

Michelin maintains top tire maker title

By Bruce Davis

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With a few notable exceptions, major players in the global tire industry enjoyed growth in sales and earnings in fiscal 2022. After all was said and done, the top of the ranking is very familiar: the top 11 companies hold the same position as the year before.

Michelin retained the No. 1 ranking with tire-related revenue of \$28.3 billion, comfortably ahead of No. 2 Bridgestone's estimated tire-centric total of \$26.6 billion. Goodyear—with a full year of revenue from the Cooper Tire & Rubber assets acquired in early 2021 now incorporated and Continental A.G. are ensconced comfortably at Nos. 3 and 4, with revenue of \$17.9 billion and \$12.4 billion, respectively. Goodyear's acquisition of Cooper has been

central to the company's growth of nearly 43 percent since 2019, the last full year before the COVID-19 pandemic took root. The first change comes at No. 12, occupied

this year by China's Sailun Group Co. Ltd., based on fiscal 2022 revenue of \$3.29 billion. The vast majority—22 of the 27—publicly held companies tracked for this report enjoyed double-digit growth in fiscal 2022 over 2021 as the world's major market economies continued to rebound from the depths of the COVID-19-induced economic malaise of 2020 and the recovery year of 2021.

Michelin and Kumho Tire Co. Inc. topped the growth charts with revenue improvements of 39.7 percent and 36.8 percent, respectively. Only the Taiwanese companies Cheng Shin Rubber Industries Ltd. and Nankang Rubber Tire Corp. reported lower sales last year versus 2021. Exceptions to the strong growth trend

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were companies from China, the majority of which saw sales decline, dragged down by a sluggish domestic market and the continued existence of trade barriers in place by a growing number of international markets. Sailun Group was one of the few to report increased sales last year over 2021.

The scale and impact of the U.S.' import duties on Chinese products are well documented. More recently, South Africa imposed a package of antidumping duties on new pneumatic tires originating from China. On July 28, the International Trade Commission of South Africa (ITAC) announced duties ranging from 7.18 percent to 43.6 percent on passenger and truck/bus tires manufactured in China.

According to ITAC, the "dumped imports" gained market share while the domestic industry lost market share, and it is "unable to produce at full capacity."

At the same time, authorities in Mexico are evaluating potential import duties on tires from China in response to petitions from the domestic tire manufacturing industry there. Any potential action there is not expected before 2024, however, sources indicate.

Apples-to-apples evaluation

Overall, the size of the global market, as expressed in U.S. dollars, grew only marginally as shifting currency exchange rates ate into sales gains many companies enjoyed in their home reporting currencies.

Rubber News translates the various tire makers' revenues into dollars using an average annual exchange rate, so as to avoid temporary swings in the values of various currencies.

Nevertheless, the averages for 2022 versus 2021 for most of the major currencies shifted measurably, by double-digits in many cases, as many other national economies fared worse than the U.S.

The value of the Japanese yen/U.S. dollar exchange rate, for example, shifted 20 percent year over year. The euro/dollar rate moved 12.4 percent.

That anomaly meant most of the revenue gains reported by the leading tire makers in their home reporting currencies were for the most part negated when being reported in dollars.

The retrenchment on the part of many Chinese companies and the currency-rate situation combined to leave the estimated world value of the tire industry only marginally better than that for 2021—\$188.6 billion versus \$188 billion.

