	P195/65R15	REP	10.10	0.871	1.08
195-44	P195/65R15	REP	10.97	0.082	0.10
195-45	P195/65R15	REP	9.75	0.187	0.23
195-46	195/65R15	REP	10.80	0.075	0.09
195-47	195/65R15	REP	11.69	0.079	0.10
195-48	P195/65R15	REP	11.03	0.102	0.13
195-49	P195/65R15	REP	11.34	0.185	0.23
195-50	195/65R15	REP	10.11	0.148	0.18
195-51	195/65R15	REP	9.53	0.252	0.31
195-52	195/65R15	OE	8.83	0.233	0.29
195-53	P195/65R15	OE	8.83	0.131	0.16
195-54	P195/65R15	OE	9.92	0.181	0.22
195-55	P195/65R15	OE	10.60	0.195	0.24
195-56	P195/65R15	REP	10.81	0.208	0.26
195-57	P195/65R15	REP	11.16	0.535	0.66
195-58	P195/65R15	REP	10.08	0.045	0.06
195-59	195/65R15	REP	11.55	0.203	0.25
195-60	P195/65R15	OE	9.47	0.043	0.05
195-61	P195/65R15	OE	10.96	0.137	0.17
195-62	P195/65R15	REP	9.81	0.129	0.16
195-63	195/65R15	REP	12.51	0.133	0.17
195-64	P195/65R15	REP	10.91	0.260	0.32
195-65	195/65R15	OE	8.19	0.050	0.06
195-66	P195/65R15	REP	11.81	0.054	0.07
195-67	195/65R15	REP	10.32	0.250	0.31
195-68	P195/65R15	REP	9.70	0.153	0.19
195-69	195/65R15	REP	10.42	0.052	0.06
195-70	195/65R15	REP	10.50	0.170	0.21
195-71	P195/65R15	REP	10.07	0.069	0.09
195-72	P195/65R15	REP	10.59	0.086	0.11
195-73	P195/65R15	REP	11.13	0.144	0.18
195-74	P195/65R15	REP	10.57	0.037	0.05
195-75	P195/65R15	REP	10.12	0.170	0.21
195-76	195/65R15	REP	10.70	0.032	0.04
195-77	195/65R15	OE	9.21	0.125	0.15
265-01	P265/70R17	OE	8.43	0.110	0.14
265-03	P265/70R17	OE	9.18	0.087	0.11

TABLE 3**Confidence Intervals for CEC Tire Test Data**

Standard Deviation and Half-Width for 149 tire products in CEC data files

Group ID	Tire Size	Market	average RRC based on 5 replicates	standard deviation of RRC based on 5 replicates	half-width of 95% confidence interval based on 5 replicates
265-04	P265/70R17	REP	11.22	0.287	0.36
265-05	P265/70R17	REP	10.86	0.176	0.22
265-06	P265/70R17	OE	7.69	0.120	0.15
265-07	P265/70R17	REP	9.57	0.063	0.08
265-08	P265/70R17	REP	9.46	0.129	0.16
265-09	P265/70R17	OE	9.09	0.106	0.13
265-10	P265/70R17	OE	9.06	0.127	0.16
265-11	P265/70R17	OE	7.70	0.175	0.22
265-12	P265/70R17	REP	11.17	0.061	0.08
265-13	P265/70R17	OE	10.63	0.349	0.43
265-14	P265/70R17	REP	12.39	0.174	0.22
265-15	P265/70R17	OE	8.58	0.121	0.15
265-16	P265/70R17	REP	9.26	0.143	0.18
265-17	P265/70R17	OE	7.94	0.090	0.11
265-18	P265/70R17	REP	10.63	0.159	0.20
265-19	P265/70R17	REP	9.25	0.113	0.14
265-20	P265/70R17	REP	9.65	0.128	0.16
265-22	P265/70R17	REP	12.63	0.249	0.31
265-23	P265/70R17	REP	10.28	0.095	0.12
265-24	P265/70R17	REP	11.08	0.292	0.36
265-25	P265/70R17	REP	10.22	0.060	0.07
265-26	P265/70R17	OE	7.70	0.100	0.12
265-27	P265/70R17	OE	9.62	0.117	0.14
265-28	P265/70R17	OE	10.01	1.041	1.29
265-29	P265/70R17	REP	10.88	0.137	0.17
265-30	P265/70R17	REP	9.25	0.069	0.09
265-31	P265/70R17	REP	11.13	0.146	0.18
265-32	P265/70R17	REP	10.77	0.200	0.25
265-33	P265/70R17	REP	10.43	0.166	0.21
265-34	P265/70R17	REP	9.67	0.162	0.20
265-35	P265/70R17	REP	10.91	0.453	0.56
265-36	P265/70R17	REP	10.75	0.132	0.16
265-37	P265/70R17	REP	8.52	0.170	0.21
265-38	P265/70R17	REP	9.37	0.265	0.33
265-40	P265/70R17	REP	9.64	0.064	0.08
265-41	P265/70R17	REP	9.54	0.136	0.17
265-42	P265/70R17	REP	10.53	0.149	0.18
265-43	265/70R17	REP	10.00	0.187	0.23
265-44	265/70R17	REP	9.96	0.045	0.06
265-45	P265/70R17	REP	10.23	0.279	0.35
265-46	P265/70R17	REP	11.33	0.084	0.10
265-47	P265/70R17	REP	9.54	0.153	0.19
265-48	P265/70R17	REP	10.34	0.278	0.34
SIS-01	P215/60R16	REP	10.30	0.117	0.15
SIS-02	P215/65R15	REP	10.19	0.320	0.40
SIS-03	205/70R14	REP	10.79	0.293	0.36
SIS-04	P175/80R13	REP	10.49	0.081	0.10
SIS-05	P175/70R14	REP	12.28	0.123	0.15
SIS-06	P185/80R13	REP	11.53	0.156	0.19
SIS-07	P215/75R15	REP	10.28	0.304	0.38
SIS-08	P215/70R14	REP	10.63	0.100	0.12
SIS-09	P225/75R15	REP	10.76	0.147	0.18
SIS-10	185/65R14	REP	12.06	0.488	0.61
SIS-11	P155/80R13	REP	12.47	0.133	0.17
SIS-12	185/70R14	REP	11.58	0.660	0.82
SIS-13	P185/75R14	REP	11.06	0.225	0.28
SIS-14	195/70R14	REP	11.75	0.396	0.49
SIS-15	P195/75R14	REP	10.42	0.161	0.20
SIS-16	P205/70R15	REP	10.11	0.065	0.08
SIS-17	175/65R14	REP	12.15	0.399	0.50
SIS-18	P175/70R13	REP	11.48	0.233	0.29
SIS-19	185/70R13	REP	12.46	0.416	0.52
SIS-20	P235/75R15	REP	10.25	0.270	0.34
SIS-21	P195/65R15	REP	11.35	0.096	0.12
SIS-22	P205/65R15	REP	10.75	0.232	0.29
SIS-23	P225/60R16	REP	10.17	0.191	0.24
SIS-24	P165/80R13	REP	12.87	0.045	0.06
SIS-25	P215/75R14	REP	11.37	0.741	0.92
SIS-26	P205/75R15	REP	10.20	0.280	0.35
SIS-27	P215/70R15	REP	9.87	0.466	0.58
SIS-28	P205/75R14	REP	11.07	0.198	0.25

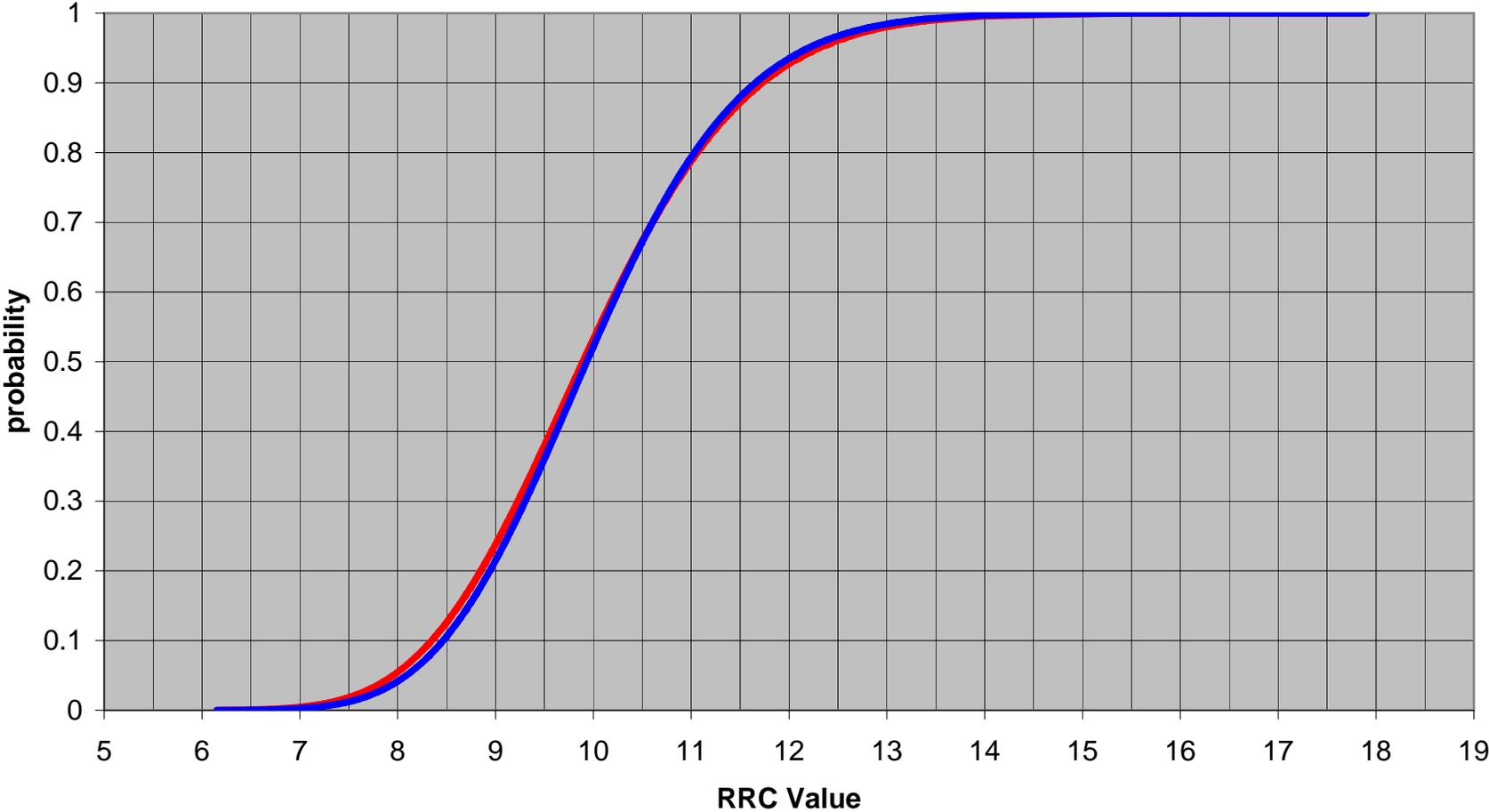
FIGURES

FIGURE 1
Coverage Chart
 Percentages of Total 2006 RMA Replacement Market Tire Shipments
 Represented by RRC Test Data (1,007 tests)
 by Size and Speed Rating (SR) Groups

no data
 RRC and sales data
 sales data only

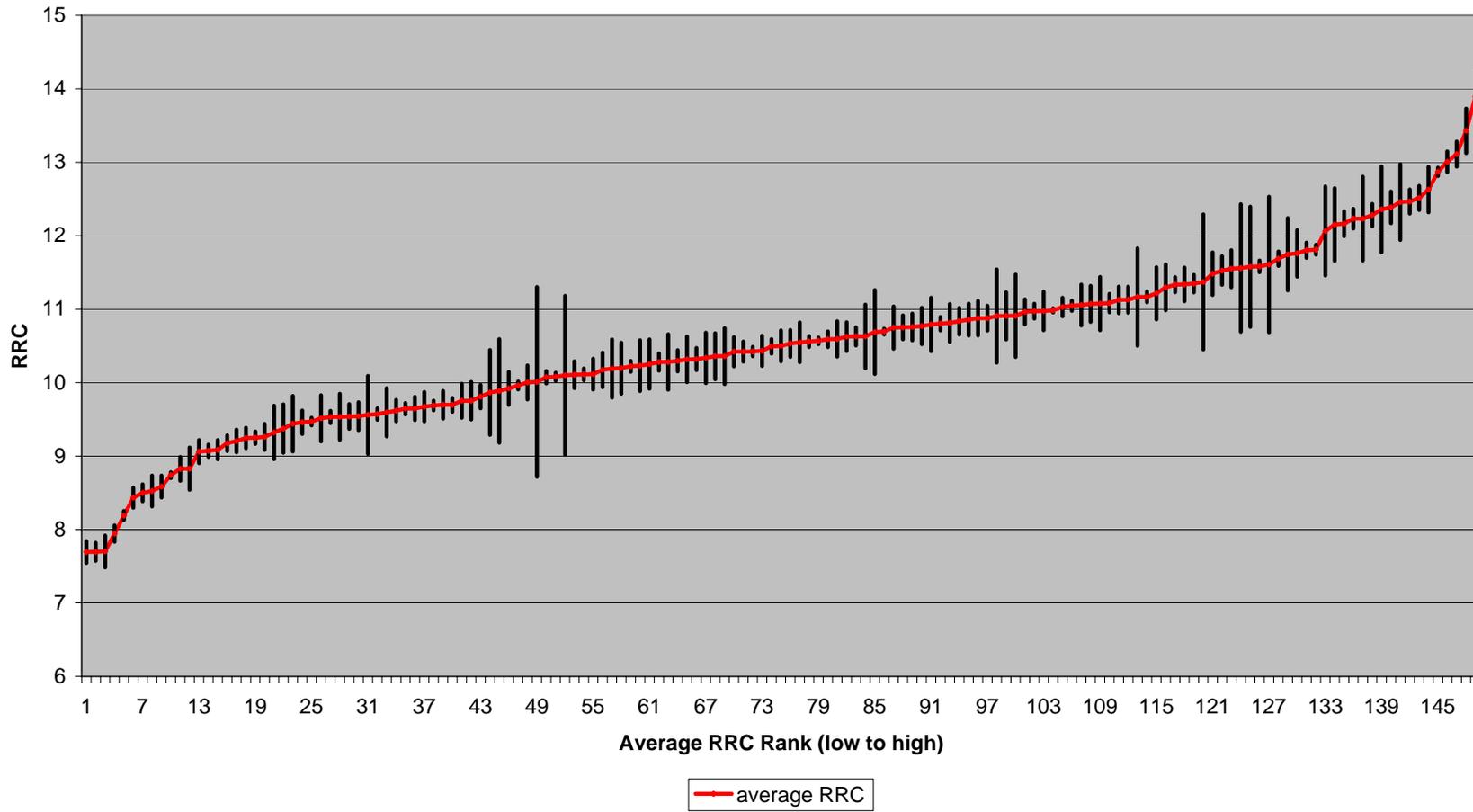
RRC Tests and Sales				Dimensions for Size Group			Percentage of Total RMA 2006 Replacement Tire Shipments				Coverage Percentages		
size group number	total RRC tests for size	total 2006 RMA replacement tire shipments for size group	Rim Diameter	Section Width	Aspect Ratio	other rated tires	H-rated tires	V-rated tires	ZR-rated tires	total % of sales for all SR groups	total % of sales for tested SR groups	total % of sales for untested SR groups	
1	2	756,149	13	155	80	0.43%				0.43%	0.43%	0.00%	
2	1	127,356	13	165	80	0.07%				0.07%	0.07%	0.00%	
3	10	2,140,228	13	175	70	1.22%	0.00%			1.22%	1.22%	0.00%	
4	1	113,341	13	175	80	0.06%				0.06%	0.06%	0.00%	
5	1	447,476	13	185	70	0.25%	0.00%			0.26%	0.25%	0.00%	
6	1	156,000	13	185	80	0.09%				0.09%	0.09%	0.00%	
7	3	2,056,841	14	175	65	1.09%	0.08%			1.17%	1.09%	0.08%	
8	1	514,571	14	175	70	0.29%	0.00%			0.29%	0.29%	0.00%	
9	7	756,442	14	185	60	0.10%	0.33%			0.43%	0.43%	0.00%	
10	20	4,917,243	14	185	65	2.60%	0.21%			2.81%	2.81%	0.00%	
11	17	3,059,611	14	185	70	1.74%	0.00%			1.75%	1.74%	0.00%	
12	1	1,361,813	14	185	75	0.78%				0.78%	0.78%	0.00%	
13	1	1,000,487	14	195	60	0.13%	0.44%	0.00%		0.57%	0.44%	0.13%	
14	9	4,153,619	14	195	70	2.33%	0.04%			2.37%	2.33%	0.04%	
15	1	1,628,379	14	195	75	0.93%				0.93%	0.93%	0.00%	
16	2	755,181	14	205	70	0.43%	0.00%			0.43%	0.43%	0.00%	
17	4	2,026,442	14	205	75	1.16%				1.16%	1.16%	0.00%	
18	1	963,139	14	215	70	0.55%	0.00%			0.55%	0.55%	0.00%	
19	1	253,276	14	215	75	0.14%				0.14%	0.14%	0.00%	
20	1	619,840	15	185	60	0.35%				0.35%	0.35%	0.00%	
21	5	1,748,606	15	185	65	0.65%	0.35%			1.00%	0.65%	0.35%	
22	2	236,751	15	195	50	0.02%	0.07%	0.03%	0.01%	0.14%	0.04%	0.10%	
23	5	416,494	15	195	55	0.01%	0.04%	0.18%	0.02%	0.24%	0.20%	0.04%	
24	17	4,976,148	15	195	60	0.99%	1.81%	0.04%		2.84%	2.84%	0.00%	
25	102	6,004,821	15	195	65	2.08%	1.32%	0.03%	0.00%	3.43%	3.43%	0.00%	
26	1	239,356	15	205	50	0.02%	0.05%	0.03%	0.03%	0.14%	0.03%	0.11%	
27	13	2,816,066	15	205	60	0.53%	1.05%	0.03%		1.61%	1.61%	0.00%	
28	46	8,170,392	15	205	65	3.27%	1.25%	0.14%	0.00%	4.67%	4.67%	0.00%	
29	15	5,649,876	15	205	70	3.21%	0.01%	0.00%	0.00%	3.23%	3.21%	0.01%	
30	6	2,621,557	15	205	75	1.50%				1.50%	1.50%	0.00%	
31	6	1,830,028	15	215	65	0.89%	0.15%	0.00%		1.04%	0.90%	0.15%	
32	20	6,775,304	15	215	70	3.85%	0.02%	0.00%	0.00%	3.87%	3.85%	0.02%	
33	6	2,179,469	15	215	75	1.24%				1.24%	1.24%	0.00%	
34	1	241,522	15	225	60	0.04%	0.08%	0.02%	0.00%	0.14%	0.08%	0.05%	
35	2	1,846,564	15	225	75	1.05%				1.05%	1.05%	0.00%	
36	2	1,627,116	15	235	70	0.93%	0.00%	0.00%		0.93%	0.93%	0.00%	
37	27	9,088,678	15	235	75	5.19%				5.19%	5.19%	0.00%	
38	1	14,158	15	245	70	0.01%				0.01%	0.01%	0.00%	
39	1	932,725	15	255	70	0.53%	0.00%			0.53%	0.53%	0.00%	
40	1	314,143	15	265	70	0.17%	0.01%			0.18%	0.01%	0.17%	
41	1	644,176	15	275	60	0.37%	0.00%	0.00%	0.00%	0.37%	0.00%	0.37%	
42	1	120,449	16	205	45	0.00%	0.01%	0.01%	0.04%	0.07%	0.04%	0.02%	
43	1	646,413	16	205	50	0.01%	0.16%	0.09%	0.11%	0.37%	0.16%	0.21%	
44	44	4,783,494	16	205	55	0.83%	1.48%	0.30%	0.12%	2.73%	2.73%	0.00%	
45	14	2,704,702	16	205	60	0.31%	0.92%	0.31%	0.00%	1.54%	1.23%	0.32%	
46	1	453,118	16	205	65	0.22%	0.04%	0.00%		0.26%	0.22%	0.04%	
47	1	5,558	16	215	45			0.00%	0.00%	0.00%	0.00%	0.00%	
48	7	1,440,986	16	215	55	0.06%	0.64%	0.09%	0.03%	0.82%	0.79%	0.03%	
49	22	4,613,308	16	215	60	1.95%	0.40%	0.28%	0.00%	2.63%	2.63%	0.00%	
50	13	2,682,796	16	215	65	1.43%	0.08%	0.03%		1.53%	1.51%	0.03%	
51	5	1,241,421	16	215	70	0.68%	0.02%			0.71%	0.68%	0.02%	
52	2	977,546	16	225	50	0.02%	0.24%	0.15%	0.15%	0.56%	0.38%	0.17%	
53	8	1,279,640	16	225	55	0.02%	0.47%	0.13%	0.10%	0.73%	0.71%	0.02%	
54	70	11,455,279	16	225	60	4.83%	1.00%	0.68%	0.03%	6.54%	6.51%	0.03%	
55	11	1,566,431	16	225	70	0.88%	0.01%			0.89%	0.88%	0.01%	
56	4	864,880	16	235	60	0.22%	0.26%	0.01%	0.00%	0.49%	0.48%	0.01%	
57	8	312,551	16	235	65	0.18%		0.00%		0.18%	0.18%	0.00%	
58	20	3,073,448	16	235	70	1.73%	0.02%			1.75%	1.75%	0.00%	
59	1	482,907	16	235	75	0.27%	0.00%			0.28%	0.27%	0.00%	
60	2	282,890	16	245	50	0.01%	0.07%	0.02%	0.07%	0.16%	0.07%	0.10%	
61	15	1,997,101	16	245	70	1.12%	0.02%	0.00%		1.14%	1.14%	0.00%	
62	12	1,585,179	16	245	75	0.91%				0.91%	0.91%	0.00%	
63	1	34,125	16	255	50	0.00%		0.00%	0.01%	0.02%	0.01%	0.00%	
64	6	615,780	16	255	65	0.23%	0.12%			0.35%	0.35%	0.00%	
65	9	3,313,087	16	255	70	1.89%	0.00%			1.89%	1.89%	0.00%	
66	13	3,705,047	16	265	70	2.10%	0.01%	0.00%		2.12%	2.10%	0.01%	
67	7	1,624,365	16	265	75	0.92%	0.01%			0.93%	0.93%	0.00%	
68	5	166,003	16	275	70	0.06%	0.03%			0.09%	0.09%	0.00%	
69	3	418,180	17	205	40		0.11%	0.01%	0.12%	0.24%	0.12%	0.12%	
70	1	349,648	17	205	50	0.00%	0.02%	0.07%	0.11%	0.20%	0.07%	0.13%	
71	1	579,627	17	215	45	0.00%	0.11%	0.02%	0.20%	0.33%	0.20%	0.13%	
72	9	898,050	17	215	50	0.01%	0.16%	0.27%	0.07%	0.51%	0.43%	0.08%	
73	9	594,123	17	215	55	0.01%	0.05%	0.27%	0.01%	0.34%	0.28%	0.06%	
74	1	277,736	17	215	60	0.05%	0.11%	0.00%		0.16%	0.05%	0.11%	
75	15	1,154,082	17	225	45	0.01%	0.19%	0.03%	0.44%	0.66%	0.62%	0.03%	
76	16	590,942	17	225	50	0.00%	0.02%	0.24%	0.07%	0.34%	0.31%	0.02%	
77	11	918,096	17	225	55	0.22%	0.19%	0.10%	0.02%	0.52%	0.51%	0.02%	
78	10	632,714	17	225	60	0.34%	0.01%	0.01%		0.36%	0.35%	0.01%	
79	2	108,921	17	225	65	0.05%	0.01%			0.06%	0.05%	0.01%	
80	12	873,107	17	235	45	0.00%	0.11%	0.06%	0.32%	0.50%	0.32%	0.18%	
81	7	245,631	17	235	50	0.02%	0.01%	0.06%	0.05%	0.14%	0.06%	0.08%	
82	7	608,303	17	235	55	0.04%	0.17%	0.03%	0.10%	0.35%	0.31%	0.04%	
83	1	129,222	17	235	60	0.07%	0.00%			0.07%	0.00%	0.07%	
84	22	1,125,939	17	235	65	0.43%	0.19%	0.02%	0.00%	0.64%	0.62%	0.02%	
85	4	251,493	17	245	40	0.00%	0.00%	0.00%	0.14%	0.14%	0.14%	0.00%	
86	6	700,033	17	245	45	0.00%	0.11%	0.01%	0.27%	0.40%	0.27%	0.13%	
87	1	22,552	17	245	50	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	
88	1	10,575	17	245	60	0.01%				0.01%	0.01%	0.00%	
89	14	1,446,735	17	245	65	0.75%	0.07%			0.83%	0.83%	0.00%	
90	4	498,793	17	245	70	0.28%	0.00%			0.28%	0.28%	0.00%	
91	1	16,189	17	245	75	0.01%				0.01%	0.01%	0.00%	
92	4	56,895	17	255	45		0.00%	0.00%	0.02%	0.03%	0.03%	0.00%	
93	2	252,941	17	255	60	0.03%	0.08%	0.03%	0.00%	0.14%	0.03%	0.11%	
94	4	152,655	17	255	65	0.09%	0.00%			0.09%	0.09%	0.00%	
95	1	28,239	17	255	75	0.02%				0.02%	0.02%	0.00%	
96	4	682,049	17	265	65	0.39%	0.00%			0.39%	0.39%	0.00%	
97	65	3,589,569	17	265	70	1.95%	0.10%			2.05%	2.05%	0.00%	
98	1	182,315	17	275	40	0.00%	0.00%	0.00%	0.09%	0.10%	0.09%	0.01%	
99	1	186,005	17	275	55	0.03%	0.07%	0.00%		0.11%	0.07%	0.03%	
100	3	361,329	17	275	60	0.18%	0.02%	0.01%		0.21%	0.18%	0.03%	
101	1	59,553	17	285	70	0.03%				0.03%	0.03%	0.00%	
102	3	584,815	18	225	40		0.06%	0.01%	0.26%	0.33%	0.26%	0.07%	
103	3	170,053	18	225	45		0.00%	0.01%	0.09%	0.10%	0.09%	0.01%	
104	1	11,726	18	225	50	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.01%	
105	1	28,343	18	225	55	0.02%	0.00%			0.02%	0.02%	0.00%	
106	3	234,408	18	225	60	0.02%	0.11%	0.01%	0.00%	0.13%	0.13%	0.00%	
107	1	43,078	18	235	45		0.00%	0.02%	0.01%	0.02%	0.02%	0.01%	
108	6	347,996	18	235	55	0.03%	0.00%	0.17%	0.00%	0.20%	0.17%	0.03%	
109	3	115,523	18	235	60	0.00%	0.01%	0.05%	0.00%	0.07%	0.05%	0.02%	
110	4												