Fiscal 2022 sales & earnings comparison

Company	Sales \$ millions	vs '21	Operating earnings	vs '21	% of sales	Net earnings	vs '21	% of sales
Continental A.G.	\$41,439.4	16.7%	\$4,170.3	-3.4%	10.1%	\$70.0	-95.4%	0.2%
Tire Division	14,726.9	18.6%	\$2,781.0	4.7%	18.9%	N.A.		
Bridgestone Corp.	\$31,303.1	26.6%	\$3,675.6	22.4%	11.7%	\$2,287.9	-23.8%	7.3%
Tire Division	\$29,111.9	29.6%	\$3,866.0	23.1%	13.3%	N.A.	_	
Michelin	\$30,063.1	39.7%	\$3,571.0	14.5%	11.9%	\$2,111.5	8.8%	7.0%
Goodyear Tire & Rubber Co.	\$20,085.0	19.0%	\$1,276.0	-0.9%	6.4%	\$764.0	N.M.	
Sumitomo Rubber	\$8,367.6	17.4%	\$167.3	-57.7%	2.0%	\$94.9	-58.4%	1.1%
Tire Division	\$7,169.3	18.1%	\$93.8	-71.6%	1.3%	N.A.	—	
Pirelli & C. S.p.A.	\$6,956.5	24.0 %	\$1,028.2	19.9%	14.8%	\$458.4	35.5%	6.6%
Yokohama Rubber Co. Ltd.	\$6,553.5	23.7%	\$533.9	12.7%	8.1%	\$349.6	-29.9%	5.3%
Tire Division ¹	\$5,744.9	30.6%	\$508.8	16.7%	8.8%	N.A.	—	_
Hankook Tire & Technology Ltd.	\$6,505.1	17.5%	\$962.2	N.A.	14.8%	\$546.9	18.7%	8.4 %
Zhongce Rubber Group	\$4,797.5	5.3%	N.A.	_	_	N.A.	—	—
Toyo Tire Corp.	\$3,786.8	26.3 %	\$507.4	16.1%	13.4%	\$365.2	16.0 %	9.7%
Tire Division	\$3,471.4	28.5%	\$501.7	12.5%	15.6%	N.A.	_	
Cheng Shin / Maxxis Intl.	\$3,676.9	-4.9%	\$224.0	-11.8%	6.1%	\$159.2	-16.6%	4.9 %
Sailun Group Co. Ltd.	\$3,293.6	21.7%	235.0	13.3%	7.1	N.A.	-	—
Apollo Tyres Ltd. ²	\$3,074.8	17.2%	\$181.9	154.1%	5.9 %	\$133.3	53.0 %	4.3%
MRF Ltd. ²	\$2,878.0	18.9 %	\$142.6	27.3%	5.0%	\$104.0	26.1 %	3.6 %
Kumho Tire Co. Inc.	\$2,758.0	36.8 %	\$219.0	N.A.	7.9 %	N.A.	—	—
Nexen Tire Corp.	\$2,327.9	25.0 %	-\$2.4	N.M.	N.M.	\$137.7	N.M.	1.2%
Nokian Tyres P.L.C.	\$1,869.5	3.6%	\$233.7	-31.9%	12.5%	-\$184.2	N.M.	N.M.
Titan International Inc.	\$2,169.4	21.9 %	\$253.0	87.4%	11.7%	\$140.0	185.7%	6.5 %
JK Tyre & Industries Ltd. ²	\$1,871.4	22.1 %	\$170.0	21.0 %	9.1%	\$33.6	30.8%	1.8 %
Ceat Tyres Ltd. ²	\$1,419.9	22.0 %	\$123.5	-27.5%	8.7%	\$23.7	161.5%	1.7%
Trelleborg Wheel Systems ³	\$1,312.3	31.8 %	\$173.9	45.6%	13.3%	N.A.	_	_
P.T. Gajah Tunggal	\$1,138.2	11.9%	\$167.8	10.2%	14.7%	-\$12.6	N.M.	N.M.
Balkrishna Industries Ltd. ²	\$1,250.5	18.7%	\$185.0	-25.8%	14.8%	\$137.5	-23.5%	11.0 %
BRISA-Bridgestone	\$857.0	16.0%	\$178.0	7.0 %	17.0%	\$121.0	8.0%	14.1%
Barez Industrial Group	\$340.0	N.A.	\$6.1	N.A.	1.8%	\$3.3	N.A.	1.0%
Nankang Rubber Tire Corp.	\$248.6	-8.2%	-\$13.7	-50.8%	N.M.	-\$34.4	4-fold	N.M.
Casumina	\$237.6	12.0%	\$4.3	57.7%	1.8%	\$4.5	-35.1%	2.0%
1 – Tire unit results combine YRC's traditional tire div	vision and the ATG off-	road tire business; 2 –	Fiscal year ended 3-31	-23; 3 – Reported as di	scontinuing operation	s by Trelleborg A.B.		

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2023 Global tire company rankings Based on 2022 results. Includes subsidiaries. (Figures in millions of dollars, translated at average annual currency e

2022 Rank	2021 Ranl	l k Company/Headquarters	20 Tire sales	% of total corp. sales	Tire sales	% of total corp. sales	202 Tire sales	% of total corp. sales	20' Tire sales	% of total corp. sales
1	1	Michelin [#] Clermont-Ferrand, France	*28,260.0	*94.0%	*26,295.0	*93.5%	*22,935.0	*93.0%	*25,000.0	*92.5%
2	2	Bridgestone Corp.# 1 Tokyo Japan	*26,600.0	*85.0%	*23,653.0®	*80.0%	*20,750.0	*74.0%	*24,325.0	*75.0%
3	3	Goodyear Tire & Rubber Co. ^{# 2}	17,892.3	86.0%	14,917.0	85.0%	10,399.0®	84.0%	12,524.0®	85.0%
4	4	Continental A.G.*	*12,420.0	*30.0%	*12,000.0	*30.0%	*9,908.0	*23.1%	*11,275.0	*22.6%
5	5	Sumitomo Rubber Industries Ltd.#	7,160.0	85.5%	7,249.6	90.6%	6,369.1	86.0%	7,060.0	85.9%
6	6	Pirelli & C. S.p.A. ^{# 3}	6,956.5	100.0%	6,340.2	100.0%	4,888.8	100.0%	5,935.0	100.0%
7	7	Hankook Tire & Technology Co. Ltd.	6,310.0	97.0%	5,975.8	95.7%	*5,305.0	*97.0%	*5,725.0	*97.0%
8	8	Yokohama Rubber Co. Ltd.⁴ Hiratsuka. Japan	5,744.9	87.7%	5,259.9	86.1%	4,349.0	81.4%	4,810.0	82.9%
9	9	Zhongce Rubber Group Co. Ltd.⁵ Hangzhou, China	4,175.8	94.3%	4,528.3	98.8%	3,896.2	98.0%	3,585.0	*98.0%
10	10	Maxxis International / Cheng Shin Rubber Yuanlin, Taiwan	3,676.9	100.0%	3,866.2	100.0%	3,788.7	100.0%	3,908.1	100.0%
11	11	Toyo Tire Corp. Hyogo, Japan	3,470.0	91.6%	3,226.6	90.0%	2,870.0	89.1%	3,060.0	88.2%
12	14	Sailun Group Co. Ltd. Dongying City, China	3,293.6	100.0%	2,823.0	100.0%	2,021.6	100.0%	2,038.5	100.0%
13	15	Apollo Tyres Ltd. ^ Kerala, India	3,136.9	100.0%	2,732.0	100.0%	2,296.7	100.0%	2,267.2	100.0%
14	16	MRF Ltd. ^ Chennai, India	2,876.1	*97%	2,476.2	96.6%	2,139.6	97.9%	2,201.8	97.1%
15	12	Giti Tire Pte. Ltd. ⁶ Singapore	*2,840.0	*95.0	*3,040.0	*95.0%	2,497.0	92.9%	3,100.0	98.3%
16	17	Kumho Tire Co. Inc. ⁷ Seoul, South Korea	2,758.8	100.0%	2,273.8	100.0%	1,841.1	100.0%	2,021.5	99.7%
17	13	Linglong Group Co. Ltd. Shandong, China	2,464.6	100.0%	2,914.1	100.0%	2,753.8	100.0%	2,400.4	100.0%
18	18	Nexen Tire Corp. ⁸ Seoul, South Korea	2,134.5	91.7%	1,969.8	93.7%	1,403.9	97.5%	1,821.0	88.0%
19	20	JK Tyre & Industries Ltd. ^ New Delhi, India	1,871.4	100.0%	1,595.6	100.0%	1,239.2	100.0%	1,223.7	100.0%
20	19	Nokian Tyres P.L.C. ^{# 1} Nokia, Finland	*1,765.0	*95.0%	*1,925.0	*95.0%	*1,420.0	*95.0%	*1,697.7	*95.0%
21	28	Titan International Inc. <i>Quincy, Illinois</i>	*1,735.0	*80.0%	*1,400.0	*80.0%	*1,007.0	*80.0%	*1,160.0	*80.0%
22	24	Ceat Ltd. ^ Mumbai, India	1,419.9	100.0%	1,212.6	100.0%	1,025.8	100.0%	950.6	100.0%
23	22	Double Coin Holdings Ltd. Shanghai, China	1,396.3	100.0%	1,373.5	100.0%	1,026.2	100.0%	1,009.6	100.0%
24	29	Kenda Rubber Industrial Co. Ltd. Yuanlin, Taiwan	1,379.2	100.0%	1,267.5	100.0%	1,080.7	100.0%	1,127.3	100.0%
25	21	Triangle Group Co. Ltd. Shandong, China	1,326.5	100.0%	1,404.5	100.0%	1,266.2	100.0%	1,125.1	100.0%
26	23	Prometeon Tyre Group S.r.l. ⁹ Milan, Italy	N.A.		1,308.0	100.0%	1,098.9	100.0%	*625.0	*100.0%
27	31	Balkrishna Industries Ltd. ^ Maharashtra, India	1,250.5	100.0%	1,056.6	97.3%	739.6	96.6%	685.8	99.7%
28	24	Prinx Chengshan (Shandong) Tire Co. Shandong, China	1,225.9	100.0%	1,176.8	100.0%	893.8	100.0%	775.9	100.0%
29	35	Trelleborg Wheel Systems S.p.A. ¹⁰ Tivoli, Italy	*1,175.0	89.0%	*900.0	*23.0%	*765.0	*21.5%	*775.0	*20.0
30	27	Guizhou Tyre Co. Ltd. Guiyang City, Guizhou, China	1,073.1	100.0%	1,151.3	100.0%	993.8	100.0%	894.0	100.0%
31	34	Sun-Tire & Wheel Systems Chennai, India	*1,000.0	100.0%	1,000.0	100.0%	1,000.0	100.0%	1,000.0	100.0%
32	26	Qingdao Doublestar Industrial Co. Ltd.⁷ <i>Qingdao, China</i>	958.5	100.0%	1,156.4	100.0%	756.9	100.0%	928.4	100.0%
33	39	Qingdao Sentury Tire Co. Ltd. (Sentaida Group) <i>Jimo, Shandong, Chin</i> a	910.8	100.0%	811.1	100.0%	727.7	100.0%	644.4	100.0%
34	32	Shandong Haohua Tyre Group Co. Ltd. Weifang, China	908.6	100.0%	1,018.9	100.0%	747.6	100.0%	1,504.3	100.0%
35	43	BRISA/Bridgestone-Sabanci Tire Mfg. ¹ Izmit, Turkey	849.5	100.0%	750.0	100.0%	601.8	100.0%	626.5	100.0%
36	37	Sichuan Haida Tyre Group Co. Ltd. Haida/Sichuan, China	764.4	100.0%	854.3	100.0%	623.9	100.0%	566.9	100.0%
37	41	Shandong Huasheng Rubber Co. Ltd. Dongying City, China	736.0	100.0%	773.0	100.0%	693.8	100.0%	624.4	100.0%
38	40	Shandong Changfeng Tire Co. Ltd. ¹¹ Dongying, Shandong, China	724.8	100.0%	806.5	100.0%	830.9	100.0%	> > > Previously Shandong Heng	reported as part of feng Tyre Co. Ltd.
39	36	Aeolus Tyre Co. Ltd. ⁹ Jiaozuo, China	689.4	100.0%	871.3	100.0%	838.5	100.0%	858.9	100.0%
~~	42	Shandong Weifang Yuelong Rubber Group ¹² Qingdao, China	N.A.	_	762.6	100.0%	706.0	100.0%	616.8	100.0%
40	44	O.J.S.C. Cordiant Moscow Russia	N.A.	-	*586.5	100.0%	*575.0	100.0%	660.0	100.0%