FIGURE 2
Comparison of RRC Distribution Curves



— unweighted RRC data — sales-weighted RRC data

FIGURE 3
Confidence Intervals for Mean RRC Values



APPENDIX

sort#	Prefix or Tire Type	section width	aspect ratio	rim diam	Load Index	Speed Rating	Treadwear	Traction	Temp	Tread Depth	Market	average weight	average OD	avg RRC	Source	Group or other ID number	manufacturer	brand	model	Tire Size	Part number	serial number
1	P	195	65	15	89	S	380	B	B	9.5	OE	19.84	25.07	8.50	CEC-A	195-04	BF	Bridgestone	Insignia SE200	P195/65R15		9BC6E202705
2	P	195	65	15	89	S	440	A	B	10.0	OE	20.32	24.97	9.69	CEC-A	195-05	BF	Firestone	FR690	P195/65R15		W2C6T001303
3	P	195	65	15	89	S	460	A	B	10.0	OE	18.16	25.00	8.83	CEC-A	195-53	GY	Goodyear	Integrity	P195/65R15		M6C6B3OR1106
4	P	195	65	15	89	S	520	A	B	10.0	OE	19.48	25.08	10.60	CEC-A	195-55	CONT	Continental	Touring Contact AS	P195/65R15		ACC63J21206
5	P	195	65	15	89	T	360	A	B	9.0	OE	18.12	24.95	9.89	CEC-A	195-07	GY	Goodyear	Eagle LS	P195/65R15		M6C6BM1R4405
6	P	195	65	15	89	H	300	A	A	9.2	OE	20.71	24.87	9.07	CEC-A	195-02	BF	Bridgestone	Turanza EL41	P195/65R15		OBC6PVO2305
7	N	195	65	15	91	H	360	A	A	10.0	OE	17.11	25.08	8.83	CEC-A	195-52	CONT	Continental	Conti Touring Contact CH95	195/65R15		CNPPXBU3705
8	P	195	65	15	89	H	300	A	A	10.0	OE	21.43	24.88	9.92	CEC-A	195-54	BF	Bridgestone	Turanza EL41	P195/65R15		OBC6PVY3603
9	P	195	65	15	89	H	400	A	A	9.5	OE	20.74	26.04	9.47	CEC-A	195-60	MI	Michelin	Energy MXV4 Plus	P195/65R15		APC6CP3X1406
10	P	195	65	15	89	H	300	A	A	10.0	OE	19.74	24.88	10.96	CEC-A	195-61	TOYO	Toyo	Proxes A-18 PXA18	P195/65R15		N39N98C4505
11	N	195	65	15	91	H	400	A	A	9.0	OE	19.26	24.92	8.19	CEC-A	195-65	MI	Michelin	Energy MXV4 Plus	195/65R15		HDTACXYX0106
12	N	195	65	15	91	H	440	A	A	10.0	OE	20.40	25.17	9.21	CEC-A	195-77	MI	Michelin	Energy MXV4 S8	195/65R15		HNTAE53X1306
13	N	195	65	15	91	V	440	A	A	9.5	OE	19.20	24.98	8.74	CEC-A	195-15	MI	Michelin	Energy MXV4 S8	195/65R15		HDTAE56X4703
14	P	265	70	17	113	R	360	A	B	12.0	OE	37.07	31.86	7.94	CEC-B	265-17	GY	Goodyear	Wrangler SR-A	P265/70R17		4BT6DYWR4805
15	P	265	70	17	113	S	360	B	B	14.0	OE	40.93	31.96	8.43	CEC-B	265-01	BF	Bridgestone	Dueler AT 693II	P265/70R17		7XT6D134705
16	P	265	70	17	113	S	340	A	B	12.0	OE	39.68	31.63	9.18	CEC-B	265-03	GY	Goodyear	Wrangler HP	P265/70R17		4BT6FOOR4305
17	P	265	70	17	113	S	520	A	B	11.0	OE	40.51	31.62	7.69	CEC-B	265-06	CONT	Continental	Contitrac SUV	P265/70R17		A3T645PW3905
18	P	265	70	17	113	S	420	A	B	12.0	OE	40.90	31.78	9.09	CEC-B	265-09	MI	Michelin	Cross-Terrain SUV	P265/70R17		B7KPL2HX5005
19	P	265	70	17	113	S	520	A	B	14.0	OE	41.57	31.89	7.70	CEC-B	265-11	CONT	Continental	Contitrac TR	P265/70R17		A3T645RW2805
20	P	265	70	17	113	S	340	A	B	13.0	OE	39.33	31.87	10.63	CEC-B	265-13	GY	Goodyear	Wrangler RT/S	P265/70R17		MKT6C6HR3505
21	P	265	70	17	113	S	340	B	B	11.0	OE	38.87	31.85	8.58	CEC-B	265-15	GY	Goodyear	Wrangler ST	P265/70R17		4BT6EKDR4905
22	P	265	70	17	113	S	360	B	B	13.0	OE	39.89	31.69	7.70	CEC-B	265-26	BF	Bridgestone	Dueler H/T 684 II	P265/70R17		7XT66564905
23	P	265	70	17	113	H	400	A	A	11.0	OE	41.71	31.62	9.06	CEC-B	265-10	MI	Michelin	Pilot LTX	P265/70R17		B7KPPPFX2205
24	P	265	70	17	113	H	520	A	A	12.0	OE	42.35	31.67	9.62	CEC-B	265-27	CONT	Continental	Contitrac TR	P265/70R17		A3T6455B4005
25	P	265	70	17	113	H	500	A	A	12.0	OE	43.04	31.78	10.01	CEC-B	265-28	CONT	General	Ameritrac TR	P265/70R17		A3T6BLF0605
26	P	155	80	13	79	S	400	A	B	9.5	REP	13.15	22.85	12.47	CEC-C	SIS-11	BF	Firestone	FR380	P155/80R13		WBE438A0306
27	P	165	80	13	83	S	400	A	B	9.0	REP	14.21	23.51	12.87	CEC-C	SIS-24	BF	Firestone	FR380	P165/80R13		WBXY38A1705
28	N	175	65	14	82	S	400	A	B	10.0	REP	15.37	23.14	12.15	CEC-C	SIS-17	BF	Firestone	FR380	175/65R14		HYEX38B0606
29	P	175	70	13	82	S	400	A	B	10.0	REP	14.93	22.70	11.48	CEC-C	SIS-18	BF	Firestone	FR380	P175/70R13		WBEV38B4705
30	P	175	70	14	84	S	400	A	B	10.0	REP	16.03	23.46	12.28	CEC-C	SIS-05	BF	Firestone	FR380	P175/70R14		HYEP38B0906
31	P	175	80	13	86	S	400	A	B	10.0	REP	14.89	24.03	10.49	CEC-C	SIS-04	BF	Firestone	FR380	P175/80R13		HYJU38B4205
32	N	185	65	14	86	S	400	A	B	10.0	REP	16.36	23.43	12.06	CEC-C	SIS-10	BF	Firestone	FR380	185/65R14		E26L38B0206
33	N	185	70	13	86	S	400	A	B	10.0	REP	15.85	23.32	12.46	CEC-C	SIS-19	BF	Firestone	FR380	185/70R13		W5FM38B2605
34	N	185	70	14	88	S	400	A	B	10.0	REP	16.60	24.21	11.58	CEC-C	SIS-12	BF	Firestone	FR380	185/70R14		W5J638B4605
35	P	185	75	14	89	S	400	A	B	10.0	REP	17.24	25.04	11.06	CEC-C	SIS-13	BF	Firestone	FR380	P185/75R14		MOJ738A5105
36	P	185	80	13	90	S	400	A	B	10.0	REP	16.24	24.74	11.53	CEC-C	SIS-06	BF	Firestone	FR380	P185/80R13		WBJK38A4905
37	P	195	65	15	89	S	520	A	B	10.0	REP	19.79	25.10	9.56	CEC-A	195-06	CONT	General	Ameri * G4S	P195/65R15		ACC62V60405
38	P	195	65	15	89	S	600	A	B	10.0	REP	19.73	25.32	9.75	CEC-A	195-10	MI	Michelin	Symmetry	P195/65R15		B3TADLBX2905
39	P	195	65	15	89	S	740	A	B	11.0	REP	20.58	24.68	10.56	CEC-A	195-11	MI	Michelin	Harmony	P195/65R15		HDTALMNX4005
40	P	195	65	15	89	S	500	A	B	11.0	REP	19.84	25.07	13.89	CEC-A	195-21	GY	Dunlop	SP40 A/S	P195/65R15		PDC6A65R4805
41	P	195	65	15	89	S	620	A	B	9.0	REP	18.79	25.00	11.05	CEC-A	195-33	GY	Kelly Springfield	Navigator Gold	P195/65R15		PJC617KR0406
42	P	195	65	15	89	S	340	B	B	9.0	REP	18.54	25.00	9.51	CEC-A	195-34	HANKOOK	Hankook	Aurora Radial H710	P195/65R15		T7DYHZA4205
43	P	195	65	15	89	S	620	A	B	10.0	REP	18.53	24.93	11.30	CEC-A	195-42	GY	Lee	Steel Trak	P195/65R15		PJC62R1R4305
44	P	195	65	15	89	S	440	A	B	10.0	REP	19.06	24.84	10.97	CEC-A	195-44	COOPER	National	XT4000	P195/65R15		UTC6WDF0106
45	P	195	65	15	89	S	440	A	B	10.0	REP	18.89	24.78	11.03	CEC-A	195-48	COOPER	Delta	Majestic AS	P195/65R15		U9C6WD93905
46	P	195	65	15	89	S	440	A	B	10.0	REP	19.31	25.07	10.81	CEC-A	195-56	COOPER	Starfire	Flite-Line IV	P195/65R15		UTC6B5D0806
47	P	195	65	15	89	S	520	A	B	10.0	REP	18.60	25.00	9.81	CEC-A	195-62	MI	Uniroyal	Tiger Paw AS6000	P195/65R15		BHC6BL4U1106
48	P	195	65	15	89	S	420	A	B	10.0	REP	17.00	24.98	10.91	CEC-A	195-64	GY	Republic	Ensign All Climate Radial	P195/65R15		PLC6H9LR0906
49	P	195	65	15	89	S	480	A	B	10.0	REP	18.82	24.97	9.70	CEC-A	195-68	MI	BFGoodrich	Cientra Plus	P195/65R15		BHC6BL7J5005
50	P	195	65	15	89	S	440	A	B	10.0	REP	19.07	24.81	10.57	CEC-A	195-74	COOPER	Roadmaster	Caravelle AS	P195/65R15		U9C6FJ21806
51	P	195	65	15	89	S	620	A	B	10.0	REP	18.95	24.90	10.12	CEC-A	195-75	HANKOOK	Hankook	Mileage Plus II	P195/65R15		T7DYDFH0905
52	P	195	65	15	89	S	400	A	B	11.0	REP	19.97	25.16	11.35	CEC-C	SIS-21	BF	Firestone	FR380	P195/65R15		HYC638B0806
53	P	195	65	15	89	T	700	A	B	12.0	REP	24.35	25.27	12.36	CEC-A	195-01	BF	Bridgestone	Turanza LST	P195/65R15		Y7C6LT14804
54	P	195	65	15	89	T	300	A	A	9.5	REP	20.27	25.04	9.32	CEC-A	195-03	BF	Bridgestone	Turanza EL41	P195/65R15		Y79NPVM0803
55	P	195	65	15	89	T	420	A	A	9.5	REP	19.68	25.07	12.23	CEC-A	195-09	PIR	Pirelli	P400 Touring	P195/65R15		XMUU76602405
56	P	195	65	15	89	T	800	A	B	11.0	REP	21.50	24.76	11.08	CEC-A	195-13	MI	Michelin	Hydroedge	P195/65R15		B9TAM8JX4505
57	N	195	65	15	91	T	400	A	B	9.5	REP	18.53	24.86	9.70	CEC-A	195-17	KUMHO	Kumho	Powerstar 758	195/65R15		Y09PYAD3505
58	P	195	65	15	89	T	700	A	B	11.0	REP	21.25	25.01	11.58	CEC-A	195-18	YOKO	Yokohama	Avid TRZ	P195/65R15		CC9N8XP4705
59	P	195	65	15	89	T	400	A	B	10.0	REP	19.25	24.97	11.61	CEC-A	195-19	KUMHO	Kumho	732 Touring Plus	P195/65R15		4TUJYP014005
60	P	195	65	15	89	T	700	A	B	10.0	REP	19.18	24.92	12.23	CEC-A	195-20	GY	Goodyear	Assurance Comfort Tred	P195/65R15		M6C618HR0106
61	P	195	65	15	89	T	640	A	B	10.0	REP	20.39	24.98	10.36	CEC-A	195-23	GY	Dunlop	D65T Touring	P195/65R15		DBC6C36R4003
62	N	195	65	15	91	T	620	A	B	10.0	REP	20.31	25.01	10.42	CEC-A	195-27	COOPER	Mastercraft	Sensys 01	195/65R15		U9AEFMX4705
63	P	195	65	15	89	T	420	A	B	10.0	REP	19.39	25.00	10.32	CEC-A	195-28	YOKO	Yokohama	Avid T4	P195/65R15		CC9N8PX0306
64	N	195	65	15	91	T	360	A	B	10.0	REP	20.53	25.00	10.91	CEC-A	195-29	KENDA	Mastercraft	Lexington ES-335	195/65R15		7YAEYAP4105
65	P	195	65	15	89	T	560	A	B	10.0	REP	18.31	24.99	9.53	CEC-A	195-30	OHTSU	Sumitomo	HTR T4			

sort#	Prefix or Tire Type	section width	aspect ratio	rim diam	Load Index	Speed Rating	Treadwear	Traction	Temp	Tread Depth	Market	average weight	average OD	avg RRC	Source	Group or other ID number	manufacturer	brand	model	Tire Size	Part number	serial number
66	P	195	65	15	89	T	320	A	B	10.0	REP	18.99	25.04	10.36	CEC-A	195-31	PTSUMI	Sumic	GT 65	P195/65R15		7T9N3KA12505
67	P	195	65	15	89	T	600	A	B	10.0	REP	19.70	25.14	10.98	CEC-A	195-35	HANKOOK	Hankook	Aurora Radial H715	P195/65R15		T7DYHZA4305
68	P	195	65	15	89	T	700	A	B	11.0	REP	20.81	25.01	11.56	CEC-A	195-37	GY	Kelly Springfield	Navagator Platinum TE	P195/65R15		MKC616LR3805
69	P	195	65	15	89	T	620	A	B	10.0	REP	20.98	24.98	11.16	CEC-A	195-57	MI	BFGoodrich	Traction T/A	P195/65R15		N4C6TJ110206
70	P	195	65	15	89	T	700	A	B	11.0	REP	19.51	25.04	10.08	CEC-A	195-58	TOYO	Toyo	800Ultra Permium Touring	P195/65R15		CX9N49V2703
71	N	195	65	15	91	T	320	A	A	10.0	REP	17.96	24.90	10.32	CEC-A	195-67	FATE	Fate	AR-35 Advance	195/65R15		F5-2805
72	N	195	65	15	91	T	620	A	B	11.0	REP	20.52	24.97	10.42	CEC-A	195-69	COOPER	American	Platinum	195/65R15		U9AEXF30806
73	P	195	65	15	89	T	600	A	B	10.0	REP	19.69	24.87	10.07	CEC-A	195-71	MI	BFGoodrich	Control Plus	P195/65R15		BHC6TU310406
74	P	195	65	15	89	T	660	A	B	11.0	REP	20.83	25.21	10.59	CEC-A	195-72	MI	Uniroyal	Tiger Paw Touring	P195/65R15		BHC6F7UU1206
75	P	195	65	15	89	T	640	A	B	11.0	REP	20.95	25.11	11.13	CEC-A	195-73	BF	Genadier	PLE	P195/65R15		E2C6PLO206
76	N	195	65	15	91	T	540	A	B	10.0	REP	20.59	24.82	10.70	CEC-A	195-76	COOPER	Mastercraft	Strategy	195/65R15		U9AEFUT1006
77	P	195	65	15	89	H	560	A	A	10.0	REP	23.90	25.12	13.43	CEC-A	195-08	BF	Firestone	Affinity LH30	P195/65R15		W1C6LH04004
78	P	195	65	15	89	H	400	A	A	10.0	REP	22.58	25.23	13.01	CEC-A	195-12	MI	Michelin	Pilot XGT H4	P195/65R15		4MTAD6KX4803
79	P	195	65	15	89	H	500	AA	A	10.0	REP	19.72	25.00	11.80	CEC-A	195-16	YOKO	Yokohama	Avid H4S	P195/65R15		CC9N8XE3405
80	P	195	65	15	89	H	460	AA	A	9.0	REP	19.23	25.00	13.11	CEC-A	195-22	GY	Dunlop	SP Sport A2 Plus	P195/65R15		MKC64FHR0106
81	N	195	65	15	91	H	400	A	A	10.0	REP	20.02	24.96	10.69	CEC-A	195-25	LINGLONG	NanKang	NS Touring	195/65R15		OU9N3605
82	P	195	65	15	89	H	300	A	A	10.0	REP	19.00	24.98	10.55	CEC-A	195-32	PTSUMI	Eldorado	Doral SDL 65	P195/65R15		7T9N3M215005
83	P	195	65	15	91	H	280	A	A	10.5	REP	17.83	24.62	10.98	CEC-A	195-38	BARUM	Minerva	Super 65	P195/65R15		HWPCAXYW5005
84	P	195	65	15	91	H	380	A	A	10.0	REP	22.71	24.97	11.76	CEC-A	195-39	TSENTAI	Warrior	Fluent Radial	P195/65R15		Y5TAA00X1105
85	N	195	65	15	91	H	400	A	A	10.0	REP	20.11	24.96	9.60	CEC-A	195-41	GRANDTOUR	Hercules	Electra G3003	195/65R15		9UJB2005
86	P	195	65	15	91	H	320	A	B	10.0	REP	19.18	25.15	10.10	CEC-A	195-43	GY	Blue Streak	GT665+	P195/65R15		NLAENJBR0206
87	N	195	65	15	91	H	420	A	A	9.0	REP	19.21	24.91	10.80	CEC-A	195-46	OHTSU	Falken Ohtsu	ZE512	195/65R15		V49N3MTR3605
88	N	195	65	15	91	H	400	A	A	10.0	REP	21.70	24.95	11.69	CEC-A	195-47	BF	Fuzion	HRI	195/65R15		W2AEFUO0906
89	P	195	65	15	89	H	740	A	B	9.0	REP	23.75	24.88	11.34	CEC-A	195-49	GY	Goodyear	Assurance TripleTred	P195/65R15		M6C6TPMP0806
90	N	195	65	15	91	H	380	A	A	10.0	REP	19.45	24.98	10.11	CEC-A	195-50	NANKANG	NanKang	EX-601	195/65R15		U89N1360906N2
91	N	195	65	15	91	H	400	AA	A	10.0	REP	18.02	25.04	9.53	CEC-A	195-51	CONT	Continental	ContiPro Contact	195/65R15		CNPCAXH64905
92	N	195	65	15	91	H	380	A	A	11.0	REP	19.47	25.32	11.55	CEC-A	195-59	GY	PB Kelly	Super GT Sport Radial	195/65R15		PJAEMLHR4905
93	N	195	65	15	91	H	440	AA	A	10.0	REP	23.26	24.98	12.51	CEC-A	195-63	MI	BFGoodrich	Traction T/A	195/65R15		N4AEMCH4505
94	P	195	65	15	89	H	420	A	A	11.0	REP	21.33	25.03	11.81	CEC-A	195-66	CONT	General	Exclaim	P195/65R15		ACC63LY2305
95	N	195	65	15	91	H	560	A	A	11.0	REP	21.27	25.04	10.50	CEC-A	195-70	MI	Uniroyal	Tiger Paw Touring	195/65R15		Y9AEC9UU0106
96	P	195	65	15	89	V	400	A	A	9.0	REP	18.55	24.96	9.44	CEC-A	195-14	MI	Michelin	Energy MXV4 Plus	P195/65R15		M3TAEVWX0203
97	P	195	65	15	89	V	340	A	A	9.0	REP	19.74	24.71	12.16	CEC-A	195-24	GY	Dunlop	SP Sport 5000	P195/65R15		EU9N4MDR5003
98	N	195	65	15	91	V	320	AA	A	9.0	REP	20.57	24.95	10.84	CEC-A	195-26	KUMHO	Kumho	Ecsta KH11	195/65R15		Y09PYA73405
99	N	195	65	15	91	V	400	A	A	10.0	REP	18.92	24.84	10.88	CEC-A	195-36	TOYO	Toyo	Proxes TPT	195/65R15		CX9N9843705
100	P	195	65	15	89	V	320	A	A	9.0	REP	18.65	24.92	9.75	CEC-A	195-45	YOKO	Yokohama	AVS Decibel S2	P195/65R15		FD9NNTN4205
101	N	195	70	14	91	S	400	A	B	10.0	REP	17.87	24.65	11.75	CEC-C	SIS-14	BF	Firestone	FR380	195/70R14		W5J938B4605
102	P	195	75	14	92	S	400	A	B	10.0	REP	18.57	25.53	10.42	CEC-C	SIS-15	BF	Firestone	FR380	P195/75R14		HYKA38A4905
103	P	205	65	15	92	S	400	A	B	10.0	REP	18.60	25.61	10.75	CEC-C	SIS-22	BF	Firestone	FR380	P205/65R15		HYUR38B0906
104	N	205	70	14	95	S	400	A	B	10.0	REP	19.53	25.47	10.79	CEC-C	SIS-03	BF	Firestone	FR380	205/70R14		WBT938A5005
105	P	205	70	15	95	S	400	A	B	10.0	REP	20.98	26.47	10.11	CEC-C	SIS-16	BF	Firestone	FR380	P205/70R15		HYMO38A0806
106	P	205	75	14	95	S	400	A	B	10.0	REP	20.21	26.18	11.07	CEC-C	SIS-28	BF	Firestone	FR380	P205/75R14		HYKC38A0706
107	P	205	75	15	97	S	400	A	B	10.0	REP	20.72	27.18	10.20	CEC-C	SIS-26	BF	Firestone	FR380	P205/75R15		HYUL38A0406
108	P	215	60	16	94	S	400	A	B	11.5	REP	21.49	26.12	10.30	CEC-C	SIS-01	BF	Firestone	FR380	P215/60R16		HYX838B0506
109	P	215	65	15	95	S	400	A	B	11.0	REP	21.79	26.15	10.19	CEC-C	SIS-02	BF	Firestone	FR380	P215/65R15		HYVF38B0306
110	P	215	70	14	96	S	400	A	B	10.0	REP	20.38	25.92	10.63	CEC-C	SIS-08	BF	Firestone	FR380	P215/70R14		WBHY38A5005
111	P	215	70	15	97	S	400	A	B	10.0	REP	22.36	27.04	9.87	CEC-C	SIS-27	BF	Firestone	FR380	P215/70R15		HYM338A0706
112	P	215	75	14	98	S	400	A	B	10.0	REP	20.92	26.69	11.37	CEC-C	SIS-25	BF	Firestone	FR380	P215/75R14		WBHB38A1705
113	P	215	75	15	100	S	400	A	B	10.0	REP	23.68	27.67	10.28	CEC-C	SIS-07	BF	Firestone	FR380	P215/75R15		HYHF38A0606
114	P	225	60	16	97	S	400	A	B	12.0	REP	24.10	26.71	10.17	CEC-C	SIS-23	BF	Firestone	FR380	P225/60R16		HYX038B0906
115	P	225	75	15	102	S	400	A	B	10.0	REP	26.83	28.39	10.76	CEC-C	SIS-09	BF	Firestone	FR380	P225/75R15		HYHH38A0906
116	P	235	75	15	105	S	400	A	B	10.0	REP	27.97	28.90	10.25	CEC-C	SIS-20	BF	Firestone	FR380	P235/75R15		WBHL3804905
117	P	265	70	17	113	S	480	A	B	12.0	REP	41.50	31.21	10.86	CEC-B	265-05	BF	Firestone	Destination LE	P265/70R17		VNT6D104605
118	P	265	70	17	113	S	500	A	B	13.0	REP	40.48	31.96	9.46	CEC-B	265-08	MI	Michelin	LTX M/S	P265/70R17		B7KPC1JX4605
119	P	265	70	17	113	S	500	A	B	12.0	REP	41.83	31.77	11.17	CEC-B	265-12	YOKO	Yokohama	Geolandar G051 H/T-S	P265/70R17		FB70NPW3905
120	P	265	70	17	113	S	500	A	B	12.0	REP	38.22	31.65	9.26	CEC-B	265-16	GY	Dunlop	Grantrek AT20	P265/70R17		MKC633HR5005
121	P	265	70	17	113	S	500	A	B	13.0	REP	40.80	31.61	10.63	CEC-B	265-18	GY	Dunlop	Radial Rover A/T	P265/70R17		DAT6GA2R4803
122	P	265	70	17	113	S	400	B	C	11.5	REP	39.92	31.40	9.25	CEC-B	265-19	MI	Uniroyal	Laredo AWT	P265/70R17		BET6B45U4405
123	P	265	70	17	113	S	360	A	B	12.0	REP	44.18	31.50	12.63	CEC-B	265-22	PIR	Pirelli	Scorpion AT	P265/70R17		XLE6D9305104
124	P	265	70	17	113	S	520	A	B	13.0	REP	40.85	31.53	10.28	CEC-B	265-23	COOPER	Jetzon	Revenger ST	P265/70R17		UPT64RC93605
125	P	265	70	17	113	S	540	A	B	14.0	REP	41.07	31.94	11.08	CEC-B	265-24	GY	Kelly Springfield	Safari Signature	P265/70R17		MKT64BLR4105
126	P	265	70	17	113	S	500	A	B	12.0	REP	40.06	31.63	10.22	CEC-B	265-25	BF	Firestone	Firehawk Indy 5000	P265/70R17		VNT65034405
127	P	265	70	17	113	S	360	B	B	12.0	REP	40.01	31.84	10.88	CEC-B	265-29	YOKO	Yokohama	Geolandar AT Plus II	P265/70R17		FB70NML5205
128	P	265	70	17	113	S	500	A	C	13.0	REP	39.89	31.39	9.25	CEC-B	265-30	MI	Cavalier	Sport King AT	P265/70R17		BET6B4JJ4105
129	P	265	70	17	113	S	480	A	B	13.0	REP	41.05	32.00	11.13	CEC-B	265-31	GY	Republic	Trail Mark APR	P265/70R17		MKT6KWLR0306
130	P	265	70	17	113	S	500	A	B	13.0	REP	41.33	31.58									