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Rubber News SPECIAL REPORT

2023 Global tire company rankings

Global Tire Report

	T	Based on 2022 results. Includes subsidia	ries. (Figures in	millions of dollars	s, translated at av	erage annual curre	ency exchange ra	tes)		
2022	2024		20 Tire	22 % of total	20 Tiro)21 % of total	202 Tiro	20 % of total	201	9 v of total
Rank	Rank	Company/Headquarters	sales	% of total corp. sales	sales	% of total corp. sales	sales	corp. sales	sales	corp. sales
41	45	Shandong Wanda Tyre Co. Ltd. Dongying City, China	680.4	100.0%	708.5	100.0%	696.9	100.0%	602.1	100.0%
42	50	Carlstar Group L.L.C. Jackson, Tennesee	*680.0	*90.0%	*575.0	*90.0%	510.0	86.5%	520.0®	86.7%
43	51	Wanli Tire Group Guangzhou City. China	674.5	100.0%	572.0	100.0%	430.8	100.0%	418.8	100.0%
44	N.R.	Zodo Tyre Co. Ltd. ¹³ Heze City Shandong China	655.2	100.0%	371.0	100.0%	N.A.		N.A.	
45	49	Shandong Jinyu Tire Ltd. Guangrao, Shandong, China	605.6	100.0%	584.9	100.0%	510.5	100.0%	400.0	100.0%
46	48	Petlas Tyre Industry & Trade Co.	N.A.	—	588.8	N.A.	601.8	*99.0%	481.8	98.7%
47	46	Jiangsu General Science Technology Co. Ltd. Wuxi China	574.4	100.0%	671.6	100.0%	483.1	100.0%	509.2	100.0%
48	47	Dongying Fangxing Rubber Co. Ltd.	562.3	100.0%	616.4	100.0%	600.0	100.0%	603.0	100.0%
49	52	Shandong Yongfeng Tire Co. Ltd. ¹¹ Linyi, Shandong, China	516.9	100.0%	557.9	100.0%	564.5	100.0%	>>> Previously r Shandong Hengt	eported as part of eng Tyre Co. Ltd.
50	54	Chaoyang Long March Tyre Co. Ltd. Liaoning, China	471.0	100.0%	445.1	100.0%	372.3	100.0%	327.2	100.0%
51	53	Xuzhou Armour Rubber Co. Ltd. Xuzhou, Jiangsu, China	427.7	100.0%	453.8	100.0%	370.8	100.0%	*425.0	100.0%
52	63	TVS Srichakra Ltd.^ Chennai, India	366.3	100.0%	249.8	100.0%	263.4	100.0%	296.6	100.0%
53	56	Shandong Zhongyi Rubber Co. Ltd. Dawang/Shandong. China	350.0	100.0%	359.2	100.0%	269.2	100.0%	N.A.	—
54	55	Barez Tire Group Tehran Iran	340.0	100.0%	N.A.	_	N.A.	_	541.2	98.6%
55	57	Shandong Sanli Tyre Manufacture Co. Ltd. Caoxian Shandong China	294.2	100.0%	314.6	100.0%	310.8	100.0%	327.8	100.0%
56	58	Shandong Cocrea Tyre Co. Ltd.	N.A.	100.0%	301.1	100.0%	285.2	100.0%	250.3	100.0%
57	62	Shandong Mileqi Tire Co. Ltd. ¹¹ Dongying City, China	288.3	100.0%	275.2	100.0%	292.3	100.0%	>>> Previously Shandong Heng	reported as part of feng Tyre Co. Ltd.
58	59	Nankang Rubber Tire Corp. Ltd. Tainei. Taiwan	249.0	100.0%	295.6	100.0%	329.5	100.0%	358.4	100.0%
58	60	Shandong Bayi Tyre Manufacture Co. Ltd. Zhouzhuang, China	249.0	100.0%	282.6	100.0%	467.5	100.0%	432.9	100.0%
60	N.R.	Tianjin Wanda Tire Group Tianjin China	239.0	100.0%	334.8	100.0%	N.A.	-	N.A.	—
61	67	Casumina (Southern Rubber Industry Co.) Ho Chi Minh City Vietnam	227.4	95.7%	211.6	97.5%	204.0	97.8%	184.2	98.0%
62	61	JSC Belshina Belarus Tyre Works Bobruisk, Belarus	N.A.	—	N.A.		286.0	100.0%	*300.0	100.0%
63	66	FATE S.A.I.C.I. San Fernando Argentina	N.A.	—	224.4	97.8%	184.0	98.0%	204.9®	97.0%
64	65	Yanchang Petroleum Group Rubber Co. Ltd. Shaanxi China	215.5	100.0%	233.4	100.0%	213.0	100.0%	234.1	100.0%
65	66	DaNang Rubber Co. DaNang Vietnam	209.4	100.0%	191.5	100.0%	159.0	100.0%	166.7	100.0%
66	69	Shandong Fengyuan Tyre Co. Ltd. Zaozhuang City China	186.6	100.0%	189.7	100.0%	165.0	100.0%	177.7	100.0%
67	68	Hwa Fong Rubber Ind. Co. Ltd. Tainai Taiwan	181.8	100.0%	202.7	100.0%	160.5	100.0%	165.6	100.0%
68	67	OZKA Lastik ve Kaucuk Sanayi Ticaret A.S. Kocaeli Turkev	N.A.	_	161.3	95.0%	122.8	99.3%	121.0	100.0%
69	38	Nizhnekamsk Bussia	153.3	100.0%	100.9	N.A.	696.0	93.3%	219.0	100.0%
70	68	Vee Rubber Corp. Ltd. Bangkok, Thailand	N.A.	—	N.A.	-	N.A.	-	160.8	96.7%
71	69	Hung-A Co. Ltd. Yangsan, South Korea	N.A.	—	N.A.	100.0%	153.5	100.0%	147.3	100.0%
72	71	Specialty Tires of America Inc. Indiana, Pennsylvania	*150.0	100.0%	*150.0	100.0%	*150.0	100.0%	*150.0	100.0%
73	70	Service Industries Ltd. Lahore, Pakistan	138.6	66.3%	152.3	75.6%	111.3	73.6%	102.7	61.0%
74	N.R.	Panther Tyres Ltd. ¹⁴ Lahore, Pakistan	N.A.	—	126.0	100.0%	94.5	100.0%	N.A.	_
75	N.R.	Ralson Tyres Ltd. Ludhiana, India	N.A.	—	122.8	100.0%	N.A.	-	N.A.	
		Subtotal (rounded) ¹⁵	177,821.9		177,000.0®		143,832.0®		153,668.0®	
		TOTAL	*10,000.0 186,8 <u>21.9</u>		*9,000.0 186,00 <u>0.0®</u>		^11,385.0 155,21 <u>7.0®</u>		*12,332.0 166,00 <u>0.0®</u>	

= non-tire/auto service-related revenue from 'captive' retail operations excluded from tire sales figures
 N.A. = Not Available; * = estimated; ^ = fiscal year ended March 31, 2023
 (*) = revised from previous ranking
 1 — Bridgestone owns 3% of Nokian Tyres P.L.C. (No. 20 on this year's ranking) and 44% of BRISA Bridgestone (No. 35).
 2 — Goodynear's 2022 revenues include 12 months of sales from Cooper Tire & Rubber Co., as well as 7 months worth in fiscal 2021.
 3 — Pirelli is part of China National Chemical Corp.
 4 — Acquired Trelleborg Wheel Systems (No. 29) from Sweden's Trelleborg A.B.; deal closed May 2023.
 5 — Acquired China's TUTFIIC, 01 2022; \$100M annual sales.
 6 — Giti's sales include revenue (\$1B plus) of P.T. Gajah Tunggal, in which Giti owns a 49.7% stake; Michelin owns 10% of Gajah Tunggal as well.
 7 — China's Clingdao Doublestar Tire Co. Ltd. (No. 32) owns a 45% stake and management control of Kumho Tire.
 8 — Nexen's revenue includes sales of industrial tires and tubes from Nexen Corp.

 136,000.00
 155,217.00
 1166,000.000

 9 — Aeolus Tyre (China National Chemical Corp.) acquired controlling interest in Prometeon — the former Pirelli industrial tire business — in July 2022.

 10 — Trelleborg Wheel acquired by Yokohama Rubber Co. Ltd. May 2023.

 11 — Reported as part of Shandong Hengfeng Tyre Co. Ltd. May 2023.

 12 — Now reporting as part of Zodo Tyre Co. Ltd. (No. 44).

 13 — Zodo Tyre Co. Orginese primarily Shandong Weifang Yuelong Rubber Group, Kaixuan Tire Co. Ltd. and Weifang Huadong Rubber Tires.

 14 — Formerly Mian Tyres Ltd.; fiscal year ends June 30.

 15 — Companies' revenued translated into U.S. dollars from their respective home reporting currencies at an averaged annual exchange rate for each year; the subtotal includes estimates for those companies marked NA.