sort#	Prefix or Tire Type	section width	aspect ratio	rim diam	Load Index	Speed Rating	Treadwear	Traction	Temp	Tread Depth	Market	average weight	average OD	avg RRC	Source	Group or other ID number	manufacturer	brand	model	Tire Size	Part number	serial number
131	P	265	70	17	113	S	460	A	B	13.0	REP	41.32	31.37	10.43	CEC-B	265-33	COOPER	Mastercraft	Courser AT	P265/70R17		UPT6FLF5105
132	P	265	70	17	113	S	440	A	B	12.0	REP	36.86	31.75	9.67	CEC-B	265-34	HANKOOK	Hankook	Dynapro AS RH03	P265/70R17		1G9NNAH4505
133	P	265	70	17	113	S	500	A	B	12.0	REP	45.63	31.77	10.91	CEC-B	265-35	YOKO	Mohawk	Comanche Radial HT	P265/70R17		CC70VYN2005
134	P	265	70	17	113	S	520	A	B	13.0	REP	40.90	31.98	10.75	CEC-B	265-36	GY	Star	Ultra Tour Sport SUV	P265/70R17		MKT6YFLR0306
135	P	265	70	17	113	S	540	A	B	13.0	REP	42.44	31.49	9.64	CEC-B	265-40	MI	Uniroyal	Laredo Cross Country	P265/70R17		BET6C6UU1306
136	P	265	70	17	113	S	480	A	B	13.0	REP	40.73	31.20	9.54	CEC-B	265-41	MI	Uniroyal	Laredo All Season AWP	P265/70R17		BET6A9UU0606
137	P	265	70	17	113	S	460	A	B	14.0	REP	40.13	31.45	10.53	CEC-B	265-42	COOPER	Futura	Dakota AT	P265/70R17		UTT6PAP1006
138	N	265	70	17	115	S	520	A	B	13.5	REP	41.06	31.47	10.00	CEC-B	265-43	COOPER	American	Prospector SUV	P265/70R17		UP1VXHH0306
139	N	265	70	17	115	S	500	A	B	13.0	REP	40.69	31.55	9.96	CEC-B	265-44	COOPER	American	Prospector AT	P265/70R17		UP1YXF20206
140	P	265	70	17	113	S	500	A	B	13.0	REP	38.70	31.75	10.23	CEC-B	265-45	KUMHO	Kumho	Road Venture AT KL78	P265/70R17		4TVYP4A4405
141	P	265	70	17	113	S	500	A	B	14.0	REP	43.96	31.61	11.33	CEC-B	265-46	BF	Bridgestone	Dueller A/T Revo	P265/70R17		EN70DDJ1106
142	P	265	70	17	113	S	440	A	B	13.0	REP	41.64	31.77	10.34	CEC-B	265-48	BF	Dayton	Widetrack Baja AT	P265/70R17		W2T6WBD1606
143	P	265	70	17	113	T	720	A	B	12.0	REP	43.19	31.69	12.39	CEC-B	265-14	GY	Goodyear	Fortera Silent Armor	P265/70R17		PJT665HR4905
144	P	265	70	17	113	T	400	A	B	13.0	REP	42.23	31.50	9.65	CEC-B	265-20	MI	BFGoodrich	Rugged Trail TA	P265/70R17		BET6H4111005
145	P	265	70	17	115	T	460	A	B	10.0	REP	42.79	31.68	8.52	CEC-B	265-37	PRIMELAND	GT Radial	Savero HT Owl	P265/70R17		5WZG1604
146	P	265	70	17	113	T	500	A	B	12.0	REP	41.19	31.84	9.37	CEC-B	265-38	OHTSU	Falken	Ziex S/TZ04	P265/70R17		V47037YR4905
147	P	265	70	17	113	H	520	A	A	11.0	REP	40.47	31.53	11.22	CEC-B	265-04	PIRELLI	Pirelli	Scorpio STR	P265/70R17		XLE6E4383705
148	P	265	70	17	113	H	520	A	A	11.0	REP	37.14	31.82	9.57	CEC-B	265-07	MI	Michelin	Cross-Terrain SUV	P265/70R17		B7KPFN8X2205
149	P	265	70	17	113	H	600	A	A	11.5	REP	40.06	31.67	9.54	CEC-B	265-47	BF	Bridgestone	Dueller HL Alenza	P265/70R17		EL70CDM0606
150	P	185	65	14	85	H	560	A	A	11.0	REP	20		11.6	SR286RMA	1	BF		AFFINITY LH30 85H	P185/65R14		
151	P	195	65	15	89	H	560	A	A	11.0	REP	21		12.6	SR286RMA	2	BF		AFFINITY LH30 89H	P195/65R15		
152	P	215	60	16	94	H	560	A	A	12.0	REP	25		11.5	SR286RMA	3	BF		AFFINITY LH30 94H	P215/60R16		
153	P	235	75	15	105	S	400	A	B	12.0	REP	31		10.6	SR286RMA	4	BF		DUELER A/T 105S	P235/75R15		
154	P	255	70	16	109	S	400	A	B	13.0	REP	37	30.1	9.7	SR286RMA	5	BF		DUELER A/T 109S	P255/70R16		
155	P	235	70	16	104	S	400	A	B	12.0	REP	36		10.4	SR286RMA	6	BF		DUELER A/T 104S	P235/70R16		
156	P	235	75	15	105	S	300	A	B	11.0	REP	31		9.9	SR286RMA	7	BF		DUELER H/T 105S	P235/75R15		
157	P	245	65	17	105	S	180	B	B	13.0	REP	36	29.5	9.3	SR286RMA	8	BF		DUELER H/T 105S	P245/65R17		
158	P	235	75	15	105	S	560	A	B	11.0	REP	29		9.9	SR286RMA	9	BF		INSIGNIA SE 200 105S	P235/75R15		
159	P	185	65	14	85	S	560	A	B	11.0	REP	17		10.2	SR286RMA	10	BF		INSIGNIA SE 200 85S	P185/65R14		
160	P	205	65	15	92	S	560	A	B	11.0	REP	20		9.5	SR286RMA	11	BF		INSIGNIA SE 200 92S	P205/65R15		
161	P	225	60	16	97	S	560	A	B	11.0	REP	24	26.6	9.7	SR286RMA	12	BF		INSIGNIA SE 200 97S	P225/60R16		
162	P	205	65	15	92	H	400	A	A	11.0	REP	24		10.7	SR286RMA	13	BF		POTENZA RE950 92H	P205/65R15		
163	P	225	60	16	97	H	400	A	A	11.0	REP	29		10.5	SR286RMA	14	BF		POTENZA RE950 97H	P225/60R16		
164	P	205	65	15	92	H	400	AA	A	11.0	REP	25		11.2	SR286RMA	15	BF		TURANZA LS-H 92H	P205/65R15		
165	P	225	60	16	97	H	400	AA	A	12.0	REP	30		10.1	SR286RMA	16	BF		TURANZA LS-H 98H	P225/60R16		
166	P	185	65	14	85	T	700	A	B	12.0	REP	20		11.8	SR286RMA	17	BF		TURANZA LS-T 85T	P185/65R14		
167	P	205	65	15	92	T	700	A	B	12.0	REP	25	25.6	12	SR286RMA	18	BF		TURANZA LS-T 92T	P205/65R15		
168	P	225	60	16	97	T	700	A	B	12.0	REP	29	26.8	11	SR286RMA	19	BF		TURANZA LS-T 97T	P225/60R16		
169	N	255	55	18	105	W	220	AA	A	10.0	REP	32		9.02	SR286RMA	30	MI		4X4 DIAMARIS	255/55R18		
170	N	285	60	18	116	W	220	AA	A	10.0	REP	40		8.89	SR286RMA	31	MI		4X4 DIAMARIS	285/60R18		
171	N	285	50	18	109	W	220	AA	A	10.0	REP	38		9.43	SR286RMA	32	MI		4X4 DIAMARIS	285/50R18		
172	N	235	70	16	105	H	380	AA	A	13.0	REP	33		9.53	SR286RMA	33	MI		4X4 SYNCHRONE	235/70R16		
173	P	175	70	13	82	S	480	A	B		REP	16		13.05	SR286RMA	34	MI		CIENTRA PLUS	P175/70R13		
174	P	205	65	15	92	S	480	A	B		REP	23		10.93	SR286RMA	35	MI		CIENTRA PLUS	P205/65R15		
175	P	175	70	13	82	S	560	A	A	11.0	REP	22		10.4	SR286RMA	36	MI		CONTROL PLUS	P175/70R13		
176	P	195	70	14	90	S	600	A	A	11.0	REP	19		9.95	SR286RMA	37	MI		CONTROL PLUS	P195/70R14		
177	P	185	65	14	85	T	600	A	A	10.5	REP	18		11.1	SR286RMA	38	MI		CONTROL PLUS	P185/65R14		
178	P	215	70	15	97	S	600	A	A	11.5	REP	24		9.46	SR286RMA	39	MI		CONTROL PLUS	P215/70R15		
179	P	205	65	15	92	T	600	A	A	10.5	REP	22		9.46	SR286RMA	40	MI		CONTROL PLUS	P205/65R15		
180	P	225	60	16	97	T	600	A	A	10.5	REP	23		8.81	SR286RMA	41	MI		CONTROL PLUS	P225/60R16		
181	P	235	65	17	103	T	440	A	A	11.0	REP	32		9.09	SR286RMA	42	MI		CROSS TERRAIN	P235/65R17		
182	P	245	70	16	106	H	420	A	A		REP	32		9.67	SR286RMA	43	MI		CROSS TERRAIN	P245/70R16		
183	P	245	70	16	106	S	440	A	A	11.0	REP	31		8.71	SR286RMA	44	MI		CROSS TERRAIN SUV	P245/70R16		
184	P	275	60	17	110	S	700	A	B	11.0	REP	38		8.71	SR286RMA	45	MI		CROSS TERRAIN SUV	P275/60R17		
185	P	255	75	17	113	S	700	A	B	11.0	REP	38		8.29	SR286RMA	46	MI		CROSS TERRAIN SUV	P255/75R17		
186	P	205	70	14	93	S	480	A	B		REP	20		9.71	SR286RMA	47	MI		DEFENDER SPORT TR/SR	P205/70R14		
187	P	205	65	15	92	T	500	A	B	10.0	REP	21		8.69	SR286RMA	48	MI		ENERGY LX4	P205/65R15		
188	P	225	60	16	97	T	500	A	B	10.0	REP	25		8.5	SR286RMA	49	MI		ENERGY LX4	P225/60R16		
189	N	245	60	17	108	T	500	A	B	10.0	REP	31		9.03	SR286RMA	50	MI		ENERGY LX4	245/60R17		
190	N	205	60	15	91	H	400	A	A	10.0	REP	20		9.49	SR286RMA	51	MI		ENERGY MXV4 PLUS	205/60R15		
191	N	235	65	17	104	H	400	A	A	10.0	REP	31		8.55	SR286RMA	52	MI		ENERGY MXV4 PLUS	235/65R17		
192	P	235	55	18	99	V	440	A	A	10.0	REP	33		9.01	SR286RMA	53	MI		ENERGY MXV4 S8	P235/55R18		
193	N	205	60	15	91	V	340	AA	A	10.0	REP	22		12.63	SR286RMA	54	MI		G-FORCE SPORT	205/60R15		
194	N	195	55	15	85	W	340	AA	A	10.0	REP	20		12.51	SR286RMA	55	MI		G-FORCE SPORT	195/55R15		
195	N	205	40	17	80	W	340	AA	A	10.0	REP	21		13.3	SR286RMA	56	MI		G-FORCE SPORT	205/40ZR17		

sort#	Prefix or Tire Type	section width	aspect ratio	rim diam	Load Index	Speed Rating	Treadwear	Traction	Temp	Tread Depth	Market	average weight	average OD	avg RRC	Source	Group or other ID number	manufacturer	brand	model	Tire Size	Part number	serial number
196	N	225	45	17	91	W	340	AA	A	10.0	REP	23		12.43	SR286RMA	57	MI		G-FORCE SPORT	225/45ZR17		
197	N	225	45	17	90	Y	200	AA	A	9.0	REP	24		11.31	SR286RMA	58	MI		G-FORCE T/A KD DIR.L	225/45ZR17		
198	N	205	40	17	80	Y	200	AA	A	9.0	REP	22		12.87	SR286RMA	59	MI		G-FORCE T/A KD DIR.L	205/40ZR17		
199	N	225	45	17	90	Y	300	AA	A	10.0	REP	24		12.66	SR286RMA	60	MI		G-FORCE T/A KDW DIR.	225/45ZR17		
200	N	205	45	16	87	W	300	AA	A	10.0	REP	20		13.07	SR286RMA	61	MI		G-FORCE T/A KDW DIR.	205/45ZR16		
201	N	205	40	17	84	Y	300	AA	A	10.0	REP	22		13.1	SR286RMA	62	MI		G-FORCE T/A KDW DIR.	205/40ZR17		
202	N	285	60	18	120	W	300	AA	A	10.0	REP	38		9.17	SR286RMA	63	MI		G-FORCE T/A KDW DIR.	285/60R18		
203	N	285	55	20	119	V	300	AA	A	10.0	REP	40		8.7	SR286RMA	64	MI		G-FORCE T/A KDW DIR.	285/55R20		
204	N	275	40	18	99	Y	300	AA	A	10.0	REP	28		10.8	SR286RMA	65	MI		G-FORCE T/A KDW DIR.	275/40ZR18		
205	N	295	45	22	116	W	300	AA	A	10.0	REP	40		8.97	SR286RMA	66	MI		G-FORCE T/A KDW DIR.	295/45ZR22		
206	N	245	35	20	95	W	300	AA	A	10.0	REP	27		12.1	SR286RMA	67	MI		G-FORCE T/A KDW DIR.	245/35ZR20		
207	N	225	30	20	85	W	300	AA	A	10.0	REP	23		12.68	SR286RMA	68	MI		G-FORCE T/A KDW DIR.	225/30ZR20		
208	N	295	40	20	106	Y	300	AA	A	10.0	REP	37		10.38	SR286RMA	69	MI		G-FORCE T/A KDW DIR.	295/40ZR20		
209	N	255	45	17	98	W	400	AA	A	10.0	REP	27		10.54	SR286RMA	70	MI		G-FORCE T/A KDWS	255/45ZR17		
210	P	185	65	14	85	S	740	A	B	11.0	REP	19		10.89	SR286RMA	71	MI		HARMONY	P185/65R14		
211	P	205	65	15	92	S	740	A	B	11.0	REP	23		10.28	SR286RMA	72	MI		HARMONY	P205/65R15		
212	P	185	60	15	84	T	740	A	B	11.0	REP	20		10.96	SR286RMA	73	MI		HARMONY	P185/60R15		
213	P	225	60	16	97	S	740	A	B	11.0	REP	25		9.6	SR286RMA	74	MI		HARMONY	P225/60R16		
214	P	185	65	14	85	T	800	A	B	11.0	REP	18		10.83	SR286RMA	75	MI		HYDRO EDGE	P185/65R14		
215	P	205	65	15	92	T	800	A	B	11.0	REP	22		10.04	SR286RMA	76	MI		HYDRO EDGE	P205/65R15		
216	P	225	60	16	97	T	800	A	B	11.0	REP	26		9.19	SR286RMA	77	MI		HYDRO EDGE	P225/60R16		
217	P	245	70	16	106	S	400	B	B	10.0	REP	29		9.41	SR286RMA	78	MI		LAREDO AWT	P245/70R16		
218	P	215	75	15	100	S	540	A	B	13.0	REP	30		10.38	SR286RMA	79	MI		LAREDO CRS CTRY	P215/75R15		
219	P	235	70	16	104	S	540	A	B	13.0	REP	30		9.74	SR286RMA	80	MI		LAREDO CRS CTRY	P235/70R16		
220	P	265	70	17	113	S	540	A	B	13.0	REP	41		8.69	SR286RMA	81	MI		LAREDO CRS CTRY	P265/70R17		
221	P	205	75	15	97	T	500	A	B	13.0	REP	28		10.38	SR286RMA	82	MI		LONG TRAIL T/A	P205/75R15		
222	P	245	70	16	106	T	500	A	B	13.0	REP	36		9.52	SR286RMA	83	MI		LONG TRAIL T/A	P245/70R16		
223	P	265	70	17	113	T	500	A	B	11.0	REP	36		9.02	SR286RMA	84	MI		LONG TRAIL T/A	P265/70R17		
224	P	255	65	17	108	S	420	A	B	10.0	REP	34		7.54	SR286RMA	85	MI		LTX A/S	P255/65R17		
225	P	235	70	15	102	S	420	A	B	13.0	REP	30		9.52	SR286RMA	86	MI		LTX M/S	P235/70R15		
226	P	245	70	16	106	S	420	A	B	13.0	REP	35		9.35	SR286RMA	87	MI		LTX M/S	P245/70R16		
227	P	265	70	17	113	S	420	A	B	13.0	REP	40		8.81	SR286RMA	88	MI		LTX M/S	P265/70R17		
228	P	275	55	20	111	T	420	A	B	13.0	REP	41		8.86	SR286RMA	89	MI		LTX M/S	P275/55R20		
229	P	275	60	20	114	T	420	A	B	13.0	REP	44		8.7	SR286RMA	90	MI		LTX M/S	P275/60R20		
230	N	215	55	16	93	H	300	A	A	10.0	REP	22		8.7	SR286RMA	91	MI		PILOT HX MXM4	215/55R16		
231	P	255	55	18	104	V	300	A	A	10.0	REP	33		9.47	SR286RMA	92	MI		PILOT HX MXM4	P255/55R18		
232	P	225	55	17	95	V	300	A	A	10.0	REP	24		9.35	SR286RMA	93	MI		PILOT HX MXM4	P225/55R17		
233	P	215	50	17	93	V	300	A	A	10.0	REP	23		9.89	SR286RMA	94	MI		PILOT HX MXM4	P215/50R17		
234	P	235	55	17	98	V	300	A	A	10.0	REP	27		9.42	SR286RMA	95	MI		PILOT HX MXM4	P235/55ZR17		
235	N	245	65	17	107	H	400	A	A	11.0	REP	34		9.1	SR286RMA	96	MI		PILOT LTX	245/65R17		
236	P	265	70	17	113	H	400	A	A	11.0	REP	50		8.54	SR286RMA	97	MI		PILOT LTX	P265/70R17		
237	P	275	65	18	114	H	400	A	A	11.0	REP	44		9.42	SR286RMA	98	MI		PILOT LTX	P275/65R18		
238	P	285	55	18	111	V	460	A	A	11.0	REP	38		9.1	SR286RMA	99	MI		PILOT LTX	P285/55R18		
239	N	225	45	17	91	Y	240	AA	A	10.0	REP	23		10.08	SR286RMA	100	MI		PILOT PRIMACY	225/45R17		
240	N	245	50	18	100	W	240	AA	A	10.0	REP	26		9.93	SR286RMA	101	MI		PILOT PRIMACY	245/50R18		
241	N	275	50	19	112	W	240	AA	A	10.0	REP	34		8.33	SR286RMA	102	MI		PILOT PRIMACY	275/50R19		
242	N	215	45	16	86	W	220	AA	A	10.0	REP	20		12.38	SR286RMA	103	MI		PILOT SPORT	215/45ZR16		
243	N	275	40	18	99	Y	220	AA	A	10.0	REP	27		11.54	SR286RMA	104	MI		PILOT SPORT	275/40ZR18		
244	N	245	50	16	97	W	400	AA	A	10.0	REP	27		12.19	SR286RMA	105	MI		PILOT SPORT A/S	245/50ZR16		
245	N	225	45	17	90	Y	400	AA	A	10.0	REP	23		13.25	SR286RMA	106	MI		PILOT SPORT A/S	225/45ZR17		
246	N	245	50	17	99	W	400	AA	A	10.0	REP	27		12.13	SR286RMA	107	MI		PILOT SPORT A/S	245/50ZR17		
247	N	335	30	20	104	Y	400	AA	A	9.0	REP	35		10.02	SR286RMA	108	MI		PILOT SPORT PS2	335/30ZR20		
248	P	195	60	14	85	H	400	A	A	10.0	REP	19		12.38	SR286RMA	109	MI		PILOT XGT H4	P195/60R14		
249	P	205	60	15	90	H	400	A	A	10.0	REP	23		12.31	SR286RMA	110	MI		PILOT XGT H4	P205/60R15		
250	P	225	60	16	97	H	400	A	A	10.0	REP	26		10.79	SR286RMA	111	MI		PILOT XGT H4	P225/60R16		
251	P	205	50	15	84	W	300	A	A	10.0	REP	20		11.32	SR286RMA	112	MI		PILOT XGT V4	P205/50R15		
252	P	215	65	15	95	V	300	A	A	10.0	REP	24		11.08	SR286RMA	113	MI		PILOT XGT V4	P215/65R15		
253	P	205	60	15	90	V	300	A	A	10.0	REP	21		11.57	SR286RMA	114	MI		PILOT XGT V4	P205/60R15		
254	P	225	60	16	97	T	600	A	B		REP	24		9.18	SR286RMA	115	MI		PRIMERA A/S TOURING	P225/60R16		
255	P	205	65	15	92	T	600	A	B		REP	22		9.86	SR286RMA	116	MI		PRIMERA A/S TOURING	P205/65R15		
256	P	205	60	15	90	S	400	A	B	11.0	REP	23		10.49	SR286RMA	117	MI		RADIAL T/A	P205/60R15		
257	P	255	70	15	108	S	400	A	B	12.0	REP	28		9.85	SR286RMA	118	MI		RADIAL T/A	P255/70R15		
258	P	185	60	14	82	H	400	A	A		REP	17		10.08	SR286RMA	119	MI		RAPTOR H4	P185/60R14		
259	P	205	60	15	90	H	400	A	A		REP	22		9.73	SR286RMA	120	MI		RAPTOR H4	P205/60R15		
260	P	225	60	16	97	H	400	A	A		REP	26		9.45	SR286RMA	121	MI		RAPTOR H4	P225/60R16		

sort#	Prefix or Tire Type	section width	aspect ratio	rim diam	Load Index	Speed Rating	Treadwear	Traction	Temp	Tread Depth	Market	average weight	average OD	avg RRC	Source	Group or other ID number	manufacturer	brand	model	Tire Size	Part number	serial number
261	P	245	50	16	97	Z	300	AA	A		REP	28		10.26	SR286RMA	122	MI		RAPTOR Z4	P245/50ZR16		
262	P	255	50	16	99	Z	300	AA	A		REP	30		9.66	SR286RMA	123	MI		RAPTOR Z4	P255/50ZR16		
263	P	245	65	17	105	S	400	A	B	13.0	REP	33		7.67	SR286RMA	124	MI		RUGGED TRAIL T/A	P245/65R17		
264	P	245	70	16	106	T	400	A	B	13.0	REP	35		9.18	SR286RMA	125	MI		RUGGED TRAIL T/A	P245/70R16		
265	P	265	75	16	111	S	400	A	B	14.0	REP	52		9.71	SR286RMA	126	MI		RUGGED TRAIL T/A	P265/75R16		
266	P	285	70	17	117	T	400	A	B	13.0	REP	44		7.09	SR286RMA	127	MI		RUGGED TRAIL T/A	P285/70R17		
267	P	265	70	17	113	S	500	A	C		REP	40		8.91	SR286RMA	128	MI		SPORT KING A/T PS	P265/70R17		
268	P	195	70	14	90	S	320	B	B		REP	18		9.48	SR286RMA	129	MI		STEEL BELTED RADIAL	P195/70R14		
269	P	205	75	15	97	S	320	B	B		REP	21		8.64	SR286RMA	130	MI		STEEL BELTED RADIAL	P205/75R15		
270	P	185	65	14	85	S	600	A	B	10.0	REP	18		9.82	SR286RMA	131	MI		SYMMETRY	P185/65R14		
271	P	205	70	15	95	S	600	A	B	10.0	REP	23		9.39	SR286RMA	132	MI		SYMMETRY	P205/70R15		
272	P	225	60	16	97	S	460	A	B	10.0	REP	27		6.5	SR286RMA	133	MI		SYMMETRY	P225/60R16		
273	P	185	65	14	85	S	580	A	B	9.0	REP	17		10.34	SR286RMA	134	MI		TIGER PAW AWP	P185/65R14		
274	P	205	65	15	92	S	580	A	B	11.0	REP	22		10.45	SR286RMA	135	MI		TIGER PAW AWP	P205/65R15		
275	P	215	70	15	97	S	580	A	B	11.0	REP	22		9.51	SR286RMA	136	MI		TIGER PAW AWP	P215/70R15		
276	P	235	75	15	105	S	540	A	B	11.0	REP	28		9.71	SR286RMA	137	MI		TIGER PAW AWP	P235/75R15		
277	P	225	60	16	97	S	500	B	B	9.0	REP	25		6.83	SR286RMA	138	MI		TIGER PAW AWP	P225/60R16		
278	P	175	70	13	82	S	520	A	B	10.0	REP	17		13.03	SR286RMA	139	MI		TPAW AS6000 A/S	P175/70R13		
279	P	185	60	14	82	H	400	A	A	10.5	REP	17		10.32	SR286RMA	140	MI		TPAW TOURING HR	P185/60R14		
280	P	205	65	15	92	H	400	A	A	10.5	REP	23		9.44	SR286RMA	141	MI		TPAW TOURING HR	P205/65R15		
281	P	225	60	16	97	H	400	A	A	10.5	REP	26		9.21	SR286RMA	142	MI		TPAW TOURING HR	P225/60R16		
282	P	175	70	13	82	T	540	A	B	11.0	REP	15		9.99	SR286RMA	143	MI		TPAW TOURING TR/SR	P175/70R13		
283	P	215	70	16	99	S	540	A	B	9.0	REP	29		7.95	SR286RMA	144	MI		TPAW TOURING TR/SR	P215/70R16		
284	P	205	65	15	92	T	540	A	B	11.0	REP	22		8.91	SR286RMA	145	MI		TPAW TOURING TR/SR	P205/65R15		
285	P	225	60	16	97	T	540	A	B	11.5	REP	22		9.3	SR286RMA	146	MI		TPAW TOURING TR/SR	P225/60R16		
286	N	185	60	14	82	T	620	A	B	10.0	REP	19		11.54	SR286RMA	147	MI		TRACTION T/A	185/60R14		
287	P	195	55	15	84	T	620	A	B	10.0	REP	22		12.08	SR286RMA	148	MI		TRACTION T/A	P195/55R15		
288	N	205	60	15	91	T	620	A	B	10.0	REP	24		11.09	SR286RMA	149	MI		TRACTION T/A	205/60R15		
289	N	205	55	16	90	T	620	A	B	10.0	REP	24		11.17	SR286RMA	150	MI		TRACTION T/A	205/55R16		
290	P	235	75	15	105	S	420	A	C		REP	32		8.68	SR286RMA	151	MI		TRAIL A/P	P235/75R15		
291	P	205	75	15	97	S	420	A	C		REP	27		10.12	SR286RMA	152	MI		TRAIL A/P	P205/75R15		
292	N	175	70	13	82	S	380	A	A		REP	17		12.3	SR286RMA	153	MI		WARRIOR	175/70R13		
293	N	205	65	15	94	S	380	A	A		REP	24		10.58	SR286RMA	154	MI		WARRIOR	205/65R15		
294	P	265	70	17	113	S	400	A	B	13.0	OE	40	31.7	8.7	SR286RMA	155	BF		DUELER A/T 113S	P265/70R17		
295	P	235	70	16	104	S	300	B	B		OE			8.1	SR286RMA	156	BF		DUELER H/T 104S	P235/70R16		
296	P	265	70	17	113	S	360	B	B	11.0	OE	39	31.7	7	SR286RMA	157	BF		DUELER H/T 113S	P265/70R17		
297	P	195	65	15	89	S	380	B	B	10.0	OE	20	25.0	7.6	SR286RMA	158	BF		INSIGNIA SE 200 89S	P195/65R15		
298	P	215	60	16	94	S	380	B	B	10.0	OE	22	26.1	9.4	SR286RMA	159	BF		INSIGNIA SE 200 94S	P215/60R16		
299	P	185	70	14	87	S	240	B	B	10.0	REP	16		6.15	Ecos	607	BF		B381	P185/70R14		
300	P	235	75	15	105	S	520	A	B	12.0	REP	29		7.8	Ecos	625	CONT		Ameri-G4S WS	P235/75R15		
301	N	235	75	15	105	S	260	A	B		REP			8.13	Ecos	444	GY		Invicta GL	235/75R15		
302	P	205	55	16	89	H	360	A	A	10.0	REP	20	24.9	8.25	Ecos	613	CONT		ContiTouring Contact CH95	P205/55R16		
303	P	185	70	14	87	S	540	A	B	9.0	REP	17		8.75	Ecos	642	MI		Tiger Paw AWP	P185/70R14		
304	N	205	55	16	91	H	400	A	A	10.0	REP	21		9.03	Ecos	637	MI		Energy MXV4 Plus	205/55R16		
305	P	205	55	16	89	H	260	A	A	11.0	REP	19		9.18	Ecos	630	GY		Eagle RS A	P205/55R16		
306	P	245	75	16	109	T	500	B	B	13.0	REP	38		9.2	Ecos	606	BF		Long Trail T/A SL	P245/75R16		
307	N	185	70	14	88	T	380	A	A	10.0	REP	21		9.23	Ecos	641	SU		HTR 200	185/70R14		
308	N	205	55	16	91	Y	80	AA	A	6.0	REP	20		9.23	Ecos	658	MI		Pilot Sport Cup	205/55R16		
309	N	205	55	16	91	W	180	A	A	10.0	REP	23		9.5	Ecos	640	PIR		P6000	205/55R16		
310	N	185	70	14	88	S	460	A	B	10.0	REP	18		9.68	Ecos	707	GY		Integrity	185/70R14		
311	N	235	75	15	105	S	340	A	B	13.0	REP	30		9.68	Ecos	626	CONT		Grabber AP SL	235/75R15		
312	N	235	75	15	105	S	440	A	B	10.0	REP			10.18	Ecos	621	BF		FR680 WS	235/75R15		
313	N	185	70	14	88	S	500	A	B	10.0	REP	18		10.28	Ecos	617	GY		SP40 A/S	185/70R14		
314	P	245	75	16	109	S	440	A	B	13.0	REP	35		10.28	Ecos	639	MI		LTX M/S	P245/75R16		
315	P	245	75	16	109	S	300	A	B	13.0	REP	38		10.3	Ecos	676	BF		Dueler A/T D693	P245/75R16		
316	N	235	75	15	105	S	440	B	B	13.0	REP			10.45	Ecos	623	BF		Wilderness AT	235/75R15		
317	N	245	75	16	109	S	440	A	B	13.0	REP	37		10.5	Ecos	635	KU		Venture AT	245/75R16		
318	N	185	70	14	88	S	160	A	B	10.0	REP	17		10.65	Ecos	610	BF		Potenza RE92	185/70R14		
319	P	185	70	14	87	S	740	A	B	11.0	REP	19		10.73	Ecos	638	MI		Harmony	P185/70R14		
320	N	185	70	14	88	T	560	A	B	11.0	REP	18		10.78	Ecos	631	GY		Regatta 2	185/70R14		
321	P	185	70	14	87	S	500	A	B	10.0	REP	19		10.83	Ecos	767	MI		Symmetry	P185/70R14		
322	N	205	55	16	91	H	400	AA	A	11.0	REP	24		10.85	Ecos	611	BF		Turanza LS-H	205/55R16		
323	N	185	70	14	88	T	700	A	B	12.0	REP	20		10.93	Ecos	612	BF		Turanza LS-T	185/70R14		
324	P	235	75	15	105	S	500	B	B	12.0	REP			11.03	Ecos	799	BF		Affinity Touring	P235/75R15		
325	N	205	55	16	91	Y	220	AA	A	10.0	REP	20		11.1	Ecos	673	MI		Pilot Sport	205/55R16		