 16 — "Others' represents as many 100 other tire manufacturing companies worldwide. Armong the next largest are: Ghandhara Tyre & Rubber Co. Ltd., Pakistan; Deestone Ltd., Thailand; Otani Tire Co. Ltd., Thailand; Inoue Rubber (Thailand) Co. Ltd.; Dunlop Aircraft Tyres Ltd.; Speedways Rubber Co. Ltd., India; Qingdao Yellow Sea Rubber Co., China; Global Rubber Industries Ltd., Sri Lanka.

Global Tire Report

www.rubbernews.com

Michelin's diversifying portfolio 5 acquisitions, investments shaping tire maker's future

By Erin Pustay Beaven Rubber News Staff

CLERMONT-FERRAND, France— Michelin is more than tires. It's a refrain you'll hear over and

over again as the world's largest tire maker emphasizes its place as a mobility company.

Yes, tires are at the core of what Michelin does, and that isn't going to change. But the company is committed to so much more—diversifying and strengthening its position across the globe by investing in and developing technologies and products in spaces around and beyond tires.

Within that last eight months or so, Michelin made some key portfolio moves that will position it for further growth.

"Within our Michelin in Motion 2030 strategy, we are more and more actively managing our business portfolio, which is also a way to show and to demonstrate the group ability to create value around and beyond tires," Yves Chapot, general manager and chief financial officer, said during an investors call July 26. Here's a look at five key moves

that helped to define the first half of 2023 and the years ahead.

1. FLEX COMPOSITE GROUP: Acquiring.

Among its most notable moves was the pending acquisition of Flex Composite Group, which works in resin-impregnated fabrics, flexible coated fabrics and technical films and membranes.

Michelin expects the \$764 million all-cash deal to be finalized



Michelin aims to be a leader in the transportation sector, designing tires that are safer, more sustainable and more fuel efficient.

this year. When it is, Michelin will take on six FCG manufacturing subsidiaries throughout Northern Italy.

FCG, Chapot said July 26, "is going to help us to create a leader in engineering fabrics and films, both in Europe and in North America."

Michelin has noted that FCG would boost overall revenue within Michelin High-Tech Materials by about 20 percent. The company's High-Tech Materials businesses represent between 3 and 5 percent of the group's revenue, and it has been key to Michelin's financial strength during a challenging first half.

FCG has about 400 employees who serve the marine, supercars and electric vehicles, sports and construction industries.

2. CANOPY SIMULATION: Acquired.

The highest quality zinc oxide...

Michelin is, first and foremost, a mobility company. One focused on the sustainability, safety, sophistication and performance of its products and operations. And achieving all those aims also requires technologically advanced approaches, rooted in digitization and simulation.

That's where Canopy Simulations fits in.

Michelin in May acquired the Southampton, England-based company that created a cloud-based simulation system. Michelin called Canopy's technology one of the "most sophisticated simulation software tools" seeing as it combines circuit, car and tire modeling with an advanced predictive function to simulate the perspective of a "perfect virtual driver."

Ultimately, Chapot told investors, the acquisition "is filling the group artificial intelligence capabilities in engineering and development." That's because Canopy's technology gives Michelin leverage with tire development for the race track and the roadway. "When used for motorsport purposes," Michelin said in a statement, "the virtual driver performs the basic tasks, such as a simulated four-hour stint at Le Mans to evaluate tire consistency."

And in the case of on-road tires, Canopy is a tool that can better connect Michelin and its OEM partners, offering digital tire performance perspectives from a variety of driver and vehicle profiles.

3. ENVIRO-ANTIN PARTNERSHIP: Investing.

Guiding Michelin forward is its All-Sustainable pledge, one that promises to consider people, profit and planet in all of its business practices and decisions.

And when it comes to the planet side of the promise, Michelin is investing heavily in its operations and products to ensure both are as sustainable as possible. That, of course, means developing and using more sustainable materials.

Earlier this year, that pledge took a big step forward when Enviro Systems A.B.—a company in which Michelin holds a majority stake—announced that it and Antin Partners would form a joint venture.

The JV's vision? To become a leader in tire recycling, using pyrolysis technology to produce recovered carbon blacks and pyrolysis oils. Enviro CEO Thomas Sorensson

Enviro CEO Thomas Sorensson told *Rubber News* earlier this year that, during the initial stage of the JV, Antin will finance 100 percent of the project, but Enviro will have the opportunity to finance as much as 30 percent of the ownership throughout

0

the first 24 months.

Michelin, he added, will be included in the process as it unfolds and particularly as production facilities scale up. The tire maker also has committed to a multi-year deal for the purchase of the sustainable materials the JV produces.

4. SYMBIO: Partially divested; added new partner.

As a mobility company, Michelin brings into the fold technologies that are sometimes unexpected. Because Michelin is known for its tires, investments in technologies outside the tire space sometimes come as a surprise.

Take, for instance, hydrogen. It's a technology Michelin has been exploring for decades, and with the rise of new mobility and hydrogen's potential in the space, the tire maker is stepping up its efforts.