sort#	Prefix or Tire Type	section width	aspect ratio	rim diam	Load Index	Speed Rating	Treadw ear	Traction	Temp	Tread Depth	Market	average weight	average OD	avg RRC	Source	Group or other ID number	manufacturer	brand	model	Tire Size	Part number	serial number
326	P	205	55	16	89	W	280	AA	A	10.0	REP	23		11.15	Ecos	748	GY		Eagle F1 GS-D3	P205/55R16		
327	N	205	55	16	91	H	460	AA	A	10.0	REP	24		11.33	Ecos	616	GY		SP Sport A2 SL	205/55R16		
328	P	185	70	14	87	T	640	AA	B		REP			11.33	Ecos	705	GY		Aquatred 3	P185/70R14		
329	N	245	75	16	109	S	320	A	B	12.0	REP			11.42	Ecos	628	GY		Conquest AT	245/75R16		
330	P	205	55	16	89	Y	340	AA	A	10.0	REP			12.03	Ecos	620	BF		Firehawk SZ50EP	P205/55R16		
331	P	205	55	16	89	S	420	A	B	11.0	REP			12.1	Ecos	629	GY		Eagle GT II	P205/55R16		
332	N	205	55	16	91	Y	400	AA	A	10.0	REP	25		13.28	Ecos	669	MI		Pilot Sport A/S	205/55R16		
333	P	215	60	16	94	S	380	B	B	10.0	OE	22	26.1	8.9	Yokohama	3	BF	Bridgestone	Insignia SE200	P215/60R16	001-301	OBX8E204305
334	N	235	45	17	94	W				10.0	REP			11.7	Yokohama	4	BF	Bridgestone	Potenza RE950	235/45R17	148-988	H40L DFA1403
335	P	205	65	15	92	H				11.0	REP			11.8	Yokohama	5	BF	Bridgestone	Turanza LSH	P205/65R15	109-770	OBURCJH1105
336	P	205	65	15	92	T	700	A	B	12.0	REP	25	25.6	12.2	Yokohama	6	BF	Bridgestone	Turanza LST	P205/65R15	109-185	EL9LMHH1905
337	P	225	60	16	97	H	180	B	A	10.0	OE			8.6	Yokohama	7	YOKO	Yokohama	Geolandar G035	P225/60R16	03502	FDA6NTD0805
338	P	195	55	15	84	V	200	B	A	9.0	OE			9.2	Yokohama	8	YOKO	Yokohama	Geolandar G046	P195/55R15	04601	FD8NNWE3405
339	P	215	60	16	94	H	200	B	A	10.0	OE			9.6	Yokohama	9	YOKO	Yokohama	Radial 376	P215/60R16	37658	FDJ1NTY4603
340	P	205	65	15	92	H	200	A	A	9.0	REP			9.4	Yokohama	10	YOKO	Yokohama	Radial 376	P205/65R15	37655	FD9LM3H0101
341	P	205	50	17	88	V	160	A	A	10.0	OE			9.7	Yokohama	11	YOKO	Yokohama	Advan A82A	P205/50R17	93202	FDH4NXF3105
342	N	225	50	17	94	W	160	A	A	10.0	OE			9.7	Yokohama	12	YOKO	Yokohama	Advan A10B	225/50R17	93205	FDJRNW30605
343	P	205	65	15	92	H	420	A	A	9.5	REP			10.4	Yokohama	13	YOKO	Yokohama	YK420	P205/65R15	31211	CC9L8WM3005
344	N	245	40	18	93	Y	160	A	A	10.0	OE			10.6	Yokohama	14	YOKO	Yokohama	Advan A10B	245/40R18	93206	FDJXNW24804
345	N	235	45	17	97	W	280	AA	A	10.0	REP			10.7	Yokohama	15	YOKO	Yokohama	ES100	235/45ZR17	10069	FDLNUM3505
346	P	225	60	16	98	T	700	A	B	12.0	REP			10.6	Yokohama	16	YOKO	Yokohama	Avid TRZ	P225/60R16	31621	CCA68XN4205
347	P	205	65	15	92	H	500	AA	A	10.0	REP	20	25.5	11.1	Yokohama	17	YOKO	Yokohama	Avid H4S	P205/65R15	31521	CC9L8XE3805
348	P	185	60	14	82	T	700	A	B	11.0	REP			11.0	Yokohama	18	YOKO	Yokohama	Avid TRZ	P185/60R14	31601	CCB08XP0105
349	P	205	65	15	92	T	700	A	B	12.0	REP			11.2	Yokohama	19	YOKO	Yokohama	Avid TRZ	P205/65R15	31610	CC9L8XP4705
350	N	225	50	16	92	W	280	AA	A	10.0	REP			11.3	Yokohama	20	YOKO	Yokohama	ES100	225/50ZR16	10065	FD8JNN33905
351	P	225	60	16	97	V	500	AA	A	10.0	REP	25	26.7	11.4	Yokohama	21	YOKO	Yokohama	Avid V4S	P225/60R16	31530	CCA68XD2805
352	P	185	65	14	85	S	180	A	B	9.0	OE			11.2	Yokohama	22	YOKO	Yokohama	Radial 376	P185/65R14	37618	FC06NH12304
353	P	185	65	14	85	H	420	A	A	10.0	REP			11.6	Yokohama	23	YOKO	Yokohama	YK420	P185/65R14	31204	CC068WM3805
354	P	195	60	15	87	H	420	A	A	10.0	REP			11.7	Yokohama	24	YOKO	Yokohama	YK420	P195/60R15	31206	CC898WM2505
355	P	185	60	14	82	H	280	AA	A	9.0	REP			11.9	Yokohama	25	YOKO	Yokohama	ES100	P185/60R14	10041	FCBONPH0305
356	P	185	60	14	82	H	500	AA	A	9.5	REP	17	22.8	12.0	Yokohama	26	YOKO	Yokohama	Avid H4S	P185/60R14	31509	CCB08W53905
357	P	195	60	15	87	H	500	AA	A	10.0	REP	19	24.3	12.0	Yokohama	27	YOKO	Yokohama	Avid H4S	P195/60R15	31514	CC898XE3105
358	P	205	50	16	87	H				11.0	OE		24.0	11.25	Pirelli	621	PIR	Pirelli	P6 Four Seasons	P205/50R16	1419900	
359	P	275	55	20	111	H					OE			8.92	Pirelli	624	PIR	Pirelli	Scorpion STR	P275/55R20	1555300	
360	P	275	45	22	112	V				11.0	OE	32		9.26	Pirelli	625	PIR	Pirelli	Scorpion Zero Asimetrico	P275/45R22	1549800	
361	P	255	70	18	112	H					OE			8.62	Pirelli	630	PIR	Pirelli	Scorpion STR - RBL	P255/70R18	1625500	
362	P	255	70	18	112	S					OE			8.74	Pirelli	631	PIR	Pirelli	Scorpion STR - ROWL	P255/70R18	1570100	
363	P	235	55	17	98	W				11.0	OE		27.0	9.85	Pirelli	632	PIR	Pirelli	P Zero Nero M+S	P235/55R17	1566100	
364	P	225	60	18	99	T				11.0	OE		28.8	9.03	Pirelli	633	PIR	Pirelli	P6 Four Season	P225/60R18	1572100	
365	P	225	60	17	98	V				11.0	OE		27.7	10.68	Pirelli	634	PIR	Pirelli	P6 Four Seasons	P225/60R17	1345800	
366	P	225	60	16	97	V				11.0	OE		26.7	10.38	Pirelli	635	PIR	Pirelli	P6 Four Seasons	P225/60R16	1121000	
367	P	225	55	18	97	T				11.0	OE		27.7	9.49	Pirelli	636	PIR	Pirelli	P6 Four Seasons	P225/55R18	1571900	
368	P	195	60	15	88	H				10.0	OE		24.3	11.84	Pirelli	637	PIR	Pirelli	P6 Four Seasons	P195/60R15	1387700	
369	P	225	50	17	94	V				11.0	OE		25.9	10.45	Pirelli	638	PIR	Pirelli	P6 Four Seasons	P225/50R17	1548000	
370	P	245	50	20	102	T					OE			9.34	Pirelli	639	PIR	Pirelli	Scorpion STR	P245/50R20	1724000	
371	N	265	40	22	106	W					REP			8.81	Pirelli	640	PIR	Pirelli	Scorpion Zero Asimmetrico	265/40R22	1694300	
372	N	305	45	22	118	W				11.0	REP	31		8.75	Pirelli	641	PIR	Pirelli	Scorpion Zero Asimmetrico	305/45R22	1549900	
373	N	305	35	24	112	W				11.0	REP	33		9.55	Pirelli	642	PIR	Pirelli	Scorpion Zero Asimmetrico	305/35R24	1561400	
374	N	265	35	22	102	W				11.0	REP	29		9.97	Pirelli	643	PIR	Pirelli	Scorpion Zero Asimmetrico	265/35R22	1486900	
375	P	245	45	17	95	W				11.0	REP		25.7	11.60	Pirelli	644	PIR	Pirelli	P Zero Nero M+S	P245/45R17	1436400	
376	P	195	60	15	87	T	700	A	B	12.0	REP	22	24.4	8.9	Bridgestone	645	BF	Bridgestone	Turanza LST	P195/60R15		
377	P	205	65	15	92	T	700	A	B	12.0	REP	25	25.6	8.8	Bridgestone	646	BF	Bridgestone	Turanza LST	P205/65R15		
378	P	225	60	16	97	T	700	A	B	12.0	REP	29	26.8	8	Bridgestone	647	BF	Bridgestone	Turanza LST	P225/60R16		
379	P	205	55	16	89	T	700	A	B	12.0	REP	25	25.0	9.5	Bridgestone	648	BF	Bridgestone	Turanza LST	P205/55R16		
380	N	195	60	15	91	H	460	A	A	11.0	REP	21	24.2	9.5	Bridgestone	649	BF	Bridgestone	Potenza G009	195/60R15		
381	N	225	60	15	96	H	460	A	A	11.0	REP	26	25.6	8.7	Bridgestone	650	BF	Bridgestone	Potenza G009	225/60R15		
382	N	225	50	16	92	H	460	A	A	11.0	REP	25	24.9	8.1	Bridgestone	651	BF	Bridgestone	Potenza G009	225/50R16		
383	N	205	55	16	91	H	460	A	A	11.0	REP	23	24.9	9.4	Bridgestone	652	BF	Bridgestone	Potenza G009	205/55R16		
384	P	235	75	15	105	T	700	A	B	12.0	REP		28.7	8.2	Bridgestone	653	BF	Bridgestone	Dueller Alenza HL	P235/75R15		
385	P	265	70	17	113	H	600	A	A	12.0	OE	40	31.7	6.2	Bridgestone	654	BF	Bridgestone	Dueller Alenza HL	P265/70R17		
386	P	225	70	16	101	T	700	A	B	12.0	REP	32	28.3	8.3	Bridgestone	655	BF	Bridgestone	Dueller Alenza HL	P225/70R16		
387	P	265	75	16	114	H	600	A	A	12.0	OE		31.5	6.7	Bridgestone	656	BF	Bridgestone	Dueller Alenza HL	P265/75R16		
388	P	215	75	15	100	S	460	A	B	13.0	REP	27	27.7	8.2	Bridgestone	657	BF	Firestone	Destination AT	P215/75R15		
389	P	235	75	15	105	S	460	A	B	13.0	REP	30	28.9	7.7	Bridgestone	658	BF	Firestone	Destination AT	P235/75R15		
390	P	265	75	16	114	S	460	A	B	13.0	REP	40	31.7	6.7	Bridgestone	659	BF	Firestone	Destination AT	P265/75R16		

sort#	Prefix or Tire Type	section width	aspect ratio	rim diam	Load Index	Speed Rating	Treadwear	Traction	Temp	Tread Depth	Market	average weight	average OD	avg RRC	Source	Group or other ID number	manufacturer	brand	model	Tire Size	Part number	serial number
391	P	275	55	20	111	S	700	B	B		OE			7.2	Bridgestone	660	BF	Bridgestone	Dueler Alenza HL	P275/55R20		
392	P	265	70	17	113	S	360	B	B		OE			7.3	Bridgestone	661	BF	Bridgestone	Dueler H/T 684II	P265/70R17		
393	P	225	60	16	97	S	380	B	B		OE			7.8	Bridgestone	662	BF	Bridgestone	Insignia SE200-2	P225/60R16		
394	P	215	55	17	93	V	260	A	A		OE			8.5	Bridgestone	663	BF	Bridgestone	Turanza EL400-02	P215/55R17		
395	P	215	60	16	94	S	380	B	B		OE			9.2	Bridgestone	664	BF	Bridgestone	Insignia SE200-2	P215/60R16		
396	P	195	65	15	89	H	300	A	A	10.0	OE	21	25.0	9	Bridgestone	665	BF	Bridgestone	Turanza EL41	P195/65R15		
397	P	255	45	18	99	Y	140	A	A		OE			9.2	Bridgestone	666	BF	Bridgestone	Potenza RE50A	P255/45R18		
398	P	235	65	16	101	S	360	B	B		OE			9.6	Bridgestone	667	BF	Bridgestone	Dueler H/T 684II	P235/65R16		
399	P	215	70	16	99	S	360	B	B		OE			9.4	Bridgestone	668	BF	Bridgestone	Dueler H/T 684II	P215/70R16		
400	P	255	55	20	107	H	440	A	A		OE			9.5	Bridgestone	669	BF	Bridgestone	Dueler H/L Alenza	P255/55R20		
401	P	265	65	18	112	S	360	B	B		OE			7.9	Bridgestone	670	BF	Bridgestone	Dueler H/T 684II	P265/65R18		
402	P	265	70	17	113	S	400	B	B	14.0	OE	41	31.9	8.2	Bridgestone	671	BF	Bridgestone	Dueler A/T RH-S	P265/70R17		
403	P	265	70	17	113	S	400	A	B		OE			8.3	Bridgestone	672	BF	Bridgestone	Dueler A/T 693II	P265/70R17		
404	P	265	65	17	110	S					OE			7.9	Bridgestone	673	BF	Bridgestone	Dueler H/T 840	P265/65R17		
405	P	205	60	16	91	V	300	A	A		OE			7.9	Bridgestone	674	BF	Bridgestone	Turanza EL41	P205/60R16		
406	P	225	60	17	98	T	300	A	A		OE			8	Bridgestone	675	BF	Bridgestone	Turanza EL42	P225/60R17		
407	P	205	65	15	92	S	360	B	B		OE			8.1	Bridgestone	676	BF	Bridgestone	B450	P205/65R15		
408	P	265	65	18	112	S	400	B	B	14.0	OE	42	31.5	8.2	Bridgestone	677	BF	Bridgestone	Dueler A/T RH-S	P265/65R18		
409	P	285	45	22	110	H	600	B	A		OE			8.5	Bridgestone	678	BF	Bridgestone	Dueler HL Alenza	P285/45R22		
410	P	225	55	17	95	V	260	A	A	10.0	OE	25	26.9	8.4	Bridgestone	679	BF	Bridgestone	Potenza RE 92A	P225/55R17		
411	P	245	75	17	110	S	400	A	B		OE			8.6	Bridgestone	680	BF	Bridgestone	Dueler A/T 693II	P245/75R17		
412	P	235	65	17	103	S	360	B	B		OE			9.2	Bridgestone	681	BF	Bridgestone	Dueler H/T 684II	P235/65R17		
413	P	235	45	17	93	W	260	A	A	10.0	OE	25	25.5	8.8	Bridgestone	682	BF	Bridgestone	Turanza EL 42	P235/45R17		
414	P	225	50	18	94	W	140	A	A		OE			9.6	Bridgestone	683	BF	Bridgestone	Potenza RE50A	P225/50R18		
415	P	205	55	16	89	H	260	A	A		OE			9.7	Bridgestone	684	BF	Bridgestone	Turanza EL 400-02	P205/55R16		
416	P	245	50	18	99	V	260	A	A		OE			9.7	Bridgestone	685	BF	Bridgestone	Turanza EL 400-02	P245/50R18		
417	P	225	60	18	99	H	260	A	A		OE			9.7	Bridgestone	686	BF	Bridgestone	Turanza EL 400-02	P225/60R18		
418	P	235	65	18	104	S	360	B	B		OE			9.8	Bridgestone	687	BF	Bridgestone	Dueler H/T 684II	P235/65R18		
419	P	235	65	17	103	T	300	A	A		OE			9.8	Bridgestone	688	BF	Bridgestone	Turanza EL 42	P235/65R17		
420	P	235	65	16	97	S	480	A	B		OE			9.1	Bridgestone	689	BF	Firestone	Destination LE	P235/65R16		
421	P	235	60	17	100	H	480	A	B	11.0	OE	28	28.3	9.3	Bridgestone	690	BF	Firestone	Destination LE	P235/60R17		
422	P	215	55	16	91	S	500	A	B		OE			9.7	Bridgestone	691	BF	Firestone	Affinity Touring S4	P215/55R16		
423	P	265	70	16	111	S	480	A	B	12.0	OE	36	30.6	8	Bridgestone	692	BF	Firestone	Wilderness LE	P265/70R16		
424	P	195	60	15	87	S	500	A	B		OE			9.5	Bridgestone	693	BF	Firestone	Affinity Touring S2	P195/60R15		
425	P	215	50	17	90	H	300	A	A		OE			10.1	Bridgestone	694	BF	Firestone	Firehawk GTA-03	P215/50R17		
426	P	235	75	16	106	S	460	A	B	13.0	OE	31	29.8	10.5	Bridgestone	695	BF	Firestone	Destination AT	P235/75R16		
427	P	225	60	18	99	V	340	AA	A	11.0	OE	33	28.6	11.7	Bridgestone	696	BF	Firestone	Firehawk GT Pursuit	P225/60R18		
428	P	185	60	14	82	H	300	A	A		OE			12.4	Bridgestone	697	BF	Firestone	Firehawk GTA	P185/60R14		
429	P	255	45	17	92	W	320	AA	A		REP			11.5	Bridgestone	698	BF	Firestone	Wide Oval	P255/45R17		
430	P	215	70	15	97	S	560	A	B	11.0	REP	23	26.9	10.4	Bridgestone	699	BF	Firestone	FR710	P215/70R15		
431	P	215	65	15	95	S	560	A	B		REP			9.9	Bridgestone	700	BF	Firestone	FR710	P215/65R15		
432	P	205	65	15	92	S	560	A	B		REP			9.7	Bridgestone	701	BF	Firestone	FR710	P205/65R15		
433	P	215	75	15	100	S	400	A	B	10.0	REP	23	27.7	12.8	Bridgestone	702	BF	Firestone	FR380	P215/75R15		
434	P	215	70	15	97	S	400	A	B	10.0	REP	22	26.9	10.6	Bridgestone	703	BF	Firestone	FR380	P215/70R15		
435	P	215	65	15	95	S	400	A	B	11.0	REP	22	26.0	10.9	Bridgestone	704	BF	Firestone	FR380	P215/65R15		
436	P	225	60	16	97	S	400	A	B	12.0	REP	24	26.6	11.7	Bridgestone	705	BF	Firestone	FR380	P225/60R16		
437	N	185	65	14	85	S	400	A	B	10.0	REP	16	23.5	8.8	Bridgestone	706	BF	Firestone	FR380	185/65R14		
438	P	235	75	15	105	S	480	A	B	12.0	REP		28.9	16.3	Bridgestone	707	BF	Firestone	Destination LE	P235/75R15		
439	P	245	75	16	109	S	480	A	B	13.0	REP		30.5	15.9	Bridgestone	708	BF	Firestone	Destination LE	P245/75R16		
440	P	265	70	17	113	S	480	A	B	13.0	REP		31.7	17.9	Bridgestone	709	BF	Firestone	Destination LE	P265/70R17		
441	N	205	55	16	91	W	140	AA	A	10.0	REP	23	24.9	10.8	Bridgestone	710	BF	Bridgestone	Potenza RE050A/PP	205/55R16		
442	N	245	45	17	95	Y	140	AA	A	10.0	REP	26	25.7	11.5	Bridgestone	711	BF	Bridgestone	Potenza RE050A/PP	245/45R17		
443	N	255	40	18	95	Y	140	AA	A	11.0	REP	28	26.1	11.2	Bridgestone	712	BF	Bridgestone	Potenza RE050A/PP	255/40R18		
444	N	275	30	20	97	W	140	AA	A	10.0	REP	30	26.6	11.2	Bridgestone	713	BF	Bridgestone	Potenza RE050A/PP	275/30R20		
445	N	245	45	17	95	W	400	AA	A	11.0	REP	28	25.7	11.9	Bridgestone	714	BF	Bridgestone	Potenza RE960/PP	245/45R17		
446	N	275	30	20	97	W	400	AA	A	11.0	REP	30	26.5	12.3	Bridgestone	715	BF	Bridgestone	Potenza RE960/PP	275/30R20		
447	P	185	65	14	85	S	560	A	B		REP			7.9	Bridgestone	716	BF	Bridgestone	Insignia SE200-2	P185/65R14		
448	P	235	75	15	105	S	560	A	B		REP			15.2	Bridgestone	717	BF	Bridgestone	Insignia SE200-2	P235/75R15		
449	P	225	60	16	97	S	560	A	B		REP			8.7	Bridgestone	718	BF	Bridgestone	Insignia SE200-2	P225/60R16		
450	P	205	65	15	92	S	560	A	B		REP			9.4	Bridgestone	719	BF	Bridgestone	Insignia SE200-2	P205/65R15		
451	P	205	65	15	92	H	400	A	A		REP			9.7	Bridgestone	720	BF	Bridgestone	Turanza EL 400-02	P205/65R15		
452	P	225	60	16	97	T	640	A	B		REP			10.6	Bridgestone	721	BF	Bridgestone	Turanza EL 400-02	P225/60R16		
453	N	215	55	16	93	H	400	A	A		REP			10.5	Bridgestone	722	BF	Bridgestone	Turanza EL 400-02	215/55R16		
454	N	205	55	16	91	V	400	AA	A		REP			10.5	Bridgestone	723	BF	Bridgestone	Turanza LS-V	205/55R16		
455	P	225	60	16	97	V	400	AA	A		REP			11.9	Bridgestone	724	BF	Bridgestone	Turanza LS-V	P225/60R16		

sort#	Prefix or Tire Type	section width	aspect ratio	rim diam	Load Index	Speed Rating	Treadwear	Traction	Temp	Tread Depth	Market	average weight	average OD	avg RRC	Source	Group or other ID number	manufacturer	brand	model	Tire Size	Part number	serial number
456	N	225	50	17	94	V	400	AA	A		REP			11.2	Bridgestone	725	BF	Bridgestone	Turanza LS-V	225/50R17		
457	P	245	70	15	105	S	520	A	B	12.0	REP		28.40	9.60	Cooper Tire	28	COOPER	Cooper	Discoverer H/T	P245/70R15		3D P9 C5U 0407
458	N	235	65	17	104	H	440	A	A	12.0	REP		29.06	9.98	Cooper Tire	29	COOPER	Cooper	Discoverer H/T	235/65R17		UP 81 C7B 1307
459	N	235	50	17	96	V	360	A	A		REP		26.30	10.34	Cooper Tire	30	COOPER	Mastercraft	Avenger LSR	235/50R17		UP 65 FM2 1307
460	N	245	35	20	95	W	280	AA	A	10.0	REP		26.76	11.63	Cooper Tire	31	COOPER	Cooper	Zeon 2XS	245/35ZR20		UP 7U C7L 1307
461	N	235	70	16	106	H	260	A	A		REP		28.86	11.11	Cooper Tire	39	COOPER	Cooper	Discoverer Sport HP	235/70R16		UP 4E C75 1307
462	N	245	40	18	97	W	400	AA	A	10.0	REP		25.72	10.65	Cooper Tire	40	COOPER	Cooper	Zeon Sport A/S	245/40R18		UP 2P C9C 1407
463	N	225	60	16	98	V	360	A	A		REP		26.56	10.18	Cooper Tire	41	COOPER	Cooper	Lifeline Touring SLE	225/60R16		UP X3 C6E 1407
464	N	225	60	16	98	V	360	A	A		REP		26.56	10.29	Cooper Tire	53	COOPER	Cooper	Lifeline Touring SLE	225/60R16		UP X3 C6E 1507
465	P	245	70	16	106	S	400	A	B	11.0	REP		29.38	10.52	Cooper Tire	42	COOPER	TBC	Stampede Radial A/S	P245/70R16		UP 9L TWN 1407
466	N	275	40	17	98	W	280	AA	A	10.0	REP		25.64	11.90	Cooper Tire	43	COOPER	Cooper	Zeon 2XS	275/40R17		UP X2 C7H 1407
467	N	255	65	16	109	H	260	A	A		REP		28.94	10.50	Cooper Tire	46	COOPER	Cooper	Discoverer Sport HP	255/65R16		UP 3X C75 1407
468	N	245	70	16	107	S	520	A	B		REP		29.60	10.44	Cooper Tire	47	COOPER	Dean	Wildcat Touring SLT	245/70R16		UP 9H DMU 1407
469	N	215	65	16	98	H	260	A	A		REP		27.19	11.17	Cooper Tire	50	COOPER	Cooper	Discoverer Sport HP	215/65R16		UP 6V C75 1507
470	P	245	75	16	109	S	520	A	B	13.5	REP		30.35	10.08	Cooper Tire	51	COOPER	Cooper	Discoverer H/T	P245/75R16		UP 70 C5U 1507
471	P	245	75	16	109	S	520	A	B	13.5	REP		30.35	10.30	Cooper Tire	581	COOPER	Cooper	Discoverer H/T	P245/75R16		UP 70 C5U 2107
472	P	225	70	16	101	S	520	A	B		REP		28.30	10.78	Cooper Tire	52	COOPER	Avon	Ranger TSE	P225/70R16		UP 5L AAM 1507
473	P	225	70	16	101	S	520	A	B		REP		28.40	10.70	Cooper Tire	598	COOPER	Avon	Ranger TSE	P225/70R16		UP 5L AAM 2207
474	N	245	45	17	95	W	400	AA	A	10.0	REP		25.65	10.30	Cooper Tire	55	COOPER	Cooper	Zeon Sport A/S	245/45R17		UP 8R C9B 1507
475	N	245	45	17	95	W	400	AA	A	10.0	REP		25.65	10.16	Cooper Tire	617	COOPER	Cooper	Zeon Sport A/S	245/45R17		UP 8R C9B 2507
476	N	275	40	18	99	W	400	AA	A	10.0	REP		26.66	10.10	Cooper Tire	57	COOPER	Cooper	Zeon Sport A/S	275/40R18		UP 20 C9B 1407
477	N	275	40	18	99	W	400	AA	A	10.0	REP		26.66	10.12	Cooper Tire	64	COOPER	Cooper	Zeon Sport A/S	275/40R18		UP 20 C9B 1607
478	N	275	40	18	99	W	400	AA	A	10.0	REP		26.66	9.95	Cooper Tire	594	COOPER	Cooper	Zeon Sport A/S	275/40R18		UP 20 C9B 2207
479	N	215	55	17	94	V	400	A	A	11.0	REP		26.37	10.48	Cooper Tire	58	COOPER	TBC	Sigma Regent Touring	215/55R17		UP 3R T1M 1507
480	N	245	40	20	95	W	280	AA	A		REP		27.70	11.24	Cooper Tire	59	COOPER	Cooper	Zeon 2XS	245/40R20		UP 5X C7H 1507
481	N	215	55	17	94	W	400	AA	A	10.0	REP		26.29	9.60	Cooper Tire	60	COOPER	Cooper	Zeon Sport A/S	215/55R17		UP 3R C9B 1507
482	N	215	55	17	94	W	400	AA	A	10.0	REP		26.29	10.09	Cooper Tire	586	COOPER	Cooper	Zeon Sport A/S	215/55R17		UP 3R C9B 2107
483	N	225	45	18	95	W	280	AA	A	10.0	REP		25.89	11.51	Cooper Tire	62	COOPER	Cooper	Zeon 2XS	225/45R18		UP 4F C7L 1607
484	N	215	55	17	94	W	360	AA	A		REP		26.28	10.07	Cooper Tire	65	COOPER	Avon	Tech M550	215/55R17		UP 3R ACE 1607
485	N	235	35	19	91	Y	280	AA	A		REP		25.30	12.25	Cooper Tire	66	COOPER	Avon	ZZ3	235/35R19		UP 2V AB5 1607
486	N	235	35	19	91	Y	280	AA	A		REP		25.31	12.38	Cooper Tire	618	COOPER	Avon	ZZ3	235/35R19		UP 2V AB5 2507
487	N	225	50	17	94	W	400	AA	A	10.0	REP		25.90	10.27	Cooper Tire	67	COOPER	Cooper	Zeon Sport A/S	225/50R17		UP 40 C9B 1607
488	N	225	50	17	94	W	400	AA	A	10.0	REP		25.90	10.18	Cooper Tire	556	COOPER	Cooper	Zeon Sport A/S	225/50R17		UP 40 C9B 1707
489	N	225	50	17	94	W	400	AA	A	10.0	REP		25.90	10.42	Cooper Tire	561	COOPER	Cooper	Zeon Sport A/S	225/50R17		UP 40 C9B 1807
490	N	225	40	18	92	W	400	AA	A	10.0	REP		25.07	10.54	Cooper Tire	548	COOPER	Cooper	Zeon Sport A/S	225/40R18		UP 5N C9C 1607
491	P	245	75	16	109	S	400	A	B	11.0	REP		30.20	10.05	Cooper Tire	549	COOPER	TBC	Stampede Radial A/S	P245/75R16		UP 70 TWN 1607
492	N	225	50	17	94	V	360	A	A	11.0	REP		25.89	11.00	Cooper Tire	550	COOPER	Hercules	Ultra Touring	225/50R17		UP 40 HU6 1707
493	N	235	70	16	106	S	400	A	B		REP		28.73	10.57	Cooper Tire	551	COOPER	Dean	Trailcat All Season	235/70R16		UP 4E DMT 1707
494	N	215	45	17	91	W	400	AA	A	10.0	REP		24.75	10.94	Cooper Tire	552	COOPER	Cooper	Zeon Sport A/S	215/45R17		UP 63 C9C 1707
495	N	235	45	17	94	W	400	AA	A	10.0	REP		25.35	10.64	Cooper Tire	553	COOPER	Cooper	Zeon Sport A/S	235/45R17		UP 8P C9B 1707
496	N	235	45	17	94	W	400	AA	A	10.0	REP		25.35	11.05	Cooper Tire	602	COOPER	Cooper	Zeon Sport A/S	235/45R17		UP 8P C9B 2307
497	N	225	45	17	94	W	400	AA	A	10.0	REP		24.91	10.57	Cooper Tire	558	COOPER	Cooper	Zeon Sport A/S	225/45R17		UP 7R C9C 1707
498	N	215	50	17	91	V	360	A	A		REP		25.46	11.15	Cooper Tire	559	COOPER	Treadways	Tempura Touring VR	215/50R17		UP 6A EM5 1707
499	N	225	50	17	94	V	360	A	A	11.0	REP		25.89	11.18	Cooper Tire	560	COOPER	Mastercraft	Avenger LSR	225/50R17		UP 40 FM2 1807
500	N	235	55	17	99	H	420	A	A		REP		27.15	9.82	Cooper Tire	563	COOPER	Sure Tire	Summit Premium Plus II	235/55R17		UP 7A UF9 1807
501	N	275	55	17	109	V	260	A	A		REP		29.05	10.87	Cooper Tire	565	COOPER	Cooper	Discoverer Sport HP	275/55R17		UP VJ C7E 1907
502	N	245	45	18	96	W	400	AA	A	10.0	REP		26.65	9.95	Cooper Tire	567	COOPER	Cooper	Zeon Sport A/S	245/45R18		UP 8U C9B 1907
503	N	255	70	16	111	S	520	A	B		REP		29.95	10.50	Cooper Tire	568	COOPER	Dean	Wildcat Touring SLT	255/70R16		UP 0K DMU 1907
504	P	265	75	16	114	S	520	A	B	14.0	REP		31.50	10.42	Cooper Tire	569	COOPER	Cooper	Discoverer H/T	P265/75R16		UP 73 C5U 1907
505	N	255	45	17	98	W	280	AA	A	10.0	REP		26.03	11.63	Cooper Tire	571	COOPER	Cooper	Zeon 2XS	255/45R17		UP VM C7H 1907
506	P	265	70	17	113	S	460	A	B		REP		31.54	10.31	Cooper Tire	572	COOPER	Dominator	Sport A/T	P265/70R17		UP T6 XBR 1907
507	N	225	55	17	97	T	620	A	B		REP		26.87	9.81	Cooper Tire	574	COOPER	TBC	Cyclone Ultra Tour	225/55R17		UP 00 T8P 2007
508	N	245	65	17	107	S	520	A	B		REP		29.67	10.97	Cooper Tire	576	COOPER	Dean	Wildcat Touring SLT	245/65R17		UP 15 DMU 2007
509	N	245	70	16	107	H	260	A	A		REP		29.41	10.87	Cooper Tire	577	COOPER	Cooper	Discoverer Sport HP	245/70R16		UP 9H C75 2007
510	N	235	50	17	96	V	360	A	A		REP		26.34	10.36	Cooper Tire	579	COOPER	ACCC	American Platinum	235/50R17		UP 65 XHE 2007
511	N	235	65	17	107	S	520	A	B	12.0	REP		29.06	10.13	Cooper Tire	580	COOPER	Cooper	Discoverer H/T	235/65R17		UP 81 C56 2007
512	N	235	55	17	99	W	400	AA	A	10.0	REP		27.13	9.42	Cooper Tire	587	COOPER	Cooper	Zeon Sport A/S	235/55R17		UP 7A C9B 2107
513	N	235	55	17	99	W	400	AA	A	10.0	REP		27.13	9.71	Cooper Tire	596	COOPER	Cooper	Zeon Sport A/S	235/55R17		UP 7A C9B 2207
514	N	245	45	17	95	W	280	AA	A	10.0	REP		25.62	11.43	Cooper Tire	589	COOPER	Cooper	Zeon 2XS	245/45R17		UP 8R C7H 2107
515	N	215	70	16	100	S	540	A	B		REP		27.82	10.97	Cooper Tire	590	COOPER	TBC	Cyclone Radial SUV	215/70R16		UP DA T8M 2107
516	N	245	45	18	100	W	280	AA	A	10.0	REP		26.62	11.06	Cooper Tire	591	COOPER	Cooper	Zeon 2XS	245/45R18		UP 8U C7L 2107
517	P	245	75	16	109	S	400	A	B		REP		30.25	10.72	Cooper Tire	592	COOPER	TBC	Big O R/T Pathmax	P245/75R16		UP 70 TXE 2207
518	N	225	45	18	91	W	400	AA	A	10.0	REP		25.91	10.37	Cooper Tire	593	COOPER	Cooper	Zeon Sport A/S	225/45R18		UP 4F C9B 2207
519	N	225	55	17	97	V	400	A	A	11.0	REP		26.85	10.59	Cooper Tire	595	COOPER	TBC	Multi-Mile Grand Tour SLI	225/55R17		UP 00 T54 2207
520	N	275	40	18	99	W	280	AA	A	10.0	REP		26.64	10.92	Cooper Tire	599	COOPER	Cooper	Zeon 2XS	275/40R18		UP 20 C9J 2207