Enter Symbio, a fuel-cell development joint venture established by Michelin and Faurecia S.E. in 2019. The two companies each took a 50-percent stake and brought different expertise to the table—Michelin with its background in hydrogen development, and Faurecia with its fuel cell production expertise.

Since its launch Symbio has grown exponentially, right along with its potential.

And that included adding a third partner to Symbio, one that brings critical OEM expertise.

In July, Michelin and Faurecia officially added Stellantis to the Symbio partnership, selling partial stakes in the JV so each of the three partners hold a 33-percent share.

"The entry of Stellantis into the capital of Symbio is a tremendous development driver for our joint subsidiary," Michelin CEO Florent Menegaux said in a May 16 statement. "It is also a perfect demonstration that fuel cell technology is essential for the automotive industry to succeed in the electrification of mobility, particularly for professional use."

5. WATEA BY MICHELIN: Partially divested; added new partner.

Watea is designed to be a bridge between professional fleets and their new mobility/sustainable mobility aims by assisting in the transition to electrification and orchestrating fleet management.

"On the basis of a simple monthly subscription, Watea by Michelin offers a host of integrated services: recommending suitable electric vehicles, travel analysis, identifying the best finance solutions, orchestrating vehicle deployment, proposing charging solutions, and a digital platform to help users and drivers manage their activity easily," Michelin said.

easily," Michelin said. The success of Watea was obvious to Michelin within a year of its launching, as it took a 10-percent share in France's last-mile delivery market within 12 months.

To propel further growth, Michelin divested 30 percent of Watea capital to Credit Agricole Leasing & Factoring. The subsidiary of the Credit Agricole group specializes in lease-purchasing, factoring and financing renewable energies for professionals and companies.



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Top 75

Continued from page 9

For the annual Top 75 Tire Makers ranking, Rubber News looks at the tire makers' revenue generated from the sale of tires they've manufactured, in order to achieve a more equitable apples-to-apples comparison.

Excluded are items such as third-party sales of materials (steel cord, synthetic rubber. carbon black, etc.) as well as any non-tire-related revenue and non-tire revenue (auto service, e.g.) generated by a tire maker's company-owned retail or commercial tire sales networks.

Bridgestone, Michelin, Goodyear and Continental, for example, report hundreds of millions-or even billions-of dollars in such revenue from their respective auto- or truck-servicing networks.

Race to No. 5

Based on the various companies' performances through the first half of 2023, the ranking order of the top dozen or so companies isn't likely to change much for the full year. The "wild card" in the deck is

Yokohama Rubber Co. Ltd., whose acquisition of Trelleborg Wheel Systems-concluded in May after more than a year of due diligence and other considerations-eventually will boost the Japanese tire maker's full-year revenue by \$1 billion or more.

With that much additional revenue, YRC will be poised to challenge Pirelli & C. S.p.A. and Hankook Tire & Technology Co. Ltd. for the No. 6 spot on the ranking as all of them push toward \$7 billion in annual tire-related sales. Depending on these three firms' growth, as well as that by Sumitomo Rubber Industries Ltd., this could evolve into a four-way scrap for No. 5.

Sales / Employee 2022

Company	Sales/ employee
Nokian Tyres P.L.C.	\$377,906
Balkrishna Industries Ltd.	\$360,017
Toyo Tire Corp.	\$358,124
Nexen Tire	\$329,264
Apollo Tyres Ltd.	\$303,026
Hankook Tire Co. Ltd.	\$295,686
Goodyear	\$271,419
Bridgestone Corp.	\$242,167
Yokohama Rubber Co. Ltd.	\$230,203
Michelin	\$227,750
Pirelli & C. S.p.A.	\$222,259
JK Tyre & Industries Ltd.	\$209,095
Continental A.G.	\$208,236
Tire Division	\$258,414
Trelleborg Wheel Systems	\$198,233
Sailun Tire Group	\$188,539
Ceat Tyres Ltd.	\$172,948
Zhongce Rubber Group Co.	\$159,900
Cheng Shin / Maxxis Intl.	\$154,414
MRF Ltd.	\$151,076
Casumina	\$117,044
Barez Industrial Group	\$97,282
P.T. Gajah Tunggal	\$65,339

For fiscal 2023, the impact will be a bit less, since the deal didn't close officially until May. Therefore YRC's accounts will include seven months of TWS-related sales.

New to the rankings

This year's ranking includes four newcomers.

• Zodo Tire Co. Ltd., a Heze City, Shadong, China-based enterprise that combines the assets of at least three other existing Chinese tire makers: Shandong Weifang Yuelong Rubber Group, Huadong Tire Co. Ltd., and—as of earlier this year—Shandong Kaixuan Rubber Co. Ltd.

Zodo debuts at No. 44 with fiscal 2022 sales of \$371 million. The enterprise claims a daily production ticket of over 65,000 passenger, light truck and medium truck tires. Zodo's brand portfolio includes Fronway, Goldshield, Grenlander, Link, Rockblade and Zmax.

• Tianjin Wanda Tire Group, at No. 60, reported sales of \$239 million. Founded in 1998, Tianjin Wanda operates three tire plants in Tianjin and Hebei provinces, producing two-wheeler and passenger tires. The sales footprint spans the globe. It goes to market under the Armor, Hakuba, Halberd, Journey and WDT brands.