sort#	Prefix or Tire Type	section width	aspect ratio	rim diam	Load Index	Speed Rating	Treadwear	Traction	Temp	Tread Depth	Market	average weight	average OD	avg RRC	Source	Group or other ID number	manufacturer	brand	model	Tire Size	Part number	serial number
521	N	265	70	15	112	H	260	A	A		REP		29.50	10.60	Cooper Tire	601	COOPER	Avon	Ranger	265/70R15		UP BM ABM 2307
522	N	265	70	16	112	S	520	A	B		REP		30.40	10.54	Cooper Tire	603	COOPER	Dean	Wildcat Touring SLT	265/70R16		UP C2 DMU 2307
523	P	265	75	16	114	S	520	A	B		REP		31.65	10.52	Cooper Tire	607	COOPER	Pep Boys	Definity Dakota H/T	P265/75R16		UP 73 PA7 2307
524	N	255	45	18	103	W	400	AA	A	10.0	REP		27.03	9.30	Cooper Tire	608	COOPER	Cooper	Zeon Sport A/S	255/45R18		UP MC C9H 2307
525	N	245	40	18	97	W	360	AA	A		REP		25.70	10.48	Cooper Tire	609	COOPER	Avon	Tech M550	245/40R18		UP 2P AFC 2407
526	P	275	60	17	110	S	540	A	B	12.0	REP		30.11	10.31	Cooper Tire	614	COOPER	TBC	Wild Spirit Radial SUV	P275/60R17		UP T0 TX7 2407
527	N	255	35	20	97	W	280	AA	A	10.0	REP		26.97	11.37	Cooper Tire	615	COOPER	Cooper	Zeon 2XS	255/35R20		UP 5V C7L 2407
528	P	225	60	16	97	S	460	A	B		OE		26.61	7.58	GOODYEAR	SR286-162	GY	GOODYEAR	Integrity	P225/60R16		M6X0E6DR2705
529	P	225	60	16	97	S	360	A	B		OE		26.61	9.11	GOODYEAR	SR286-160	GY	GOODYEAR	Eagle LS	P225/60R16		M6X0BMWR2505
530	P	225	60	16	97	T	680	A	B	11.0	REP	24	26.61	10.63	GOODYEAR	SR286-29	GY	GOODYEAR	Regatta 2	P225/60R16		MDX0NTO3105
531	P	225	60	16	97	H	440	A	A	11.0	REP	24	26.61	12.17	GOODYEAR	SR286-21	GY	GOODYEAR	Eagle GT HR	P225/60R16		MKX0RHHR2605
532	P	195	65	15	89	S	460	A	B		OE		25.00	9.55	GOODYEAR	SR286-161	GY	GOODYEAR	Integrity	P195/65R15		M6C6B30R3405
533	P	195	65	15	89	T	700	A	B	11.0	REP	19	25.00	11.39	GOODYEAR	SR286-20	GY	GOODYEAR	ComforTred	P195/65R15		M6C618HR2205
534	P	195	65	15	89	T	560	A	B	11.0	REP	20	25.00	12.53	GOODYEAR	SR286-28	GY	GOODYEAR	Regatta 2	P195/65R15		MDC6NTHR2205
535	P	175	65	14	81	S	460	A	B	9.0	REP	14	22.99	11.60	GOODYEAR	SR286-22	GY	GOODYEAR	Integrity	P175/65R14		M68JB3HR2005
536	P	185	65	14	85	S	460	A	B	10.0	REP	15	23.46	12.78	GOODYEAR	SR286-23	GY	GOODYEAR	Integrity	P185/65R14		M67JB3HR3405
537	P	195	70	14	90	S	460	A	B	10.0	REP	16	24.80	9.87	GOODYEAR	SR286-24	GY	GOODYEAR	Integrity	P195/70R14		PDRW1MHR2405
538	P	205	70	15	95	S	460	A	B	11.0	REP	21	26.34	9.65	GOODYEAR	SR286-26	GY	GOODYEAR	Integrity	P205/70R15		PDM01MHR2505
539	P	215	70	15	97	S	460	A	B	11.0	REP	23	26.89	9.93	GOODYEAR	SR286-25	GY	GOODYEAR	Integrity	P215/70R15		PDM31MHR3205
540	P	225	70	16	101	S	460	A	B	10.0	REP	25	28.43	8.89	GOODYEAR	SR286-27	GY	GOODYEAR	Integrity	P225/70R16		M65LB3HR2205
541	P	225	60	16	97	S	600	A	B	10.0	REP		26.50	8.7	Michelin	81	MI	MICHELIN	SYMMETRY	P225/60R16 SYMMETRY GNX WW697S	98499	
542	N	205	55	16	91	H	400	A	A	10.0	REP		24.90	9.7	Michelin	82	MI	MICHELIN	MXV4 (H)	205/55R16 EN MXV4 PLUS XSE 91H	79258	
543	N	235	65	16	103	T	500	A	B	10.0	OE		27.90	8.5	Michelin	83	MI	MICHELIN	ENERGY LX4	235/65R16 ENERGY LX4 HON1785	95649	
544	P	205	65	15	92	H	440	A	A	10.0	OE		25.60	9.2	Michelin	84	MI	MICHELIN	MXV4 (H)	P205/65R15 ENMXV4 S8 HON1607	75548	
545	P	225	60	16	97	T	500	A	A	10.0	OE		26.60	8.5	Michelin	85	MI	MICHELIN	ENERGY LX4	P225/60R16 EN.LX4 FOR0340	46562	
546	N	225	60	16	98	T	600	A	A	10.0	REP		26.50	8.5	Michelin	86	MI	MICHELIN	SYMMETRY	225/60R16 SYMMETRY 98T	85237	
547	N	215	55	16	93	H					REP			9.6	Michelin	87	MI	MICHELIN	MXV4 (H)	215/55R16 EN MXV4 PLUS XSE 93H		
548	P	225	60	16	97	T	500	A	A	10.0	OE		26.70	8.5	Michelin	88	MI	MICHELIN	ENERGY LX4	P225/60R16 EN LX4 FOR0938	94213	
549	N	205	55	16	91	H	440	A	A	9.5	OE		25.10	10.7	Michelin	89	MI	MICHELIN	MXV4 (H)	205/55R16 91H ENMXV4S8 VWG0390	89947	
550	N	195	65	15	91	H					REP			8.6	Michelin	90	MI	MICHELIN	MXV4 (H)	195/65R1591H ENER.MXV4 PL		
551	P	215	70	15	97	S	600	A	B	10.0	REP		26.70	9.1	Michelin	91	MI	MICHELIN	SYMMETRY	P215/70R15 SYMMETRY WW11 97S	78607	
552	N	205	55	16	91	H	400	A	A	10.0	REP		24.90	9.7	Michelin	92	MI	MICHELIN	MXV4 (H)	205/55R16 EN MXV4 PLUS XSE 91H	79258	
553	P	205	60	16	91	H					REP			9.4	Michelin	93	MI	MICHELIN	MXV4 (H)	P205/60R16 91H EN.MXV4 PL XSE		
554	P	205	60	16	91	H					REP			9.4	Michelin	94	MI	MICHELIN	MXV4 (H)	P205/60R16 91H EN.MXV4 PL XSE		
555	P	225	60	16	97	S	600	A	B	10.0	REP		26.50	7.4	Michelin	95	MI	MICHELIN	SYMMETRY	P225/60R16 97S SYMMETRY	43798	
556	P	225	60	16	97	S	740	A	B	10.0	REP		26.40	9.8	Michelin	96	MI	MICHELIN	MICHELIN X RADIAL DT	P225/60R16 97S X RADIAL DT	17457	
557	N	205	65	15	94	H					REP			9.1	Michelin	97	MI	MICHELIN	MXV4 (H)	205/65R15 EN MXV4 PLUS XSE 94H		
558	P	195	65	15	89	H					REP			8.4	Michelin	98	MI	MICHELIN	MXV4 (H)	P195/65R15 EN MXV4 PLUS XSE89H		
559	P	195	70	14	90	S	740	A	B	10.0	REP		24.50	10.1	Michelin	99	MI	MICHELIN	MICHELIN X RADIAL DT	P195/70R14 90S X RAD DT	29698	
560	P	185	65	14	85	S	740	A	B	10.0	REP		23.40	9.7	Michelin	100	MI	MICHELIN	MICHELIN X RADIAL DT	P185/65R14 85S X RAD DT	34385	
561	P	225	60	16	97	S	740	A	B	11.0	REP		26.40	9.6	Michelin	101	MI	MICHELIN	MICHELIN HARMONY	P225/60R16 97S HARMONY	24403	
562	P	225	60	16	97	S	740	A	B	11.0	REP		26.40	9.6	Michelin	102	MI	MICHELIN	MICHELIN HARMONY	P225/60R16 97S HARMONY	24403	
563	P	225	60	16	97	S	460	A	B	10.0	OE		26.80	6.5	Michelin	103	MI	MICHELIN	SYMMETRY	P225/60R16 97S SYMMETRYGM0199C	32333	
564	N	235	65	16	103	T	500	A	B	10.0	OE		27.90	9.5	Michelin	104	MI	MICHELIN	ENERGY LX4	235/65R16 EN LX4 HON1688 ECE	95649	
565	P	225	60	16	97	T	800	A	B	11.0	REP		26.50	9.2	Michelin	105	MI	MICHELIN	MICHELIN HYDROEDGE	P225/60R16 HYDROEDGE 97T XSE	48852	
566	P	205	70	15	95	S	740	A	B	10.0	REP		26.10	11.5	Michelin	106	MI	MICHELIN	MICHELIN X RADIAL DT	P205/70R15 95S X RAD DT	25498	
567	N	205	55	16	91	H	400	A	A	10.0	OE		24.90	9.0	Michelin	107	MI	MICHELIN	MXV4 (H)	205/55R16 EN.MXV4PL VWG099/100	71970	
568	N	215	65	16	98	S	740	A	B	10.0	REP		26.80	9.0	Michelin	108	MI	MICHELIN	MICHELIN X RADIAL DT	215/65R16 X RAD DT 98S	84224	
569	N	225	60	16	98	T	600	A	A	10.0	REP		26.50	8.5	Michelin	109	MI	MICHELIN	SYMMETRY	225/60R16 SYMMETRY 98T	85237	
570	N	195	60	15	88	H					REP			9.3	Michelin	110	MI	MICHELIN	MXV4 (H)	195/60R15 EN MXV4 PLUS XSE 88H		
571	P	215	65	16	96	T	500	A	B	10.0	OE		27.00	7.9	Michelin	111	MI	MICHELIN	ENERGY LX4	P215/65R16 EN LX4 96T TOY1454	74735	
572	P	185	70	14	87	S	740	A	B	10.0	REP		24.00	10.5	Michelin	112	MI	MICHELIN	MICHELIN X RADIAL DT	P185/70R14 87S X RAD DT	8663	
573	P	215	70	15	97	S	740	A	B	10.0	REP		26.60	9.7	Michelin	113	MI	MICHELIN	MICHELIN X RADIAL DT	P215/70R15 97S X RAD DT	8191	
574	P	205	70	15	95	S	600	A	B	10.0	REP		25.80	9.4	Michelin	114	MI	MICHELIN	SYMMETRY	P205/70R15 SYMMETRY WW 95S	51587	
575	P	225	60	16	97	H					REP			10.9	Michelin	115	MI	MICHELIN	MXV4 (H)	P225/60R16 EN MXV4 PLUS XSE97H		
576	P	225	60	16	97	H					REP			10.9	Michelin	116	MI	MICHELIN	MXV4 (H)	P225/60R16 EN MXV4 PLUS XSE97H		
577	P	225	60	16	97	S	600	A	B	10.0	REP		26.50	8.9	Michelin	117	MI	MICHELIN	SYMMETRY	P225/60 R16 97S SYMMETRY	43798	
578	P	225	60	16	97	S	600	A	B	10.0	REP		26.50	8.9	Michelin	118	MI	MICHELIN	SYMMETRY	P225/60 R16 97S SYMMETRY	43798	
579	P	205	65	15	92	T	600	A	B	10.0	REP		25.60	9.7	Michelin	119	MI	MICHELIN	SYMMETRY	P205/65R15 SYMMETRY 92T	43086	
580	P	175	70	13	82	S	740	A	B	10.0	REP		22.40	11.7	Michelin	120	MI	MICHELIN	MICHELIN X RADIAL DT	P175/70R13 82S X RAD DT	7223	
581	P	215	70	15	97	S	740	A	B	11.0	REP		26.60	10.0	Michelin	121	MI	MICHELIN	MICHELIN HARMONY	P215/70R15 97S HARMONY TL	29325	
582	P	205	65	15	92	T	740	A	B	10.0	REP		25.30	11.7	Michelin	122	MI	MICHELIN	WEATHERWISE	P205/65R15 WEATHERWISE 92T	10059	
583	P	205	65	15	92	S	740	A	B	11.0	REP		25.40	10.3	Michelin	123	MI	MICHELIN	MICHELIN HARMONY	P205/65R15 HARMONY 92S	83556	
584	P	215	65	16	96	T	600	A	B	10.0	REP		26.80	9.2	Michelin	124	MI	MICHELIN	SYMMETRY	P215/65R16 SYMMETRY GRNX 96T	67990	
585	P	205	65	15	92	S	740	A	B	10.0	REP		25.30	9.9	Michelin	125	MI	MICHELIN	MICHELIN X RADIAL DT	P205/65R15 92S X RAD DT	24474	

sort#	Prefix or Tire Type	section width	aspect ratio	rim diam	Load Index	Speed Rating	Treadwear	Traction	Temp	Tread Depth	Market	average weight	average OD	avg RRC	Source	Group or other ID number	manufacturer	brand	model	Tire Size	Part number	serial number
586	P	225	60	16	97	S	600	A	B	10.0	OE		26.50	9.0	Michelin	126	MI	MICHELIN	SYMMETRY	P225/60R16 SYMMETRYGRNX97SFD	98499	
587	P	225	60	17	98	T	500	A	A	10.5	OE		27.60	9.4	Michelin	127	MI	MICHELIN	ENERGY LX4	P225/60R17 EN LX4 XSE 98T FD	67844	
588	P	205	70	15	95	S	740	A	B	11.0	REP		26.10	12.1	Michelin	128	MI	MICHELIN	MICHELIN HARMONY	P205/70R15 95S HARMONY TL	23967	
589	N	235	60	16	100	H					REP			9.3	Michelin	129	MI	MICHELIN	MXV4 (H)	235/60R16 EN MXV4 PLUS XSE100H		
590	P	215	65	15	95	S	740	A	B	10.0	REP		25.80	9.5	Michelin	130	MI	MICHELIN	MICHELIN X RADIAL DT	P215/65R15 95S X RAD DT	21894	
591	N	205	60	15	91	H					REP			9.4	Michelin	131	MI	MICHELIN	MXV4 (H)	205/60R15 EN MXV4 PLUS XSE 91H		
592	P	225	55	17	95	H	400	A	A	10.0	REP		26.80	10.2	Michelin	132	MI	MICHELIN	MXV4 (H)	P225/55R17 95H EN MXV4 PL XSE	93496	
593	N	195	65	15	91	H	440	A	A	9.5	OE		25.10	10.0	Michelin	133	MI	MICHELIN	MXV4 (H)	195/65R15 91H ENMXV4S8 VWG0389	71716	
594	P	195	65	15	89	S	740	A	B	11.0	REP		24.80	9.9	Michelin	134	MI	MICHELIN	MICHELIN HARMONY	P195/65R15 HARMONY 89S	14492	
595	N	215	65	16	98	S	740	A	B	11.0	REP		26.80	9.4	Michelin	135	MI	MICHELIN	MICHELIN HARMONY	215/65R16 HARMONY 98S	32229	
596	N	205	65	15	94	H	400	A	A	10.5	REP		25.50	10.5	Michelin	136	MI	MICHELIN	PILOT EXALTO A/S	205/65R15 94H PILOT EXALTO A/S	18569	
597	P	205	65	15	92	T	800	A	B	11.0	REP		25.30	10.0	Michelin	137	MI	MICHELIN	MICHELIN HYDROEDGE	P205/65R15 HYDROEDGE 92T	84218	
598	N	235	65	16	103	T	500	A	B	10.0	REP		27.90	9.8	Michelin	138	MI	MICHELIN	ENERGY LX4	235/65R16 103T ENERGY LX4	95649	
599	N	215	65	16	98	S					REP			8.5	Michelin	139	MI	MICHELIN	MX4	215/65R16 MX4 98S		
600	P	225	60	17	98	T	500	A	A	10.5	OE		27.60	9.6	Michelin	140	MI	MICHELIN	ENERGY LX4	P225/60R17 EN LX4 WW XSE 98TFD	94860	
601	N	215	65	16	98	T	800	A	B	11.0	REP		26.80	9.5	Michelin	141	MI	MICHELIN	MICHELIN HYDROEDGE	215/65R16 HYDROEDGE 98T	81152	
602	P	215	70	15	97	S	740	A	B	10.0	REP		26.60	9.8	Michelin	142	MI	MICHELIN	WEATHERWISE	P215/70R15 WEATHERWISE WW1697S	27453	
603	N	225	70	16	107	T	600	A	B	10.0	REP		28.40	8.8	Michelin	143	MI	MICHELIN	SYMMETRY	225/70R16 107T SYMMETRY WW RF	70891	
604	P	215	70	15	97	T	800	A	B	11.0	REP		26.60	10.0	Michelin	144	MI	MICHELIN	MICHELIN HYDROEDGE	P215/70R15 HYDROEDGE 97T	15059	
605	P	205	65	15	92	H					REP			12.7	Michelin	145	MI	MICHELIN	XGTH4	P205/65R15 PILOT XGTH4 92H		
606	P	205	75	15	97	S	740	A	B	10.0	REP		26.80	10.2	Michelin	146	MI	MICHELIN	MICHELIN X RADIAL DT	P205/75R15 97S X RAD DT	14729	
607	N	195	65	15	91	H	400	A	A	10.5	REP		25.00	10.9	Michelin	147	MI	MICHELIN	PILOT EXALTO A/S	195/65R15 91H PILOT EXALTO A/S	16529	
608	P	205	70	15	95	S	740	A	B	10.0	REP		26.10	10.7	Michelin	148	MI	MICHELIN	A	P205/70R15 WEATHERWISE FB1695S	36114	
609	P	195	65	15	89	S	740	A	B	10.0	REP		24.70	9.4	Michelin	149	MI	MICHELIN	MICHELIN X RADIAL DT	P195/65R15 89S X RAD DT	18459	
610	P	185	65	14	85	S	740	A	B	11.0	REP		23.40	10.9	Michelin	150	MI	MICHELIN	MICHELIN HARMONY	P185/65R14 HARMONY 85S	9896	
611	P	215	75	15	100	S	740	A	B	10.0	REP		27.30	9.5	Michelin	151	MI	MICHELIN	MICHELIN X RADIAL DT	P215/75R15 X RAD DT 100S	3825	
612	P	195	70	14	90	S	740	A	B	11.0	REP		24.60	10.5	Michelin	152	MI	MICHELIN	MICHELIN HARMONY	P195/70R14 HARMONY 90S	12013	
613	P	195	65	15	89	T	800	A	B	11.0	REP		24.70	10.5	Michelin	153	MI	MICHELIN	MICHELIN HYDROEDGE	P195/65R15 HYDROEDGE 89T XSE	91261	
614	N	205	55	16	91	H	400	A	A	10.0	OE		24.90	10.2	Michelin	154	MI	MICHELIN	MXV4 (H)	205/55R16 ENMXV4PL DT GMO0627	71970	
615	P	175	70	13	82	S	740	A	B	11.0	REP		22.50	12.1	Michelin	155	MI	MICHELIN	MICHELIN HARMONY	P175/70R13 HARMONY 82S	4483	
616	P	235	55	17	98	H	400	A	A	10.0	REP		27.20	9.3	Michelin	156	MI	MICHELIN	MXV4 (H)	P235/55R17 EN MXV4 PLUS 98H	89205	
617	P	225	60	17	98	T	500	A	A	10.5	REP		27.60	8.2	Michelin	157	MI	MICHELIN	ENERGY LX4	P225/60R17 EN LX4 XSE 98T	67844	
618	N	225	55	17	97	H					REP			8.8	Michelin	158	MI	MICHELIN	MXV4 (H)	225/55R17 EN MXV4 PLUS XSE 97H		
619	N	215	60	16	95	Q				11.0	REP		26.10	9.3	Michelin	159	MI	MICHELIN	MICHELIN X-ICE	215/60R16 95Q X-ICE BW	78898	
620	P	195	65	15	89	H					REP			12.6	Michelin	160	MI	MICHELIN	XGTH4	P195/65R15 PILOT XGTH4 89H		
621	P	195	60	15	87	H					REP			13.0	Michelin	161	MI	MICHELIN	XGTH4	P195/60R15 PILOT XGTH4 87H		
622	P	205	75	14	95	S	740	A	B	10.0	REP		25.80	10.4	Michelin	162	MI	MICHELIN	MICHELIN X RADIAL DT	P205/75R14 X RAD DT 95S	987	
623	P	215	60	16	94	S	740	A	B	11.0	REP		26.00	9.4	Michelin	163	MI	MICHELIN	MICHELIN HARMONY	P215/60R16 HARMONY 94S	5732	
624	P	225	60	17	98	T	500	A	A	10.5	REP		27.60	8.2	Michelin	164	MI	MICHELIN	ENERGY LX4	P225/60R17 EN LX4 WW XSE 98T	94860	
625	N	195	65	15	91	Q				11.0	REP		25.00	9.5	Michelin	165	MI	MICHELIN	MICHELIN X-ICE	195/65R15 91Q X-ICE BW	34409	
626	P	225	55	17	95	T	800	A	B	11.0	REP		26.60	9.2	Michelin	166	MI	MICHELIN	MICHELIN HYDROEDGE	P225/55R17 HYDROEDGE 95T	76712	
627	P	225	60	16	97	S	740	A	B	11.0	REP		26.40	9.7	Michelin	167	MI	MICHELIN	MICHELIN DESTINY	P225/60R16 97S DESTINY	17535	
628	P	205	70	15	95	T	800	A	B	11.0	REP		26.10	10.2	Michelin	168	MI	MICHELIN	11/32"	P205/70R15 HYDROEDGE 95T	40433	
629	P	225	60	16	97	H					REP			10.8	Michelin	169	MI	MICHELIN	XGTH4	P225/60R16 PILOT XGTH4 97H		
630	P	185	65	14	85	T	800	A	B	11.0	REP		23.30	10.8	Michelin	170	MI	MICHELIN	MICHELIN HYDROEDGE	P185/65R14 HYDROEDGE 85T	52599	
631	P	205	55	16	89	T	800	A	B	11.0	REP		24.80	10.7	Michelin	171	MI	MICHELIN	MICHELIN HYDROEDGE	P205/55R16 HYDROEDGE 89T	41008	
632	P	195	65	15	89	S	600	A	B	10.0	REP		25.30	9.2	Michelin	172	MI	MICHELIN	SYMMETRY	P195/65R15 SYMMETRY 89S	97683	
633	N	225	55	16	95	H	400	A	A	10.0	REP		25.90	9.6	Michelin	173	MI	MICHELIN	MXV4 (H)	225/55R16 95H EN MXV4 PLUS DT	87064	
634	P	205	60	15	90	H					REP			12.3	Michelin	174	MI	MICHELIN	XGTH4	P205/60R15 PILOT XGTH4 90H		
635	P	205	60	15	90	H					REP			12.3	Michelin	175	MI	MICHELIN	XGTH4	P205/60R15 PILOT XGTH4 90H		
636	P	225	55	16	94	H					REP			11.9	Michelin	176	MI	MICHELIN	XGTH4	P225/55R16 PILOT XGTH4 94H		
637	N	205	55	16	91	H	400	A	A	10.5	REP		24.80	11.6	Michelin	177	MI	MICHELIN	PILOT EXALTO A/S	205/55R16 91H PILOT EXALTO A/S	29192	
638	N	205	55	16	91	H	400	A	A	10.0	REP		24.90	10.3	Michelin	178	MI	MICHELIN	MXV4 (H)	205/55R16 EN MXV4 PLUS* XSE91H	79258	
639	P	185	65	15	86	T	740	A	B	10.0	REP		24.40	10.9	Michelin	179	MI	MICHELIN	MICHELIN X RADIAL DT	P185/65R15 86T X RAD DT	25649	
640	P	205	55	16	89	H					REP			12.6	Michelin	180	MI	MICHELIN	XGTH4	P205/55R16 PILOT XGTH4 89H		
641	N	195	70	14	91	T					REP			10.0	Michelin	181	MI	MICHELIN	WEATHERWISE SPORT	195/70R14 WEATHERWISE SPRT 91T		
642	P	185	70	14	87	S	740	A	B	11.0	REP		24.10	10.6	Michelin	182	MI	MICHELIN	MICHELIN HARMONY	P185/70R14 87S HARMONY TL	32201	
643	P	225	55	17	95	H	400	A	A	10.0	OE		26.80	10.0	Michelin	183	MI	MICHELIN	MXV4 (H)	P225/55R17 EN MXV4+ XSE/GNX GM	93496	
644	N	225	45	17	90	H	300	A	A	10.0	REP		24.80	11.3	Michelin	184	MI	MICHELIN	PILOT MXM4 (H)	225/45R17 90H PILOT HX MXM4 TL	50248	
645	P	235	60	16	99	T	600	A	B	10.0	REP		27.20	10.1	Michelin	185	MI	MICHELIN	SYMMETRY	P235/60R16 SYMMETRY GNX 99T	82808	
646	P	185	65	15	86	S	740	A	B	11.0	REP		24.50	10.9	Michelin	186	MI	MICHELIN	MICHELIN HARMONY	P185/65R15 HARMONY 86S	99066	
647	N	195	60	15	88	H	400	A	A	10.5	REP		25.00	11.0	Michelin	187	MI	MICHELIN	PILOT EXALTO A/S	195/60R15 88H PILOT EXALTO A/S	7374	
648	P	205	55	16	89	S	740	A	B	11.0	REP		24.80	11.8	Michelin	188	MI	MICHELIN	MICHELIN HARMONY	P205/55R16 HARMONY 89S	4293	
649	P	225	60	16	97	S					REP			9.3	Michelin	189	MI	MICHELIN	MICHELIN AGILITY	P225/60R16 97S AGILITY TRG		
650	N	205	60	15	91	H	400	A	A	10.5	REP		24.50	11.8	Michelin	190	MI	MICHELIN	PILOT EXALTO A/S	205/60R15 91H PILOT EXALTO A/S	27549	

sort#	Prefix or Tire Type	section width	aspect ratio	rim diam	Load Index	Speed Rating	Treadwear	Traction	Temp	Tread Depth	Market	average weight	average OD	avg RRC	Source	Group or other ID number	manufacturer	brand	model	Tire Size	Part number	serial number
651	N	225	60	16	98	Q				11.0	REP		26.60	9.0	Michelin	191	MI	MICHELIN	MICHELIN X-ICE	225/60R16 98Q X-ICE	65855	
652	P	175	65	14	81	S	740	A	B	11.0	REP		22.90	10.8	Michelin	192	MI	MICHELIN	MICHELIN HARMONY	P175/65R14 HARMONY 81S	17217	
653	N	225	55	16	95	H	400	A	A	10.5	REP		25.80	10.9	Michelin	193	MI	MICHELIN	PILOT EXALTO A/S	225/55R16 95H PILOT EXALTO A/S	36771	
654	N	205	65	15	94	Q				11.0	REP		25.50	9.6	Michelin	194	MI	MICHELIN	MICHELIN X-ICE	205/65R15 94Q X-ICE	56209	
655	P	195	60	15	87	S	740	A	B	11.0	REP		24.00	11.4	Michelin	195	MI	MICHELIN	MICHELIN HARMONY	P195/60R15 HARMONY 87S	63007	
656	P	205	60	16	91	V	440	A	A	10.0	OE		25.70	7.7	Michelin	196	MI	MICHELIN	MXV4	P205/60R16 ENMXV4S8 XSEHON1574	42699	
657	P	215	55	17	93	V	440	A	A	9.0	OE		26.40	8.3	Michelin	197	MI	MICHELIN	MXV4	P215/55R17 EN MXV4 S8 TOY1826	84172	
658	P	205	60	16	91	V					REP			9.6	Michelin	198	MI	MICHELIN	MXV4	P205/60R16 EN MXV4 PLUS XSE91V		
659	P	205	60	16	91	V	440	A	A	10.0	OE		25.70	7.8	Michelin	199	MI	MICHELIN	MXV4	P205/60R16 ENMXV4S8 XSEHON1714	42699	
660	P	215	50	17	93	V	300	A	A	10.0	OE		25.50	8.4	Michelin	200	MI	MICHELIN	PILOT MXM4	P215/50R17 PILHXXMXM4XL MAZ1533	88482	
661	P	215	60	16	94	V	400	A	A	10.0	OE		26.10	8.0	Michelin	201	MI	MICHELIN	MXV4	P215/60R16 EN MXV4PLUSDTXSETO	73527	
662	P	225	50	17	93	V	300	A	A	10.0	OE		25.90	10.4	Michelin	202	MI	MICHELIN	PILOT MXM4	P225/50R17 PIL HX MXM4 HYN1017	33284	
663	P	215	60	16	94	V	440	A	A	10.0	OE		26.20	8.0	Michelin	203	MI	MICHELIN	MXV4	P215/60R16 ENMXV4S8 HYN1016	94075	
664	P	215	60	16	94	V	400	A	A	10.0	REP		26.10	8.0	Michelin	204	MI	MICHELIN	MXV4	P215/60R16 EN MXV4PLUSDTXSE94V	73527	
665	P	235	45	17	93	W	300	A	A	9.0	OE		25.60	9.3	Michelin	205	MI	MICHELIN	PILOT MXM4	P235/45R17 PILHXXMXM4CPJHON1671	39023	
666	P	215	50	17	93	V	300	A	A	10.0	OE		25.50	9.6	Michelin	206	MI	MICHELIN	PILOT MXM4	P215/50R17PHXXMXM4XLHN1427/1657	88482	
667	N	195	60	15	88	V					REP			10.2	Michelin	207	MI	MICHELIN	MXV4	195/60R15 EN MXV4 PLUS XSE 88V		
668	P	205	65	15	92	V					REP			9.5	Michelin	208	MI	MICHELIN	MXV4	P205/65R15 EN MXV4 PLUS 92V		
669	P	215	50	17	93	V	300	A	A	10.0	REP		25.50	9.9	Michelin	209	MI	MICHELIN	PILOT MXM4	P215/50R17 PIL HX MXM4 XL 93V	88482	
670	P	225	50	17	93	V	300	A	A	10.0	OE		25.90	9.7	Michelin	210	MI	MICHELIN	PILOT MXM4	P225/50R17 PIL HX MXM4 FOR0848	33284	
671	N	205	55	16	91	V	440	A	A	9.0	OE		24.90	11.0	Michelin	211	MI	MICHELIN	MICHELIN MISC VR PERF	205/55R16 91V ENRGY E3AVWG0405	83093	
672	P	205	60	16	91	V	440	A	A	10.0	OE		25.70	7.6	Michelin	212	MI	MICHELIN	MXV4	P205/60R16 ENMXV4S8 XSEMAZ1532	42699	
673	P	235	50	17	95	V	300	A	A	10.0	REP		26.30	10.9	Michelin	213	MI	MICHELIN	PILOT MXM4	P235/50R17 PIL HXXMXM495V	65211	
674	P	225	60	16	97	V					REP			10.5	Michelin	214	MI	MICHELIN	MXV4	P225/60R16 97V EN.MXV4 PL XSE		
675	N	225	45	17	91	Y	220	AA	A	10.0	REP		25.00	12.4	Michelin	215	MI	MICHELIN	PILOT SPORT PS2	225/45ZR17 PSPORT PS2 91Y	89192	
676	P	215	55	17	93	V	440	A	A	9.0	OE		26.40	8.3	Michelin	216	MI	MICHELIN	MXV4	P215/55R17 93V EN MXV4 TOY1826	84172	
677	N	225	40	18	92	Y	220	AA	A	10.0	REP		25.10	11.4	Michelin	217	MI	MICHELIN	PILOT SPORT PS2	225/40ZR18 92Y PSPORT PS2 XL	93617	
678	P	235	50	17	95	V	300	A	A	10.0	OE		26.30	8.7	Michelin	218	MI	MICHELIN	PILOT MXM4	P235/50R17 PIL HX MXM4 95V FD	65211	
679	P	205	60	16	91	V	440	A	A	10.0	REP		25.70	7.8	Michelin	219	MI	MICHELIN	MXV4	P205/60R16 EN MXV4S8 XSE 91V	42699	
680	P	255	45	17	98	V	300	A	A	10.0	OE		26.10	10.5	Michelin	220	MI	MICHELIN	PILOT MXM4	P255/45R17 PIL HX MXM4 GMO0555	85527	
681	P	235	50	17	95	V	300	A	A	10.0	OE		26.30	10.7	Michelin	221	MI	MICHELIN	PILOT MXM4	P235/50R17 PILHXXMXM4 GMO0551 K	65211	
682	P	235	45	17	93	W	300	A	A	9.0	OE		25.60	10.2	Michelin	222	MI	MICHELIN	PILOT MXM4	P235/45R17 PILHXXMXM4XSEHON1671	39023	
683	N	225	45	17	90	Y	400	AA	A	10.0	REP		25.10	13.2	Michelin	223	MI	MICHELIN	PILOT SPORT A/S	225/45ZR17 PILOT SPORT A/S 90Y	43670	
684	N	235	45	17	93	Y	400	AA	A	10.0	REP		25.60	12.6	Michelin	224	MI	MICHELIN	PILOT SPORT A/S	235/45ZR17 PILOT SPORT A/S 93Y	76221	
685	N	225	50	17	94	V	300	A	A	10.0	REP		25.90	9.0	Michelin	225	MI	MICHELIN	PILOT MXM4	225/50R17 PIL HX MXM4 XSE 94V	59993	
686	P	215	55	17	93	V	440	A	A	9.0	REP		26.40	8.3	Michelin	226	MI	MICHELIN	MXV4	P215/55R17 93V EN MXV4 S8 XSE	84172	
687	N	205	55	16	91	V					REP			10.1	Michelin	227	MI	MICHELIN	MXV4	205/55R16 91V EN MXV4 PL XSE		
688	P	235	55	18	99	V	300	A	A	9.0	OE		28.40	9.8	Michelin	228	MI	MICHELIN	PILOT MXM4	P235/55R18 PIL HXXMXM4 CHR0431	55594	
689	N	205	55	16	91	Z					OE			9.1	Michelin	229	MI	MICHELIN	MXM	205/55ZR16 PIL HX MXM VWG0109		
690	P	225	50	17	93	V	440	A	A	9.5	OE		26.00	9.3	Michelin	230	MI	MICHELIN	MXV4	P225/50R17 93V ENMXV4S8 FOR950	60905	
691	N	225	50	17	94	W	400	AA	A	10.0	REP		26.10	12.4	Michelin	231	MI	MICHELIN	PILOT SPORT A/S	225/50ZR17 94W PIL SPORT A/S	94369	
692	P	235	45	17	93	W	300	A	A	9.0	REP		25.60	10.2	Michelin	232	MI	MICHELIN	PILOT MXM4	P235/45R17 93W PILHXXMXM4 CPJ	39023	
693	N	225	45	17	91	Y	220	AA	A	10.0	REP		24.80	11.0	Michelin	233	MI	MICHELIN	PILOT SPORT	225/45ZR17 * PILOT SPT	52360	
694	N	235	45	17	94	Y	220	AA	A	10.0	REP		25.40	11.1	Michelin	234	MI	MICHELIN	PILOT SPORT PS2	235/45ZR17 94Y PIL SPORT PS2	43553	
695	P	195	55	15	84	V					REP			11.5	Michelin	235	MI	MICHELIN	XGTV4	P195/55R15 XGTV4 84V RRBL		
696	N	245	40	17	91	Y	220	AA	A	10.0	REP		24.70	13.1	Michelin	236	MI	MICHELIN	PILOT SPORT	245/40ZR17 PILOT SPORT 91Y	94494	
697	P	235	50	17	95	V	300	A	A	10.0	OE		26.30	8.8	Michelin	237	MI	MICHELIN	PILOT MXM4	P235/50R17 PILHXXMXM495VFOR0647	65211	
698	P	235	45	18	94	V	300	A	A	10.0	REP		26.34	10.8	Michelin	238	MI	MICHELIN	PILOT MXM4	P235/45R18 PIL HX MXM4 XSE 94V	35845	
699	N	205	60	16	92	V	240	AA	A	10.0	OE		25.60	10.4	Michelin	239	MI	MICHELIN	PILOT PRIMACY	205/60R16 PILOT PRIMACY 92VCC	48660	
700	N	225	55	16	95	W	400	AA	A	10.0	REP		25.70	13.4	Michelin	240	MI	MICHELIN	PILOT SPORT A/S	225/55ZR16 PILOT SPORT A/S 95W	67328	
701	N	245	45	18	96	Y	220	AA	A	10.0	REP		26.80	11.9	Michelin	241	MI	MICHELIN	PILOT SPORT	245/45ZR18 PILOT SPORT 96Y	34521	
702	N	245	45	18	96	W	220	AA	A	10.0	REP		26.80	10.2	Michelin	242	MI	MICHELIN	PILOT SPORT	245/45R18 PILOT SPORT 96W	61632	
703	P	205	55	16	89	V	300	A	A	10.0	REP		24.90	8.9	Michelin	243	MI	MICHELIN	PILOT MXM4	P205/55R16 89V PIL HX MXM4	70184	
704	N	245	40	17	91	Y	220	AA	A	10.0	REP		24.70	11.5	Michelin	244	MI	MICHELIN	PILOT SPORT PS2	245/40ZR17 PSPORT PS2 91Y	82268	
705	N	225	45	17	91	Y	220	AA	A	10.0	REP		24.80	10.8	Michelin	245	MI	MICHELIN	PILOT SPORT	225/45ZR17 PILOT SPORT MO 91Y	91857	
706	N	245	40	17	91	Y	400	AA	A	11.0	REP		24.90	14.1	Michelin	246	MI	MICHELIN	PILOT SPORT A/S	245/40ZR17 PILOT SPORT A/S 91Y	61975	
707	N	245	45	19	98	Y	240	AA	A	10.0	REP		27.70	12.4	Michelin	247	MI	MICHELIN	PILOT PRIMACY	245/45R19 PILOT PRIMACY 98Y	81665	
708	P	225	55	16	94	V	300	A	A		REP			8.9	Michelin	248	MI	MICHELIN	PILOT MXM4	P225/55R16 PIL HX MXM4 XSE 94V		
709	N	225	45	18	91	W	220	AA	A	10.0	REP		25.80	12.5	Michelin	249	MI	MICHELIN	PILOT SPORT	225/45R18 PILOT SPORT 91W	51137	
710	N	245	45	18	96	Y	400	AA	A	11.0	REP		26.70	12.8	Michelin	250	MI	MICHELIN	PILOT SPORT A/S	245/45ZR18 PIL SPT AS DIR 96Y	77973	
711	N	215	55	16	93	V					REP			8.1	Michelin	251	MI	MICHELIN	MXV4	215/55R16 EN MXV4 GRNX 93V		
712	P	215	60	16	94	V					REP			10.5	Michelin	252	MI	MICHELIN	XGTV4	P215/60R16 94V PIL XGT V4 DIR		
713	P	215	60	16	94	V	440	A	A	10.0	REP		26.20	9.3	Michelin	253	MI	MICHELIN	MXV4	P215/60R16 94V ENMXV4S8XSE/GNX	3097	
714	N	255	35	19	96	Y	220	AA	A	10.0	REP		26.00	10.4	Michelin	254	MI	MICHELIN	PILOT SPORT PS2	255/35ZR19 96Y PSPORT PS2 XL	86320	
715	P	245	70	17	108	S	420	A	A	11.0	OE		30.30	8.5	Michelin	255	MI	MICHELIN	LTX A/S	P245/70R17 108S LTX AS CHR0237	58774	

sort#	Prefix or Tire Type	section width	aspect ratio	rim diam	Load Index	Speed Rating	Treadwear	Traction	Temp	Tread Depth	Market	average weight	average OD	avg RRC	Source	Group or other ID number	manufacturer	brand	model	Tire Size	Part number	serial number
716	P	255	70	16	109	S	500	A	B	13.0	REP		30.20	9.6	Michelin	256	MI	MICHELIN	LTX M/S	P255/70R16 109S LTX M/S ORWL	39992	
717	P	265	70	16	111	S	500	A	B	13.0	REP		30.70	9.4	Michelin	257	MI	MICHELIN	LTX M/S	P265/70R16 111S LTX M/S ORWL	85423	
718	P	235	70	16	104	S	420	A	B	11.0	OE		29.10	8.4	Michelin	258	MI	MICHELIN	A	P235/70R16 CRSTERRFOR0323UVLBL	79176/46254	
719	P	245	65	17	105	S	420	A	B	11.0	OE		29.60	7.0	Michelin	259	MI	MICHELIN	CROSS TERRAIN	P245/65R17 CROSS TERRAIN105SGM	87242	
720	P	245	65	17	105	S	420	A	B	11.0	REP		29.60	7.2	Michelin	260	MI	MICHELIN	CROSS TERRAIN	P245/65R17 CROSS TERRAIN 105S	87242	
721	P	235	75	15	105	S					REP			9.7	Michelin	261	MI	MICHELIN	LTX M/S	P235/75R15 LTX M/S ORWL		
722	P	235	70	16	104	S	420	A	B	11.0	REP		29.10	8.4	Michelin	262	MI	MICHELIN	CROSS TERRAIN	P235/70R16CROSSTERRAINORWL104S	79176	
723	P	235	65	17	103	H	400	A	A	10.0	OE		29.10	9.5	Michelin	263	MI	MICHELIN	ENERGY MXV4 PLUS (LT)	P235/65R17 EN MXV4PL CHR0292	66114	
724	P	265	70	17	113	S	500	A	B	13.0	REP		31.80	8.8	Michelin	264	MI	MICHELIN	LTX M/S	P265/70R17 LTX M/S ORWL	66259	
725	P	255	65	17	108	S	420	A	B	11.5	OE		30.30	8.6	Michelin	265	MI	MICHELIN	LTX A/S	P255/65R17 LTX AS ORWL FOR0730	59101	
726	N	235	65	17	104	H	400	A	A	10.0	OE		29.10	9.4	Michelin	266	MI	MICHELIN	ENERGY MXV4 PLUS (LT)	235/65R17 ENMXV4 PL* BMW0086	58071	
727	P	245	65	17	105	S	440	A	B	11.0	OE		29.70	9.3	Michelin	267	MI	MICHELIN	LTX M/S	P245/65R17 105S LTX MS HON1502	35551	
728	P	235	65	17	103	T	420	A	B	11.0	OE		28.90	9.1	Michelin	269	MI	MICHELIN	CROSS TERRAIN	P235/65R17 CROSS TERR HON1429	95648	
729	P	235	70	16	104	S	420	A	B	11.0	OE		29.10	8.0	Michelin	270	MI	MICHELIN	CROSS TERRAIN	P235/70R16 CROSSTERRN FOR0841	79176/46254	
730	P	235	60	18	102	V	300	A	A	10.0	REP		29.00	10.1	Michelin	271	MI	MICHELIN	PILOT HX MXM4 (LT)	P235/60R18 102V PIL HXMXM4	94200	
731	P	235	55	18	99	V	440	A	A	9.0	OE		28.30	9.7	Michelin	272	MI	MICHELIN	ENERGY MXV4 S8 (LT)	P235/55R18 ENMXV4 99V TOY1742B	82783	
732	P	235	65	17	103	T	420	A	B	11.0	REP		28.90	9.1	Michelin	273	MI	MICHELIN	CROSS TERRAIN	P235/65R17 CROSS TERRAIN 103T	95648	
733	P	265	70	16	111	S	500	A	B	13.0	REP		30.70	9.2	Michelin	274	MI	MICHELIN	X-RADIAL LT	P265/70R16 X RAD LT ORWL 111S	63780	
734	P	235	70	16	107	S	500	A	B	13.0	OE		29.10	8.4	Michelin	275	MI	MICHELIN	LTX M/S	P235/70R16 LTXMS XL FOR0788	76721	
735	P	235	70	16	107	S	500	A	B	13.0	OE		29.10	8.4	Michelin	276	MI	MICHELIN	LTX M/S	P235/70R16 LTXMS XL FOR0788	76721	
736	P	255	65	17	108	H	420	A	B	10.0	OE		30.10	8.6	Michelin	277	MI	MICHELIN	LTX A/S	P255/65R17 LTX A/S FOR0818	79804	
737	P	255	70	18	112	S	420	A	B	12.0	OE		32.20	9.1	Michelin	279	MI	MICHELIN	CROSS TERRAIN	P255/70R18 CROSSTERRORBLFOR0443	84379	
738	P	245	70	16	106	S	500	A	B	13.0	REP		29.60	9.4	Michelin	280	MI	MICHELIN	LTX M/S	P245/70R16 LTX M/S 106S ORWL	84843	
739	P	245	65	17	105	H	400	A	A	10.0	OE		29.53	9.0	Michelin	282	MI	MICHELIN	PILOT LTX	P245/65R17 PIL LTX DT FOR0850	85025	
740	P	255	70	16	109	S	500	A	B	13.0	REP		30.20	9.5	Michelin	283	MI	MICHELIN	X-RADIAL LT	P255/70R16 X RAD LT ORWL 109S	48370	
741	P	235	70	16	104	S	420	A	B	11.0	OE		29.10	8.6	Michelin	284	MI	MICHELIN	CROSS TERRAIN	P235/70R16 CROSSTERRN FOR0718	79176/46254	
742	P	235	70	16	104	S	420	A	B	11.0	OE		29.10	8.6	Michelin	285	MI	MICHELIN	CROSS TERRAIN	P235/70R16 CROSSTERRN FOR0718	79176/46254	
743	P	225	70	16	101	S	700	A	B	11.5	REP		28.30	9.7	Michelin	286	MI	MICHELIN	CROSS TERRAIN	P225/70R16 CS TERR SUVORWL101S	75883	
744	P	265	70	16	111	S	700	A	B	11.5	REP		30.60	10.0	Michelin	287	MI	MICHELIN	CROSS TERRAIN	P265/70R16 CS TERR SUV 111S	56411	
745	P	235	70	16	104	S	420	A	B	11.0	OE		29.10	8.5	Michelin	288	MI	MICHELIN	CROSS TERRAIN	P235/70R16 104S CRSTR FOR0842	79176/46254	
746	P	235	75	15	105	S	500	A	B	13.0	REP		28.70	9.5	Michelin	289	MI	MICHELIN	XC LT4	P235/75R15 XC LT4 105S ORWL	80954	
747	P	235	65	17	103	H	400	A	A	10.0	REP		29.10	10.0	Michelin	290	MI	MICHELIN	ENERGY MXV4 PLUS (LT)	P235/65R17 EN MXV4 PL XSE 103H	66114	
748	P	235	65	17	103	H	400	A	A	10.0	REP		29.10	10.0	Michelin	291	MI	MICHELIN	ENERGY MXV4 PLUS (LT)	P235/65R17 EN MXV4 PL XSE 103H	66114	
749	N	255	65	16	109	H					REP			9.1	Michelin	294	MI	MICHELIN	CROSS TERRAIN	255/65R16 CROSS TERR SUV 109H		
750	P	265	70	16	111	S	700	A	B	11.5	REP		30.60	8.9	Michelin	295	MI	MICHELIN	CROSS TERRAIN	P265/70R16 CRSTERRSUV 111SORWL	64353	
751	P	265	75	16	114	S	500	A	B	13.0	REP		31.60	9.1	Michelin	296	MI	MICHELIN	LTX M/S	P265/75R16 LTX M/S ORWL 114S	97979	
752	N	255	55	18	105	H	400	A	A	10.0	OE		28.90	8.9	Michelin	297	MI	MICHELIN	ENERGY MXV4 PLUS (LT)	255/55R18 ENMXV4PLUS*XSE105HBM	79347	
753	P	245	70	16	106	S	700	A	B	11.5	REP		29.50	8.7	Michelin	298	MI	MICHELIN	CROSS TERRAIN	P245/70R16 CS TERR SUVORWL106S	97768	
754	P	235	55	18	99	V	440	A	A	9.0	REP		28.30	9.5	Michelin	299	MI	MICHELIN	ENERGY MXV4 S8 (LT)	P235/55R18 ENMXV4 S8 99V	82783	
755	P	255	65	16	106	S	500	A	B	11.0	REP		29.20	9.8	Michelin	301	MI	MICHELIN	LTX M/S	P255/65R16 106S LTX M/S	61571	
756	P	265	70	16	111	S	500	A	B	13.0	REP		30.70	9.8	Michelin	302	MI	MICHELIN	XC LT4	P265/70R16 111S XC LT4 ORWL	70017	
757	P	245	70	16	106	S	500	A	B	13.0	REP		29.60	9.4	Michelin	303	MI	MICHELIN	X-RADIAL LT	P245/70R16 X RAD LT ORWL 106S	95059	
758	P	235	75	15	108	S	500	A	B	13.0	REP		28.80	9.4	Michelin	304	MI	MICHELIN	LTX M/S	P235/75R15 LTX M/S ORWL XL	29394	
759	P	215	70	16	99	S	500	A	B	13.0	REP		27.80	10.6	Michelin	305	MI	MICHELIN	LTX M/S	P215/70R16 LTX M/S ORWL	60041	
760	P	265	65	17	110	S	420	A	B	12.0	REP		30.70	8.3	Michelin	306	MI	MICHELIN	CROSS TERRAIN	P265/65R17 CROSS TERRAIN 110S	55332	
761	P	235	75	15	105	S	700	A	B	11.5	REP		28.80	9.6	Michelin	308	MI	MICHELIN	CROSS TERRAIN	P235/75R15 CS TERR SUVORWL105S	73546	
762	N	285	45	19	107	V	220	AA	A	10.0	OE		29.10	10.7	Michelin	309	MI	MICHELIN	MICHELIN DIAMARIS*	285/45R19 4X4 DIAMARIS* BMW	98256	
763	N	255	50	19	103	V	220	AA	A	10.0	OE		29.10	11.2	Michelin	310	MI	MICHELIN	MICHELIN DIAMARIS*	255/50R19 4X4 DIAMARIS * BMW	77861	
764	P	255	70	16	109	S	700	A	B	11.5	REP		30.20	8.8	Michelin	311	MI	MICHELIN	CROSS TERRAIN	P255/70R16 CS TERR SUVORWL109S	67119	
765	P	245	65	17	105	S	440	A	B	11.0	REP		29.70	9.4	Michelin	312	MI	MICHELIN	LTX M/S	P245/65R17 105S LTX M/S	35551	
766	P	235	75	15	105	S	500	A	B	13.0	REP		28.70	9.7	Michelin	313	MI	MICHELIN	X-RADIAL LT	P235/75R15 X RAD LT ORWL 105S	84610	
767	P	225	70	16	101	S	500	A	B	13.0	REP		28.40	10.0	Michelin	314	MI	MICHELIN	LTX M/S	P225/70R16 101S LTX M/S ORWL	52470	
768	P	275	70	16	114	S	500	A	B	12.0	REP		31.30	8.8	Michelin	315	MI	MICHELIN	LTX M/S	P275/70R16 114S LTX M/S ORBL	43428	
769	P	275	70	16	114	S	500	A	B	12.0	REP		31.30	8.8	Michelin	316	MI	MICHELIN	LTX M/S	P275/70R16 114S LTX M/S ORBL	43428	
770	P	265	70	17	113	S	420	A	B	12.0	REP		31.90	8.7	Michelin	317	MI	MICHELIN	CROSS TERRAIN	P265/70R17 CROSS TERRAIN 113S	61797	
771	N	235	65	17	104	H	440	A	A	9.5	OE		29.20	9.8	Michelin	318	MI	MICHELIN	MICHELIN LATITUDE	235/65R17104HLATTRHPMER459/300	30475	
772	P	235	70	16	104	S	500	A	B	13.0	REP		29.10	9.5	Michelin	319	MI	MICHELIN	LTX M/S	P235/70R16 LTX M/S ORWL 104S	59257	
773	P	265	70	17	113	S	500	A	B	13.0	REP		31.80	9.4	Michelin	320	MI	MICHELIN	X-RADIAL LT	P265/70R17 X RADIALORWL113S	41933	
774	P	235	65	18	104	S	420	A	B	11.0	OE		30.04	10.3	Michelin	321	MI	MICHELIN	CROSS TERRAIN	P235/65R18 CROSSTERR FOR0935	20950	
775	P	235	65	18	104	S	420	A	B	11.0	OE		30.04	10.3	Michelin	322	MI	MICHELIN	CROSS TERRAIN	P235/65R18 CROSSTERR FOR0935	20950	
776	P	235	65	17	103	S	420	A	B	10.0	REP		29.40	7.5	Michelin	323	MI	MICHELIN	LTX A/S	P235/65R17 103S LTX A/S ORBL	95100	
777	P	255	70	16	109	S	500	A	B	13.0	REP		30.20	9.3	Michelin	324	MI	MICHELIN	XC LT4	P255/70R16 109S XC LT4 ORWL	72020	
778	N	225	65	17	101	S	500	A	A	10.0	REP		28.70	7.9	Michelin	325	MI	MICHELIN	LX4 (LT)	225/65R17 EN LX4 101S	57220	
779	N	255	55	18	105	H	400	A	A	10.0	REP		28.90	9.0	Michelin	328	MI	MICHELIN	ENERGY MXV4 PLUS (LT)	255/55R18 EN MXV4 PLUS*XSE105H	79347	
780	N	235	65	17	104	H	400	A	A	10.0	REP		29.10	9.3	Michelin	329	MI	MICHELIN	ENERGY MXV4 PLUS (LT)	235/65R17 EN MXV4 PLUS*XSE104H	58071	

sort#	Prefix or Tire Type	section width	aspect ratio	rim diam	Load Index	Speed Rating	Treadwear	Traction	Temp	Tread Depth	Market	average weight	average OD	avg RRC	Source	Group or other ID number	manufacturer	brand	model	Tire Size	Part number	serial number
781	P	265	70	17	113	H					OE			9.5	Michelin	330	MI	MICHELIN	PILOT LTX	P265/70R17 PILOT LTX GMO0284		
782	P	245	70	17	108	S	420	A	A	11.0	REP		30.30	8.9	Michelin	331	MI	MICHELIN	LTX A/S	P245/70R17 LTX A/S RRBL 108S	58774	
783	P	275	70	16	114	H	440	A	A	12.0	REP		31.30	8.7	Michelin	332	MI	MICHELIN	LTX M/S	P275/70R16 114H LTX M/S	98835	
784	P	245	75	16	109	S	500	A	B	13.0	REP		30.40	9.3	Michelin	333	MI	MICHELIN	LTX M/S	P245/75R16 LTX M/S ORWL 109S	63571	
785	P	235	60	18	102	V	300	A	A	10.0	OE		29.00	10.9	Michelin	334	MI	MICHELIN	PILOT HX MXM4 (LT)	P235/60R18 PIL HXMXM4 GMO0554	94200	
786	P	255	60	17	105	S	420	A	B	10.5	REP		29.10	8.6	Michelin	335	MI	MICHELIN	CROSS TERRAIN	P255/60R17 CROSS TERRAIN 105S	65887	
787	P	255	55	18	104	V	300	A	A	10.0	OE		29.00	10.3	Michelin	336	MI	MICHELIN	PILOT HX MXM4 (LT)	P255/55R18 PIL HXMXM4 GMO0426	51820	
788	P	265	70	16	111	S	500	A	B	13.0	REP		30.70	9.4	Michelin	337	MI	MICHELIN	MICHELIN LTX M/S	P265/70R16 111S LTX M/S ORWL	85423	
789	P	265	70	17	113	S	500	A	B	13.0	REP		31.80	8.8	Michelin	338	MI	MICHELIN	MICHELIN LTX M/S	P265/70R17 LTX M/S ORWL	66259	
790	P	235	70	16	104	S	420	A	B	11.0	REP		29.10	8.4	Michelin	339	MI	MICHELIN	MICHELIN CROSS TERRAIN	P235/70R16CROSSTERRAINORWL104S	79176	
791	P	245	65	17	105	S	440	A	B	11.0	OE		29.70	9.3	Michelin	340	MI	MICHELIN	MICHELIN LTX M/S	P245/65R17 105S LTX MS HON1502	35551	
792	P	245	65	17	105	S	420	A	B	11.0	OE		29.60	7.0	Michelin	341	MI	MICHELIN	MICHELIN CROSS TERRAIN	P245/65R17 CROSS TERRAIN105SGM	87242	
793	P	235	75	15	105	S					REP			9.7	Michelin	343	MI	MICHELIN	MICHELIN LTX M/S	P235/75R15 LTX M/S ORWL		
794	P	235	65	17	103	T	420	A	B	11.0	REP		28.90	9.1	Michelin	344	MI	MICHELIN	MICHELIN CROSS TERRAIN	P235/65R17 CROSS TERRAIN 103T	95648	
795	P	235	65	18	104	S	420	A	B	11.0	OE		30.04	10.3	Michelin	345	MI	MICHELIN	MICHELIN CROSS TERRAIN	P235/65R18 CROSSTERR FOR0935	20950	
796	P	245	65	17	105	S	420	A	B	11.0	REP		29.60	7.2	Michelin	346	MI	MICHELIN	MICHELIN CROSS TERRAIN	P245/65R17 CROSS TERRAIN 105S	87242	
797	P	235	55	18	99	V	440	A	A	9.0	OE		28.30	9.7	Michelin	347	MI	MICHELIN	MICHELIN ENERGY MXV4 S8 (LT)	P235/55R18 ENMXV4 99V TOY1742B	82783	
798	P	235	55	18	99	V	440	A	A	9.0	REP		28.30	9.5	Michelin	348	MI	MICHELIN	MICHELIN ENERGY MXV4 S8 (LT)	P235/55R18 ENMXV4 S8 99V	82783	
799	P	255	70	16	109	S	500	A	B	13.0	REP		30.20	9.6	Michelin	349	MI	MICHELIN	MICHELIN LTX M/S	P255/70R16 109S LTX M/S ORWL	39992	
800	P	265	65	17	110	S	420	A	B	12.0	REP		30.70	8.3	Michelin	350	MI	MICHELIN	MICHELIN CROSS TERRAIN	P265/65R17 CROSS TERRAIN 110S	55332	
801	P	265	70	16	111	S	500	A	B	13.0	REP		30.70	9.2	Michelin	351	MI	MICHELIN	MICHELIN X-RADIAL LT	P265/70R16 X RAD LT ORWL 111S	63780	
802	N	235	65	17	104	H	400	A	A	10.0	OE		29.10	9.4	Michelin	352	MI	MICHELIN	MICHELIN ENERGY MXV4 PLUS (LT)	235/65R17 ENMXV4 PL* BMW0086	58071	
803	P	235	65	17	103	T	420	A	B	11.0	OE		28.90	9.1	Michelin	353	MI	MICHELIN	MICHELIN CROSS TERRAIN	P235/65R17 CROSS TERR HON1429	95648	
804	P	235	70	16	104	S	420	A	B	11.0	OE		29.10	8.6	Michelin	354	MI	MICHELIN	MICHELIN CROSS TERRAIN	P235/70R16 CROSSTERRN FOR0718	79176/46254	
805	P	235	70	16	104	S	420	A	B	11.0	OE		29.10	8.5	Michelin	355	MI	MICHELIN	MICHELIN CROSS TERRAIN	P235/70R16 104S CRSTR FOR0842	79176/46254	
806	P	235	70	16	107	S	500	A	B	13.0	OE		29.10	8.4	Michelin	356	MI	MICHELIN	MICHELIN LTX M/S	P235/70R16 LTXMS XL FOR0788	76721	
807	P	245	70	16	106	S	500	A	B	13.0	REP		29.60	9.4	Michelin	357	MI	MICHELIN	MICHELIN LTX M/S	P245/70R16 LTX M/S 106S ORWL	84843	
808	P	255	70	16	109	S	500	A	B	13.0	REP		30.20	9.5	Michelin	358	MI	MICHELIN	MICHELIN X-RADIAL LT	P255/70R16 X RAD LT ORWL 109S	48370	
809	P	225	70	16	101	S	700	A	B	11.5	REP		28.30	9.7	Michelin	359	MI	MICHELIN	MICHELIN CROSS TERRAIN	P225/70R16 CS TERR SUVORWL101S	75883	
810	N	235	65	17	104	H	440	A	A	9.5	OE		29.20	9.8	Michelin	360	MI	MICHELIN	MICHELIN LATITUDE	235/65R17104HLATTRHPMER459/300	30475	
811	P	255	65	17	108	H	420	A	B	10.0	OE		30.10	8.6	Michelin	361	MI	MICHELIN	MICHELIN LTX A/S	P255/65R17 LTX A/S FOR0818	79804	
812	P	235	60	18	102	V	300	A	A	10.0	REP		29.00	10.1	Michelin	362	MI	MICHELIN	MICHELIN PILOT HX MXM4 (LT)	P235/60R18 102V PIL HXMXM4	94200	
813	P	235	75	15	108	S	500	A	B	13.0	REP		28.80	9.4	Michelin	363	MI	MICHELIN	MICHELIN LTX M/S	P235/75 R15 108S LTXM/SXL ORWL	29394	
814	P	265	70	16	111	S	700	A	B	11.5	REP		30.60	10.0	Michelin	364	MI	MICHELIN	MICHELIN CROSS TERRAIN	P265/70R16 CS TERR SUV 111S	56411	
815	P	215	70	16	99	S	500	A	B	13.0	REP		27.80	10.6	Michelin	366	MI	MICHELIN	MICHELIN LTX M/S	P215/70R16 LTX M/S ORWL	60041	
816	P	265	70	16	111	S	700	A	B	11.5	REP		30.60	8.9	Michelin	367	MI	MICHELIN	MICHELIN CROSS TERRAIN	P265/70R16 CRSTERRSUV 111SORWL	64353	
817	N	235	65	17	104	H	400	A	A	10.0	REP		29.10	9.3	Michelin	368	MI	MICHELIN	MICHELIN ENERGY MXV4 PLUS (LT)	235/65R17 EN MXV4 PLUS*XSE104H	58071	
818	P	245	70	17	108	S	420	A	A	11.0	REP		30.30	8.9	Michelin	369	MI	MICHELIN	MICHELIN LTX A/S	P245/70R17 LTX A/S RRBL 108S	58774	
819	P	265	70	17	113	S	420	A	B	12.0	REP		31.90	8.7	Michelin	370	MI	MICHELIN	MICHELIN CROSS TERRAIN	P265/70R17 CROSS TERRAIN 113S	61797	
820	P	245	65	17	105	S	440	A	B	11.0	REP		29.70	9.4	Michelin	371	MI	MICHELIN	MICHELIN LTX M/S	P245/65R17 105S LTX M/S	35551	
821	P	245	70	16	106	S	500	A	B	13.0	REP		29.60	9.4	Michelin	373	MI	MICHELIN	MICHELIN X-RADIAL LT	P245/70R16 X RAD LT ORWL 106S	95059	
822	N	255	65	16	109	H					REP			9.1	Michelin	374	MI	MICHELIN	MICHELIN CROSS TERRAIN	255/65R16 CROSS TERR SUV 109H		
823	P	235	70	16	104	S	500	A	B	13.0	REP		29.10	9.5	Michelin	375	MI	MICHELIN	MICHELIN LTX M/S	P235/70R16 LTX M/S ORWL 104S	59257	
824	P	265	75	16	114	S	500	A	B	13.0	REP		31.60	9.1	Michelin	376	MI	MICHELIN	MICHELIN LTX M/S	P265/75R16 LTX M/S ORWL 114S	97979	
825	N	255	55	18	105	H	400	A	A	10.0	REP		28.90	9.0	Michelin	377	MI	MICHELIN	MICHELIN ENERGY MXV4 PLUS (LT)	255/55R18 EN MXV4 PLUS*XSE105H	79347	
826	P	245	70	16	106	S	700	A	B	11.5	REP		29.50	8.7	Michelin	378	MI	MICHELIN	MICHELIN CROSS TERRAIN	P245/70R16 CS TERR SUVORWL106S	97768	
827	P	265	70	17	113	S	500	A	B	13.0	REP		31.80	9.4	Michelin	379	MI	MICHELIN	MICHELIN X-RADIAL LT	P265/70R17 X RADIALORWL113S	41933	
828	P	255	65	16	106	S	500	A	B	11.0	REP		29.20	9.8	Michelin	380	MI	MICHELIN	MICHELIN LTX M/S	P255/65R16 106S LTX M/S	61571	
829	P	235	75	15	105	S	500	A	B	13.0	REP		28.70	9.7	Michelin	382	MI	MICHELIN	MICHELIN X-RADIAL LT	P235/75R15 X RAD LT ORWL 105S	84610	
830	N	255	55	18	105	H	400	A	A	10.0	OE		28.90	8.9	Michelin	383	MI	MICHELIN	MICHELIN ENERGY MXV4 PLUS (LT)	255/55R18 ENMXV4PLUS*XSE105HBM	79347	
831	P	225	70	16	101	S	500	A	B	13.0	REP		28.40	10.0	Michelin	384	MI	MICHELIN	MICHELIN LTX M/S	P225/70R16 101S LTX M/S ORWL	52470	
832	P	255	70	16	109	S	700	A	B	11.5	REP		30.20	8.8	Michelin	386	MI	MICHELIN	MICHELIN CROSS TERRAIN	P255/70R16 CS TERR SUVORWL109S	67119	
833	P	235	65	17	103	H	400	A	A	10.0	REP		29.10	10.0	Michelin	387	MI	MICHELIN	MICHELIN ENERGY MXV4 PLUS (LT)	P235/65R17 EN MXV4 PL XSE 103H	66114	
834	P	255	60	17	105	S	420	A	B	10.5	REP		29.10	8.6	Michelin	389	MI	MICHELIN	MICHELIN CROSS TERRAIN	P255/60R17 CROSS TERRAIN 105S	65887	
835	P	235	65	17	103	S	420	A	B	10.0	REP		29.40	7.5	Michelin	390	MI	MICHELIN	MICHELIN LTX A/S	P235/65R17 103S LTX A/S ORBL	95100	
836	P	275	70	16	114	S	500	A	B	12.0	REP		31.30	8.8	Michelin	392	MI	MICHELIN	MICHELIN LTX M/S	P275/70R16 114S LTX M/S ORBL	43428	
837	P	245	75	16	109	S	500	A	B	13.0	REP		30.40	9.3	Michelin	393	MI	MICHELIN	MICHELIN LTX M/S	P245/75R16 LTX M/S ORWL 109S	63571	
838	P	235	75	15	105	S	700	A	B	11.5	REP		28.80	9.6	Michelin	394	MI	MICHELIN	MICHELIN CROSS TERRAIN	P235/75R15 CS TERR SUVORWL105S	73546	
839	P	215	75	15	100	S	740	A	B	10.0	REP		27.30	9.5	Michelin	395	MI	MICHELIN	MICHELIN X-RADIAL DT (LT)	P215/75R15 X RAD DT 100S	3825	
840	P	265	70	16	111	S	500	A	B	13.0	REP		30.70	9.8	Michelin	396	MI	MICHELIN	MICHELIN XC LT4	P265/70R16 111S XC LT4 ORWL	70017	
841	P	255	70	18	112	S	420	A	B	12.0	OE		32.20	9.1	Michelin	397	MI	MICHELIN	MICHELIN CROSS TERRAIN	P255/70R18 CROSSTERORBLFOR0443	84379	
842	N	225	65	17	101	S	500	A	A	10.0	REP		28.70	7.9	Michelin	398	MI	MICHELIN	MICHELIN LX4 (LT)	225/65R17 EN LX4 101S	57220	
843	P	275	70	16	114	H	440	A	A	12.0	REP		31.30	8.7	Michelin	399	MI	MICHELIN	MICHELIN LTX M/S	P275/70R16 114H LTX M/S	98835	
844	P	225	70	16	101	S	500	A	B	13.0	REP		28.40	10.6	Michelin	400	MI	MICHELIN	MICHELIN LTX M/S	P225/70R16 LTX M/S ORBL 101S	62260	
845	P	235	75	15	105	S	500	A	B	13.0	REP		28.70	9.5	Michelin	402	MI	MICHELIN	MICHELIN XC LT4	P235/75R15 XC LT4 105S ORWL	80954	

sort#	Prefix or Tire Type	section width	aspect ratio	rim diam	Load Index	Speed Rating	Treadwear	Traction	Temp	Tread Depth	Market	average weight	average OD	avg RRC	Source	Group or other ID number	manufacturer	brand	model	Tire Size	Part number	serial number
846	P	235	70	15	102	S	500	A	B	13.0	REP		27.90	10.6	Michelin	403	MI	MICHELIN	MICHELIN LTX M/S	P235/70R15 LTX M/S ORWL 102S	97679	
847	P	245	70	17	108	S	420	A	A	11.0	OE		30.30	8.5	Michelin	404	MI	MICHELIN	MICHELIN LTX A/S	P245/70R17 108S LTX AS CHR0237	58774	
848	P	275	60	17	110	S	700	A	B	11.5	REP		30.00	8.7	Michelin	405	MI	MICHELIN	MICHELIN CROSS TERRAIN	P275/60R17CROSSTERRSUWORWL110S	88696	
849	P	205	60	16	91	V	440	A	A	10.0	OE		25.70	7.7	Michelin	406	MI	MICHELIN	MICHELIN MXV4	P205/60R16 ENMXV4S8 XSEHON1574	42699	
850	P	215	50	17	93	V	300	A	A	10.0	OE		25.50	9.6	Michelin	407	MI	MICHELIN	MICHELIN PILOT MXM4	P215/50R17PHXMXM4XLHN1427/1657	88482	
851	P	215	60	16	94	V	440	A	A	10.0	OE		26.20	8.0	Michelin	408	MI	MICHELIN	MICHELIN MXV4	P215/60R16 ENMXV4S8 HYN1016	94075	
852	P	225	50	17	94	V	300	A	A	10.0	OE		25.90	9.7	Michelin	409	MI	MICHELIN	MICHELIN PILOT MXM4	P225/50R17 PIL HX MXM4 FOR0848	33284	
853	P	215	50	17	93	V	300	A	A	10.0	OE		25.50	8.4	Michelin	410	MI	MICHELIN	MICHELIN PILOT MXM4	P215/50R17 PILHXXM4XL MAZ1533	88482	
854	P	205	60	16	91	V					REP			9.6	Michelin	411	MI	MICHELIN	MICHELIN MXV4	P205/60R16 EN MXV4 PLUS XSE91V		
855	P	215	55	17	93	V	440	A	A	9.0	REP		26.40	8.3	Michelin	412	MI	MICHELIN	MICHELIN MXV4	P215/55R17 93V EN MXV4 S8 XSE	84172	
856	P	205	60	16	91	V	440	A	A	10.0	REP		25.70	7.8	Michelin	413	MI	MICHELIN	MICHELIN MXV4	P205/60R16 EN MXV4S8 XSE 91V	42699	
857	P	215	60	16	94	V	400	A	A	10.0	REP		26.10	8.0	Michelin	414	MI	MICHELIN	MICHELIN MXV4	P215/60R16 EN MXV4PLUSDTXSE94V	73527	
858	P	215	50	17	93	V	300	A	A	10.0	REP		25.50	9.9	Michelin	415	MI	MICHELIN	MICHELIN PILOT MXM4	P215/50R17 PIL HX MXM4 XL 93V	88482	
859	P	225	50	17	93	V	440	A	A	9.5	OE		26.00	9.3	Michelin	416	MI	MICHELIN	MICHELIN MXV4	P225/50R17 93V ENMXV4S8 FOR950	60905	
860	P	205	65	15	92	V					REP			9.5	Michelin	417	MI	MICHELIN	MICHELIN MXV4	P205/65R15 EN MXV4 PLUS 92V		
861	P	215	60	16	94	V	440	A	A	10.0	REP		26.20	9.3	Michelin	418	MI	MICHELIN	MICHELIN MXV4	P215/60R16 EN MXV4 S8 94V	3097	
862	N	205	55	16	91	Z					OE			9.1	Michelin	419	MI	MICHELIN	MICHELIN MXM	205/55Z16 PIL HX MXM VWG0109		
863	N	235	45	17	93	Y	400	AA	A	10.0	REP		25.60	12.6	Michelin	420	MI	MICHELIN	MICHELIN PILOT SPORT A/S	235/45ZR17 PILOT SPORT A/S 93Y	76221	
864	P	205	60	16	91	V	440	A	A	10.0	OE		25.70	7.6	Michelin	421	MI	MICHELIN	MICHELIN MXV4	P205/60R16 ENMXV4S8 XSEMAZ1532	42699	
865	N	225	45	17	90	Y	400	AA	A	10.0	REP		25.10	13.2	Michelin	422	MI	MICHELIN	MICHELIN PILOT SPORT A/S	225/45ZR17 PILOT SPORT A/S 90Y	43670	
866	P	215	60	16	94	V	440	A	A	10.0	REP		26.20	9.3	Michelin	423	MI	MICHELIN	MICHELIN MXV4	P215/60R16 94V ENMXV4S8XSE/GNX	3097	
867	N	195	60	15	88	V					REP			10.2	Michelin	424	MI	MICHELIN	MICHELIN MXV4	195/60R15 EN MXV4 PLUS XSE 88V		
868	P	215	60	16	94	V	400	A	A	10.0	OE		26.10	8.0	Michelin	425	MI	MICHELIN	MICHELIN MXV4	P215/60R16 EN MXV4PLUSDTXSETO	73527	
869	N	225	50	17	94	V	300	A	A	10.0	REP		25.90	9.0	Michelin	426	MI	MICHELIN	MICHELIN PILOT MXM4	225/50R17 PIL HX MXM4 XSE 94V	59993	
870	P	235	50	17	95	V	300	A	A	10.0	REP		26.30	10.9	Michelin	427	MI	MICHELIN	MICHELIN PILOT MXM4	P235/50R17 PIL HXMXM495V	65211	
871	N	225	45	17	91	Y	220	AA	A	10.0	REP		24.80	12.4	Michelin	428	MI	MICHELIN	MICHELIN PILOT SPORT PS2	225/45ZR17 PSPORT PS2 91Y	42406	
872	P	225	60	16	97	V					REP			10.5	Michelin	429	MI	MICHELIN	MICHELIN MXV4	P225/60R16 97V EN.MXV4 PL XSE		
873	N	205	55	16	91	V					REP			10.1	Michelin	430	MI	MICHELIN	MICHELIN MXV4	205/55R16 91V EN MXV4 PL XSE		
874	P	235	45	17	93	W	300	A	A	9.0	REP		25.60	10.2	Michelin	431	MI	MICHELIN	MICHELIN PILOT MXM4	P235/45R17 93W PILHXXM4 CPJ	39023	
875	N	245	40	17	91	Y	220	AA	A	10.0	REP		24.70	13.1	Michelin	432	MI	MICHELIN	MICHELIN PILOT SPORT	245/40ZR17 PILOT SPORT 91Y	50985	
876	P	225	60	16	97	S	600	A	B	10.0	REP		26.50	8.7	Michelin	433	MI	MICHELIN	MICHELIN SYMMETRY	P225/60R16 SYMMETRY GNX WW697S	98499	
877	N	235	65	16	103	T	500	A	B	10.0	OE		27.90	8.6	Michelin	434	MI	MICHELIN	MICHELIN ENERGY LX4	235/65R16 ENERGY LX4 HON1785	95649	
878	N	205	55	16	91	H	400	A	A	10.0	OE		24.90	9.0	Michelin	435	MI	MICHELIN	MICHELIN MXV4 (H)	205/55R16 EN.MXV4PL VWG099/100	71970	
879	N	215	55	16	93	H					REP			9.6	Michelin	436	MI	MICHELIN	MICHELIN MXV4 (H)	215/55R16 EN MXV4 PLUS XSE 93H		
880	P	205	60	16	91	H					REP			9.4	Michelin	437	MI	MICHELIN	MICHELIN MXV4 (H)	P205/60R16 91H EN.MXV4 PL XSE		
881	N	235	65	16	103	T	500	A	B	10.0	OE		27.90	9.5	Michelin	438	MI	MICHELIN	MICHELIN ENERGY LX4	235/65R16 EN LX4 HON1688 ECE	95649	
882	N	215	65	16	98	S	740	A	B	10.0	REP		26.80	9.0	Michelin	439	MI	MICHELIN	MICHELIN X RADIAL DT	215/65R16 X RAD DT 98S	84224	
883	P	205	65	15	92	H	440	A	A	10.0	OE		25.60	9.2	Michelin	440	MI	MICHELIN	MICHELIN MXV4 (H)	P205/65R15 ENMXV4 S8 HON1607	75548	
884	N	205	55	16	91	H	400	A	A	10.0	REP		24.90	9.7	Michelin	441	MI	MICHELIN	MICHELIN MXV4 (H)	205/55R16 EN MXV4 PLUS XSE 91H	79258	
885	N	205	65	15	94	H					REP			9.1	Michelin	442	MI	MICHELIN	MICHELIN MXV4 (H)	205/65R15 EN MXV4 PLUS XSE 94H		
886	P	225	60	16	97	S	600	A	B	10.0	REP		26.50	7.4	Michelin	443	MI	MICHELIN	MICHELIN SYMMETRY	P225/60R16 97S SYMMETRY	43798	
887	P	215	65	16	96	T	500	A	B	10.0	OE		27.00	7.9	Michelin	444	MI	MICHELIN	MICHELIN ENERGY LX4	P215/65R16 EN LX4 96T TOY1454	74735	
888	P	225	60	16	97	S	740	A	B	10.0	REP		26.40	9.8	Michelin	445	MI	MICHELIN	MICHELIN X RADIAL DT	P225/60R16 97S X RADIAL DT	17457	
889	P	215	70	15	97	S	600	A	B	10.0	REP		26.70	9.1	Michelin	446	MI	MICHELIN	MICHELIN SYMMETRY	P215/70R15 SYMMETRY WW11 97S	78607	
890	N	195	65	15	91	H					REP			8.6	Michelin	447	MI	MICHELIN	MICHELIN MXV4 (H)	195/65R1591H ENER.MXV4 PL		
891	N	225	60	16	98	T	600	A	A	10.0	REP		26.50	8.5	Michelin	448	MI	MICHELIN	MICHELIN SYMMETRY	225/60R16 SYMMETRY 98T	85237	
892	P	195	70	14	90	S	740	A	B	10.0	REP		24.50	10.1	Michelin	449	MI	MICHELIN	MICHELIN X RADIAL DT	P195/70R14 90S X RAD DT	29698	
893	P	225	60	16	97	T	800	A	B	11.0	REP		26.50	9.2	Michelin	450	MI	MICHELIN	MICHELIN HYDROEDGE	P225/60R16 HYDROEDGE 97T XSE	48852	
894	P	225	60	16	97	T	500	A	A	10.0	OE		26.60	8.5	Michelin	451	MI	MICHELIN	MICHELIN ENERGY LX4	P225/60R16 EN.LX4 FOR0340	46562	
895	P	185	65	14	85	S	740	A	B	10.0	REP		23.40	9.7	Michelin	452	MI	MICHELIN	MICHELIN X RADIAL DT	P185/65R14 85S X RAD DT	34385	
896	P	205	70	15	95	S	740	A	B	10.0	REP		26.10	11.5	Michelin	453	MI	MICHELIN	MICHELIN X RADIAL DT	P205/70R15 95S X RAD DT	25498	
897	N	195	60	15	88	H					REP			9.3	Michelin	454	MI	MICHELIN	MICHELIN MXV4 (H)	195/60R15 EN MXV4 PLUS XSE 88H		
898	N	235	65	16	103	T	500	A	B	10.0	REP		27.90	9.8	Michelin	455	MI	MICHELIN	MICHELIN ENERGY LX4	235/65R16 103T ENERGY LX4	95649	
899	P	225	60	16	97	H					REP			10.9	Michelin	456	MI	MICHELIN	MICHELIN MXV4 (H)	P225/60R16 EN MXV4 PLUS XSE97H		
900	N	195	65	15	91	H	400	A	A	10.5	REP		25.00	10.9	Michelin	457	MI	MICHELIN	MICHELIN PILOT EXALTO A/S	195/65R15 91H PILOT EXALTO A/S	16529	
901	P	225	60	17	98	T	500	A	A	10.5	REP		27.60	8.2	Michelin	458	MI	MICHELIN	MICHELIN ENERGY LX4	P225/60R17 EN LX4 XSE 98T	67844	
902	N	205	65	15	94	H	400	A	A	10.5	REP		25.50	10.5	Michelin	459	MI	MICHELIN	MICHELIN PILOT EXALTO A/S	205/65R15 94H PILOT EXALTO A/S	18569	
903	P	195	65	15	89	H					REP			8.4	Michelin	460	MI	MICHELIN	MICHELIN MXV4 (H)	P195/65R15 EN MXV4 PLUS XSE89H		
904	P	215	65	16	96	T	600	A	B	10.0	REP		26.80	9.2	Michelin	461	MI	MICHELIN	MICHELIN SYMMETRY	P215/65R16 SYMMETRY GRNX 96T	67990	
905	P	215	70	15	97	S	740	A	B	10.0	REP		26.60	9.7	Michelin	462	MI	MICHELIN	MICHELIN X RADIAL DT	P215/70R15 97S X RAD DT	8191	
906	P	205	65	15	92	S	740	A	B	10.0	REP		25.30	9.9	Michelin	463	MI	MICHELIN	MICHELIN X RADIAL DT	P205/65R15 92S X RAD DT	24474	
907	P	225	60	16	97	S	740	A	B	11.0	REP		26.40	9.6	Michelin	464	MI	MICHELIN	MICHELIN HARMONY	P225/60R16 97S HARMONY	24403	
908	P	185	70	14	87	S	740	A	B	10.0	REP		24.00	10.5	Michelin	465	MI	MICHELIN	MICHELIN X RADIAL DT	P185/70R14 87S X RAD DT	8663	
909	P	175	70	13	82	S	740	A	B	10.0	REP		22.40	11.7	Michelin	466	MI	MICHELIN	MICHELIN X RADIAL DT	P175/70R13 82S X RAD DT	7223	
910	P	225	60	16	97	S	600	A	B	10.0	REP		26.50	8.9	Michelin	467	MI	MICHELIN	MICHELIN SYMMETRY	P225/60 R16 97S SYMMETRY	43798	

sort#	Prefix or Tire Type	section width	aspect ratio	rim diam	Load Index	Speed Rating	Treadwear	Traction	Temp	Tread Depth	Market	average weight	average OD	avg RRC	Source	Group or other ID number	manufacturer	brand	model	Tire Size	Part number	serial number
911	P	225	60	16	97	S	600	A	B	10.0	REP		26.50	8.9	Michelin	468	MI	MICHELIN	MICHELIN SYMMETRY	P225/60 R16 97S SYMMETRY	43798	
912	P	205	65	15	92	T	600	A	B	10.0	REP		25.60	9.7	Michelin	469	MI	MICHELIN	MICHELIN SYMMETRY	P205/65R15 SYMMETRY 92T	43086	
913	P	225	60	17	98	T	500	A	A	10.5	OE		27.60	9.4	Michelin	470	MI	MICHELIN	MICHELIN ENERGY LX4	P225/60R17 EN LX4 XSE 98T FD	67844	
914	P	225	60	16	97	S	600	A	B	10.0	OE		26.50	9.0	Michelin	471	MI	MICHELIN	MICHELIN SYMMETRY	P225/60R16 SYMMETRYGRNX97SFD	98499	
915	N	205	55	16	91	H	400	A	A	10.5	REP		24.80	11.6	Michelin	472	MI	MICHELIN	MICHELIN PILOT EXALTO A/S	205/55R16 91H PILOT EXALTO A/S	29192	
916	P	225	60	16	97	T	500	A	A	10.0	OE		26.70	8.5	Michelin	473	MI	MICHELIN	MICHELIN ENERGY LX4	P225/60R16 EN LX4 FOR0938	94213	
917	N	215	65	16	98	T	800	A	B	11.0	REP		26.80	9.5	Michelin	474	MI	MICHELIN	MICHELIN HYDROEDGE	215/65R16 HYDROEDGE 98T	81152	
918	P	205	65	15	92	S	740	A	B	11.0	REP		25.40	10.3	Michelin	475	MI	MICHELIN	MICHELIN HARMONY	P205/65R15 HARMONY 92S	83556	
919	N	235	60	16	100	H					REP			9.3	Michelin	476	MI	MICHELIN	MICHELIN MXV4 (H)	235/60R16 EN MXV4 PLUS XSE100H		
920	P	225	60	17	98	T	500	A	A	10.5	REP		27.60	8.2	Michelin	477	MI	MICHELIN	MICHELIN ENERGY LX4	P225/60R17 EN LX4 WW XSE 98T	94860	
921	P	225	60	16	97	T	740	A	B	11.0	REP		26.40	9.8	Michelin	478	MI	MICHELIN	MICHELIN HARMONY	P225/60R16 97T HARMONY AM	24403	
922	P	205	70	15	95	S	600	A	B	10.0	REP		25.80	9.4	Michelin	479	MI	MICHELIN	MICHELIN SYMMETRY	P205/70R15 SYMMETRY WW 95S	51587	
923	N	225	55	16	95	H	400	A	A	10.0	REP		25.90	9.6	Michelin	480	MI	MICHELIN	MICHELIN MXV4 (H)	225/55R16 95H EN MXV4 PLUS DT	87064	
924	P	205	65	15	92	T	800	A	B	11.0	REP		25.30	10.0	Michelin	481	MI	MICHELIN	MICHELIN HYDROEDGE	P205/65R15 HYDROEDGE 92T	84218	
925	N	205	60	15	91	H					REP			9.4	Michelin	482	MI	MICHELIN	MICHELIN MXV4 (H)	205/60R15 EN MXV4 PLUS XSE 91H		
926	N	195	60	15	88	H	400	A	A	10.5	REP		24.00	11.0	Michelin	483	MI	MICHELIN	MICHELIN PILOT EXALTO A/S	195/60R15 88H PILOT EXALTO A/S	7374	
927	N	225	55	16	95	H	400	A	A	10.5	REP		25.80	10.9	Michelin	484	MI	MICHELIN	MICHELIN PILOT EXALTO A/S	225/55R16 95H PILOT EXALTO A/S	36771	
928	P	205	70	15	95	S	740	A	B	11.0	REP		26.10	12.1	Michelin	485	MI	MICHELIN	MICHELIN HARMONY	P205/70R15 95S HARMONY TL	23967	
929	P	235	55	17	98	H	400	A	A	10.0	REP		27.20	9.3	Michelin	486	MI	MICHELIN	MICHELIN MXV4 (H)	P235/55R17 EN MXV4 PLUS 98H	89205	
930	P	215	65	15	95	S	740	A	B	10.0	REP		25.80	9.5	Michelin	487	MI	MICHELIN	MICHELIN X RADIAL DT	P215/65R15 95S X RAD DT	21894	
931	N	225	55	17	97	H					REP			8.8	Michelin	488	MI	MICHELIN	MICHELIN MXV4 (H)	225/55R17 EN MXV4 PLUS XSE 97H		
932	N	215	65	16	98	S	740	A	B	11.0	REP		26.80	9.4	Michelin	489	MI	MICHELIN	MICHELIN HARMONY	215/65R16 HARMONY 98S	32229	
933	N	195	65	15	91	H	440	A	A	9.5	OE		25.10	10.0	Michelin	490	MI	MICHELIN	MICHELIN MXV4 (H)	195/65R15 91H ENMXV4S8 VWG0389	71716	
934	P	215	60	16	94	S	740	A	B	11.0	REP		26.00	9.4	Michelin	491	MI	MICHELIN	MICHELIN HARMONY	P215/60R16 HARMONY 94S	5732	
935	P	225	60	17	98	T	500	A	A	10.5	OE		27.60	9.6	Michelin	492	MI	MICHELIN	MICHELIN ENERGY LX4	P225/60R17 EN LX4 WW XSE 98TFD	94860	
936	P	215	70	15	97	T	800	A	B	11.0	REP		26.60	10.0	Michelin	493	MI	MICHELIN	MICHELIN HYDROEDGE	P215/70R15 HYDROEDGE 97T	15059	
937	P	215	70	15	97	S	740	A	B	11.0	REP		26.60	10.0	Michelin	494	MI	MICHELIN	MICHELIN HARMONY	P215/70R15 97S HARMONY TL	29325	
938	N	195	65	15	91	Q				11.0	REP		25.00	9.5	Michelin	495	MI	MICHELIN	MICHELIN X-ICE	195/65R15 91Q X-ICE BW	34409	
939	P	195	65	15	89	S	740	A	B	10.0	REP		24.70	9.4	Michelin	496	MI	MICHELIN	MICHELIN X RADIAL DT	P195/65R15 89S X RAD DT	18459	
940	N	215	65	16	98	S					REP			8.5	Michelin	497	MI	MICHELIN	MICHELIN MX4	215/65R16 MX4 98S		
941	P	195	65	15	89	S	740	A	B	11.0	REP		24.80	9.9	Michelin	498	MI	MICHELIN	MICHELIN HARMONY	P195/65R15 HARMONY 89S	14492	
942	P	195	65	15	89	T	800	A	B	11.0	REP		24.70	10.5	Michelin	499	MI	MICHELIN	MICHELIN HYDROEDGE	P195/65R15 HYDROEDGE 89T XSE	91261	
943	P	205	75	15	97	S	740	A	B	10.0	REP		26.80	10.2	Michelin	500	MI	MICHELIN	MICHELIN X RADIAL DT	P205/75R15 97S X RAD DT	14729	
944	P	175	70	13	82	S	740	A	B	11.0	REP		22.50	12.1	Michelin	501	MI	MICHELIN	MICHELIN HARMONY	P175/70R13 HARMONY 82S	4483	
945	N	205	60	15	91	H	400	A	A	10.5	REP		24.50	11.8	Michelin	502	MI	MICHELIN	MICHELIN PILOT EXALTO A/S	205/60R15 91H PILOT EXALTO A/S	27549	
946	P	185	65	15	86	T	740	A	B	10.0	REP		24.40	10.9	Michelin	503	MI	MICHELIN	MICHELIN X RADIAL DT	P185/65R15 86T X RAD DT	25649	
947	P	225	60	16	97	S					REP			9.3	Michelin	504	MI	MICHELIN	MICHELIN AGILITY	P225/60R16 97S AGILITY TRG		
948	P	225	55	17	95	T	800	A	B	11.0	REP		26.60	9.2	Michelin	505	MI	MICHELIN	MICHELIN HYDROEDGE	P225/55R17 HYDROEDGE 95T	76712	
949	P	215	60	16	94	S	740	A	B	10.0	REP		25.90	9.1	Michelin	506	MI	MICHELIN	MICHELIN X RADIAL DT	P215/60R16 X RAD DT 94S	3179	
950	P	205	70	15	95	T	800	A	B	11.0	REP		26.10	10.2	Michelin	507	MI	MICHELIN	MICHELIN HYDROEDGE	P205/70R15 HYDROEDGE 95T	40433	
951	N	205	55	16	91	H	400	A	A	10.0	REP		24.90	10.3	Michelin	508	MI	MICHELIN	MICHELIN MXV4 (H)	205/55R16 EN MXV4 PLUS* XSE91H	79258	
952	P	205	55	16	89	S	740	A	B	11.0	REP		24.80	11.8	Michelin	509	MI	MICHELIN	MICHELIN HARMONY	P205/55R16 HARMONY 89S	4293	
953	P	225	55	17	95	H	400	A	A	10.0	REP		26.80	10.2	Michelin	510	MI	MICHELIN	MICHELIN MXV4 (H)	P225/55R17 95H EN MXV4 PL XSE	93496	
954	P	205	55	16	89	T	800	A	B	11.0	REP		24.80	10.7	Michelin	511	MI	MICHELIN	MICHELIN HYDROEDGE	P205/55R16 HYDROEDGE 89T	41008	
955	P	185	65	14	85	S	740	A	B	11.0	REP		23.40	10.9	Michelin	512	MI	MICHELIN	MICHELIN HARMONY	P185/65R14 HARMONY 85S	9896	
956	P	215	70	15	97	S					REP			10.2	Michelin	513	MI	MICHELIN	MICHELIN AGILITY	P215/70R15 AGILITY 97S		
957	P	205	65	16	94	T	800	A	B	11.0	REP		26.30	10.7	Michelin	514	MI	MICHELIN	MICHELIN HYDROEDGE	P205/65R16 94T HYDROEDGE RRBL	58544	
958	P	215	60	16	94	T	800	A	B	11.0	REP		26.00	10.1	Michelin	515	MI	MICHELIN	MICHELIN HYDROEDGE	P215/60R16 HYDROEDGE 94T	95885	
959	P	185	70	14	87	S	740	A	B	11.0	REP		24.10	10.6	Michelin	516	MI	MICHELIN	MICHELIN HARMONY	P185/70R14 87S HARMONY TL	32201	
960	P	225	60	16	97	S	740	A	B	11.0	REP		26.40	9.7	Michelin	517	MI	MICHELIN	MICHELIN DESTINY	P225/60R16 97S DESTINY	17535	
961	P	205	75	14	95	S	740	A	B	10.0	REP		25.80	10.4	Michelin	518	MI	MICHELIN	MICHELIN X RADIAL DT	P205/75R14 X RAD DT 95S	987	
962	P	195	70	14	90	S	740	A	B	11.0	REP		24.60	10.5	Michelin	519	MI	MICHELIN	MICHELIN HARMONY	P195/70R14 HARMONY 90S	12013	
963	P	195	60	15	87	S	740	A	B	11.0	REP		24.00	11.4	Michelin	520	MI	MICHELIN	MICHELIN HARMONY	P195/60R15 HARMONY 87S	63007	
964	P	235	60	16	99	T	800	A	B	11.0	REP		26.90	10.5	Michelin	521	MI	MICHELIN	MICHELIN HYDROEDGE	P235/60R16 HYDROEDGE 99T	93115	
965	P	205	70	15	95	S					REP			10.7	Michelin	522	MI	MICHELIN	MICHELIN AGILITY	P205/70R15 AGILITY 95S		
966	N	185	65	15	88	Q				10.5	REP		24.40	10.0	Michelin	523	MI	MICHELIN	MICHELIN X-ICE	185/65R15 88Q X-ICE BW	70957	
967	P	185	65	14	85	T	800	A	B	11.0	REP		23.30	10.8	Michelin	524	MI	MICHELIN	MICHELIN HYDROEDGE	P185/65R14 HYDROEDGE 85T	52599	
968	P	195	65	15	89	H					REP			12.6	Michelin	525	MI	MICHELIN	MICHELIN XGTH4	P195/65R15 PILOT XGTH4 89H		
969	N	215	60	17	96	T	800	A	B	11.0	REP		27.00	10.6	Michelin	526	MI	MICHELIN	MICHELIN HYDROEDGE	215/60R17 HYDROEDGE 96T	99103	
970	N	225	60	16	98	Q				11.0	REP		26.60	9.0	Michelin	527	MI	MICHELIN	MICHELIN X-ICE	225/60R16 98Q X-ICE	65855	
971	N	205	65	15	92	S				11.0	REP		25.50	9.6	Michelin	528	MI	MICHELIN	MICHELIN X-ICE	205/65R15 94Q X-ICE	56209	
972	N	205	55	16	91	H	400	A	A	10.0	OE		24.90	10.2	Michelin	529	MI	MICHELIN	MICHELIN MXV4 (H)	205/55R16 ENMXV4PL DT GMO0627	71970	
973	N	205	55	16	91	H	440	A	A	9.5	OE		25.10	10.7	Michelin	530	MI	MICHELIN	MICHELIN MXV4 (H)	205/55R16 91H ENMXV4S8 VWG0390	89947	
974	P	215	55	16	91	T	800	A	B	11.0	REP		25.10	11.3	Michelin	531	MI	MICHELIN	MICHELIN HYDROEDGE	P215/55R16 HYDROEDGE 91T	46677	
975	N	215	70	15	98	Q				11.0	REP		26.90	9.5	Michelin	532	MI	MICHELIN	MICHELIN X-ICE	215/70R15 98Q X-ICE BW	51643	

sort#	Prefix or Tire Type	section width	aspect ratio	rim diam	Load Index	Speed Rating	Treadwear	Traction	Temp	Tread Depth	Market	average weight	average OD	avg RRC	Source	Group or other ID number	manufacturer	brand	model	Tire Size	Part number	serial number
976	P	225	55	16	94	H					REP			11.9	Michelin	533	MI	MICHELIN	MICHELIN XGTH4	P225/55R16 PILOT XGTH4 94H		
977	P	195	60	15	87	T	800	A	B	11.0	REP		24.00	11.7	Michelin	534	MI	MICHELIN	MICHELIN HYDROEDGE	P195/60R15 HYDROEDGE 87T	68126	
978	N	205	75	14	109	P					REP			10.8	Michelin	545	MI	MICHELIN	MICHELIN XCA	205/75R14 XCA 109P/LRD		
979	N	305	40	22	114	V	420	A	A	11.0	REP	45	31.8	7.39	TOYO	1	TOYO	TOYO	PXST	305/40R22		CXPR 7ME
980	P	225	70	16	101	S	500	A	B	13.0	REP	28	28.4	8.68	TOYO	2	TOYO	TOYO	OPAT	P225/70R16		CXWA 8EX
981	P	265	70	16	111	T	500	A	B	13.0	REP	39	30.6	8.71	TOYO	3	TOYO	TOYO	OPAT	P265/70R16		CXLJ AE3
982	N	225	45	17	94	Y	280	AA	A	10.0	REP	23	24.9	10.03	TOYO	5	TOYO	TOYO	PXT1R	225/45R17		CXH8 AMP
983	N	225	40	18	92	W	300	AA	A	10.0	REP	22	25.1	7.96	TOYO	6	TOYO	TOYO	PX4	225/40R18		CXT7 9WC
984	N	215	60	16	95	V	400	AA	A		REP			9.96	TOYO	7	TOYO	TOYO	TYVSL	215/60R16		CXF1 DV6
985	P	185	65	15	86	T	700	A	B		REP			9.42	TOYO	8	TOYO	TOYO	800U	P185/65R15		CXLX 49V
986	P	205	70	15	95	T	700	A	B		REP			8.40	TOYO	9	TOYO	TOYO	800U	P205/70R15		CXYT 586
987	N	215	70	15	98	T	700	A	B		REP			9.27	TOYO	10	TOYO	TOYO	800U	215/70R15		CX60 49V
988	N	215	70	15	98	T	700	A	B		REP			8.63	TOYO	11	TOYO	TOYO	TYTVL	215/70R15		CX34 DLA
989	N	205	70	15	96	T	700	A	B		REP			8.81	TOYO	12	TOYO	TOYO	TYTVL	205/70R15		CXYT DLA
990	N	195	60	15	88	H	400	AA	A		REP			8.97	TOYO	13	TOYO	TOYO	TYTVL	195/60R15		CXCB KH3
991	P	215	70	15	97	S	580	A	B		REP			8.51	TOYO	14	TOYO	TOYO	TYSP	P215/70R15		CX60 DHW
992	P	155	80	13	79	S	500	A	B		REP			9.66	TOYO	15	TOYO	TOYO	TYSP	P155/80R13		CXUO 6LF
993	P	185	70	14	87	S	580	A	B		REP			9.42	TOYO	16	TOYO	TOYO	TYSP	P185/70R14		CXVE DHW
994	N	205	55	16	94	V	300	AA	A	10.0	REP	21	25.0	8.69	TOYO	17	TOYO	TOYO	PX4	205/55R16		CX8K 98L
995	N	225	45	17	94	W	300	AA	A	10.0	REP	23	25.1	8.84	TOYO	18	TOYO	TOYO	PX4	225/45R17		CXH8 9WC
996	N	195	50	15	86	W	300	AA	A	10.0	REP	17	22.8	9.66	TOYO	19	TOYO	TOYO	PX4	195/50R15		CX6K 98L
997	N	195	50	15	82	V	280	AA	A	10.0	REP	17	22.7	10.92	TOYO	20	TOYO	TOYO	PXT1R	195/50R15		CX6K ANH
998	N	195	55	15	85	V	280	AA	A	11.0	REP	18	23.3	10.77	TOYO	21	TOYO	TOYO	PXT1R	195/55R15		CX8N ANH
999	N	205	55	16	91	W	280	AA	A	11.0	REP	22	24.8	9.58	TOYO	22	TOYO	TOYO	PXT1R	205/55R16		CX8K AYK
1000	P	235	75	15	105	S	500	A	B	13.0	REP	29	28.9	9.28	TOYO	23	TOYO	TOYO	OPAT	P235/75R15		CXBN 795
1001	P	225	75	15	102	S	500	A	B	13.0	REP	27	28.3	8.75	TOYO	25	TOYO	TOYO	OPAT	P225/75R15		CXR3 8AX
1002	P	245	65	17	105	H	640	A	A	13.0	REP	34	29.5	8.81	TOYO	26	TOYO	TOYO	OPHT	P245/65R17		CX9R CA2
1003	P	265	65	17	110	S	640	A	B	13.0	REP	40	30.5	8.75	TOYO	27	TOYO	TOYO	OPHT	P265/65R17		CX7Y 472
1004	N	255	65	16	109	H	640	A	A	13.0	REP	34	29.1	8.66	TOYO	28	TOYO	TOYO	OPHT	255/65R16		CX6D CCP
1005	N	285	35	22	106	W	420	A	A	11.0	REP	37	29.8	8.33	TOYO	29	TOYO	TOYO	PXST	285/35R22		CXU3 CD9
1006	N	305	50	20	120	V	420	A	A	12.0	REP	49	32.8	7.50	TOYO	30	TOYO	TOYO	PXST	305/50R20		CXK8 77C
1007	P	275	60	15	107	H	420	A	A	11.0	REP	30	28.0	8.76	TOYO	31	TOYO	TOYO	PXST	P275/60R15		CX88 EE3

White Paper

Self Certification to NHTSA's Vehicle Safety Standards and Consumer Information Regulations

H. Keith Brewer, Ph.D.¹

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Manufacturer Obligation Under Federal Law

Under United States Federal Law it is the responsibility of a manufacturer of vehicles and/or items of motor vehicle equipment to certify that each of its regulated products is in full compliance with the performance requirements of all applicable Federal Motor Vehicle Safety Standards (FMVSSs) and consumer information regulations. This is a **self-certification** process. Under self-certification, the burden for ensuring that all new vehicles and equipment comply with Federal safety and consumer information regulations is borne solely by the manufacturer. The Federal government does not stipulate a means by which manufacturers may meet their certification burden. Instead it left to the manufacturer to take whatever actions it deems necessary to certify that their products meet requirements of all Federal regulations. This usually means laboratory testing in accordance with the specific requirements of the FMVSS or conducting other studies or analyses (due care process) to ensure that its products fully comply. However, as guidance, the Federal government does make publically available the specific test procedures that it intends to employ to confirm that a manufacturer's product is in compliance.

In the United States, manufacturers must not only be concerned with the initial certification, but must also monitor continued compliance of vehicles and vehicle equipment throughout the production run. This requires the establishment of a comprehensive quality control program to periodically inspect and test vehicles and equipment randomly selected from the assembly line to ensure that the original performance is carried through the entire production cycle.

¹ Dr. Brewer is a tire regulatory expert with 26 years experience at the National Highway Traffic Safety Administration (NHTSA). During his tenure at NHTSA, Dr. Brewer provided significant tire knowledge and experience to the regulatory process. He managed several tire-related rulemakings during the implementation of the Transportation Recall Enhancement, Accountability and Documentation Act (TREAD Act), which was enacted by the U.S. Congress on November 1, 2000. Dr. Brewer retired from NHTSA at the end of 2006. In 2007, he joined the staff of the Rubber Manufacturers Association. Dr. Brewer brings significant expertise and regulatory perspective to the tire industry. Prior to joining NHTSA, Dr. Brewer worked for B.F. Goodrich in Akron, Ohio. Dr. Brewer holds a Bachelors Degree in Mechanical Engineering from Cleveland State University and Masters and PhD degrees in Engineering Mechanics from Ohio State University. Dr. Brewer can be reached at (202) 682-4838 or kbrewer@rma.org.

Since NHTSA does not stipulate to manufacturers how certification is to be performed, it likewise does not specify the type of quality control program that a manufacturer must put in place to ensure continued compliance. That decision is left to the manufacturer. If the vehicle or vehicle equipment is designed with a reasonable factor of safety, the manufacturer may elect to have a selective sample surveillance program to demonstrate that production variations will not take the vehicle or equipment out of the range of full compliance. On the other hand, if the margin of safety were less with respect to the required performance, a more stringent quality control program must be implemented.

Insuring Compliance with NHTSA Safety standards and Regulations

NHTSA's Office of Vehicle Safety Compliance (OVSC) has the responsibility of ensuring that all motor vehicles and motor vehicle equipment under its jurisdiction are in full compliance with all Federal laws, standards and regulations pertinent to vehicle safety, and consumer information. To carry out this responsibility this office annually conducts an extensive compliance test program of the agency's various vehicle and equipment safety standards and regulations. In this test program compliance engineers randomly select samples of motor vehicles and equipment from the marketplace and test them to the requirements of NHTSA safety standards and consumer information regulations to verify compliance. A cadre of independent automotive test laboratories under contract to NHTSA carries out the actual test program. In the event that a laboratory determines that there may be a non-compliance or test failure it is thoroughly documented in a test report that is submitted to NHTSA. This action triggers an internal investigation by NHTSA compliance engineers that may ultimately lead to an owner notification and remedy campaign (e.g., product recall) and a civil penalty.

During this investigative phase NHTSA engineers work closely with the manufacturer, to identify and resolve the failure issue. Typically, this procedure will lead to corrective action in the form of a redesigned vehicle component or equipment item or an improvement in the manufacturer's quality control process. Generally manufacturers cooperate fully with the Agency during investigations and institute changes when it becomes clear that a modification in the vehicle or equipment design or production procedures is required in order to return to full compliance. It is in the best interests of manufacturers to maintain a strong quality control program in the design and production of their products to avoid the severe financial and marketplace consequences of a determination of non-compliance by the Federal government. Federal law allows NHTSA to levy civil fines for non-compliance with its regulations of up to \$6,000 per occurrence with a maximum of \$16,375,000 for a related series of violations.

Test Procedures Development and Compliance Testing

The agency's Federal Motor Vehicle Safety Standards and regulations specify the minimum performance requirements and, in very general terms, the objective tests required to demonstrate product compliance. From these general regulatory requirements, the agency develops and publishes detailed Laboratory Test Procedures for each of its standards and

regulations. These Test Procedures provide step-by-step instructions on how the compliance test is to be conducted as well as specifying the types of laboratory test apparatus to be used, testing tolerances, equipment calibration requirements, check sheets, and reporting requirements. The test procedure documents serve a dual purpose. First, they provide detailed instructions to the contract test laboratories for conducting compliance testing. This is essential for maintaining the quality, objectivity, and integrity of the self-certification process. Secondly, these documented test procedures provide manufacturers with a thorough guidelines for ensuring that their products meet not only the Federal minimum performance standards but also for establishing their own product quality surveillance program by testing more stringently than required by government regulations. This ensures that there is an adequate margin of safety in all of their products.

Prior to the initiation of a compliance test on a specific vehicle or item of equipment, a contract laboratory must prepare and submit to NHTSA its own internal test procedure document for approval. The internal procedure must include a step-by-step description of the methodology that the laboratory will use. The contractor's test procedure must provide a complete listing of test equipment with make and model number and a detailed check-off sheet. The list of test equipment must also include instrument accuracy and calibration dates. All equipment must be calibrated in accordance with the manufacturer's instructions. There must be no contradictions between the agency's Laboratory Test Procedure document and the contractor's in-house test procedure.

Selecting Independent Contract Test Laboratories

NHTSA does not own or operate the testing facilities required to conduct its compliance tests. Instead, testing is contracted out to 21 independent testing laboratories located throughout the country (Arizona, California, Georgia, Michigan, Nevada, New Jersey, New York, Ohio, Tennessee, Texas, Virginia and Wisconsin). Proposals for conducting compliance testing to specific safety standards and regulations are solicited on a competitive basis from those organizations with the requisite technical expertise and capability in the vehicle or equipment-testing field. The proposals are evaluated in accordance with normal federal procurement procedures and a laboratory selection made on the basis of the proposer's capability to conduct all phases of compliance tests as outlined in the particular Federal Motor Vehicle Safety Standard as well as the quoted price per test.

The initial step in developing the annual compliance test program is to survey the makes, models, styles and types of vehicles and items of equipment that are available in the marketplace. Following this general information gathering process, specific vehicle and equipment selection matrices are developed which include new entries into the marketplace, new designs, past failures, consumer complaints, etc. Since it is not possible to test all vehicle makes and models or vehicle equipment, an effort is made to select new entries and high volume items. Vehicles are purchased directly from new vehicle dealerships with the equipment options that are specified by NHTSA safety compliance engineers. Separate equipment items are selected at random from manufacturing plants, distribution centers or retail stores. This approach is used by NHTSA to ensure that the test specimens selected are a true representation of the products that could be purchased by the consumer.

Test Tolerance and Accuracy

The conduct of compliance tests is materially different from research and development testing. In compliance testing, it is essential that the test be conducted within the precise conditions specified in the safety standard or regulation. Since the consequence of a test failure can lead to a costly owner notification and remedy campaign (recall) along with a severe civil penalty for the manufacturer, NHTSA must be certain that the test result can withstand thorough technical scrutiny. Consequently, NHTSA exerts great effort to ensure that its compliance test data are fair, accurate, and completely objective. As a general approach, test condition tolerances are set on the conservative side, and the width of the tolerance band in any compliance test is established based on the accuracy of test equipment utilized.

NHTSA safety compliance engineers conduct regular inspections of contract testing laboratories to make certain that the correct procedures are being followed and that test results are of the highest accuracy. This includes verifying that required instrumentation is in place, functional, and the calibration data is within specification and up to date, and that correct test protocols are implemented. This program helps to ensure that the laboratory's in-house testing procedures and equipment are fully capable of evaluating compliance with NHTSA safety standards and regulations.

Preliminary Evaluations and Compliance Investigations

The failure of a compliance test specimen may indicate a potential design or production problem. Test failures of this nature trigger a comprehensive technical investigation by NHTSA compliance engineers. One of the first actions taken is to notify the manufacturer of the test failure results. This permits the manufacturer to immediately take action to check the adequacy of the vehicles or items of motor vehicle equipment involved. The manufacturer then has the option of attending a technical review meeting at the test laboratory with a NHTSA compliance engineer. During this meeting, the manufacturer's technical representatives are afforded the opportunity to review the test procedure, test instrument calibration, detailed test results, examine the failed vehicle or equipment item, and question the laboratory personnel. This is followed by the initiation of a Preliminary Evaluation (PE) file. A PE letter is sent to the manufacturer requesting test data upon which the original certification was based along with inspection and other quality control information. A NHTSA compliance engineer conducts a detailed review and analysis of this information. After completion of this analysis, a technical meeting is held with the manufacturer's representatives to discuss any unresolved issues and any planned owner notification and remedy action to be taken by the manufacturer. Following this meeting, NHTSA makes a determination as to whether there is sufficient evidence of a regulatory non-compliance to proceed to the next level – an official Compliance Investigation (CI). A CI letter may be sent to the manufacturer requesting additional information. A retest also may be conducted using an identical vehicle or item(s) of motor vehicle equipment.

After all information is collected, NHTSA compliance engineers conduct an intensive analysis of the data with particular interest paid to the tests conducted by the manufacturer for the original certification and in-process quality control. In addition, the certification test procedures and equipment used by the manufacturer are reviewed. Any differences between the manufacturer's certification test results and the NHTSA compliance test results are analyzed and an attempt is made to ascertain the reasons for such differences.

Based on all of the information available, NHTSA's Director of the Office of Vehicle Safety Compliance makes a decision to either close the PE file or CI file if a noncompliance is not indicated or to proceed with the investigation. A letter is sent to the manufacturer notifying him that the agency is proceeding with the investigation and that the initiation of a recall campaign by the manufacturer is warranted. If there is no recall campaign announced by the manufacturer, then an initial determination of noncompliance is made by the Associate Administrator for Safety Assurance and the case is referred to the Chief Counsel's office for appropriate legal action.

Once the case is forwarded to the Chief Counsel's office, the processing procedure is more formal. In accordance with Public Law 89-563, the complete process requires that after the initial decision of noncompliance is made by the Associate Administrator for Safety Assurance, a public hearing is held to afford the manufacturer or any other interested party an opportunity to present their views and then a final determination of noncompliance may be made by the NHTSA Administrator.

Summary

A self-certification program exists in the United States. The NHTSA does not certify that vehicles or items of motor vehicle equipment meet the requirements of various Federal Motor Vehicle Safety standards and consumer regulations or issue approval stickers, labels, certificates, etc. Each year NHTSA randomly selects vehicles and items of motor vehicle equipment for compliance testing by approximately 21 independent contract testing laboratories to verify that the manufacturer's certification is valid. The NHTSA compliance-testing program is a strong incentive for manufacturers of vehicles and/or items of motor vehicle equipment to institute and maintain a strong quality control/product surveillance program.