• Panther Tyres Ltd. came in at No. 74 with fiscal 2021 sales of \$126 million. Formerly known as Mian Tyres, the Lahore, Pakistan-based company's

fiscal year ends June 30 and, as such, hasn't reported 2022-23 fiscal-year sales yet.

• Ralson Tyres Ltd. debuted at No. 75 with fiscal 2021 sales of \$122.8 million. The Ludhiana, India-based company is likely to be shown much higher in coming years as its export-oriented venture into truck/bus tires ramps up.

Truly a global industry

Companies ranked in the Top 75 this year are based in 18 nations, with China (31) having the most. Three Chinese companies, Zhongce Rubber Group Co. Ltd. (No. 9); Sailun Group (No. 12); and Linglong Group Co. Ltd. (No. 17), are ranked among the Top 20.

Other countries represented

are: India with eight companies; Japan, South Korea, Taiwan and the U.S. with four each; Italy and Turkey, three each; Pakistan, Russia and Vietnam, two each; and one each from Argentina, Belarus, Finland, France, Germany, Iran, Singapore and Thailand.

Collectively, the top 10 represent \$115 billion in sales, or roughly 61 percent of the global total.

The average sales/employee for the top-ranked companies that publish employee numbers was \$223,437, up 3.4 percent over the fiscal 2021 figure.

Nokian Tyres generated the most sales per employee, \$377,906, ahead of Balkrishna Industries Ltd. (\$360,017) and Toyo Tire Corp. (\$358,124).



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14 Rubber News · September 4, 2023 **Rubber News SPECIAL REPORT**

3 Catalysts: Sustainability

Global Tire Report

www.rubbernews.com

From tap to tire Industry strives to sustain *hevea* NR supply chain

By Sam Cottrill Rubber News Staff

Natural rubber, most commonly derived from the *hevea* brasiliensis tree, is a foundation of the global economy. After all, the world uses about 14 million metric tons of natural rubber in over 50,000 different products annually.

That's what Katrina Cornish, research director at Ohio State University, pointed out during last year's International Tire Exhibition & Conference—where she also noted that the global economy would cease to exist without the critical material.

"If you don't have natural rubber, you've got nothing," she said.

This is doubly so for the tire industry, which absorbs over 70 percent of the NR produced globally, according to the European Tyre & Rubber Association, as well as the Tire Industry Project.

And the U.S. Tire Manufacturers Association says NR makes up about 19 percent of the average passenger/light truck tire and 34 percent of the average truck tire.

While some companies are seeking commercial alternatives to *hevea* NR, such as the desert shrub guayule or the *Taraxacum kok-saghyz* (TKS) dandelion, as the industry stands today there is no complete, sustainable replacement to this monoclonal tree that dominates the rubber industry.

Even synthetics cannot meet all of *hevea* NR's current applications and performances. "Natural rubber compounds are ex-

"Natural rubber compounds are extremely flexible, a good form of electrical insulators, and are resistant to many corrosive substances," said Bonggeun Kim, ESG team manager at Hankook Tire & Technology Co. Ltd. "Synthetic (man-made) rubber can be produced through a chemical process, but industries haven't been able to develop a synthetic rubber with all of the properties of natural rubber."

So it makes sense that some of the top global tire makers have banded together to support the longevity of this material.

The Tire Industry Project, for example formed in 2005 under the World Business Council for Sustainable Developmentcomprises 10 leading tire companies that represent more than 60 percent of the global tire manufacturing capacity, according to the association. These manufacturers include Bridgestone, Continental, Goodyear, Hankook, Kumho Tire, Michelin, Pirelli, Sumitomo Rubber Industries, Toyo Tires and Yokohama.

And in October 2018, TIP spearheaded the development of the Global Platform for Sustainable Natural Rubber, which is now the "primary channel" through which its members work toward a sustainable NR supply chain.

The platform includes more than 200 members representing over 55 percent of the global NR supply chain. This includes tire makers and other natural rubber mak-

ers or buyers; end users; producers, processors and traders; civil society; and affiliate members, such as academic institutions, associations, governments and government organizations, and service providers.

"The commitment of our members to sustainable natural rubber is integral to the (tire) industry's overall efforts toward sustainability," Gavin Whitmore, senior manager of TIP communications, told *Rubber News* in an email.

"Natural rubber is a crucial element of tire production, and one reason Tire Industry Project members want to ensure the sustainable production and supply of natural rubber," he said. "This, of course, means looking after the people, communities and natural resources touched by natural rubber production and supply which all stand to benefit from the creation and adoption of sustainable practices and businesses."

To do this, TIP identified seven "impact

opportunities" when it launched its sustainability roadmap in 2021—based off the United Nation's 17 Sustainable Development Goals launched in 2015.

¹These goals "lay out a global agenda to tackle the world's most pressing social, environmental and economic challenges by 2030," according to TIP's "Sus-

tainability Driven: Accelerating Impact with the Tire Sector SDG Roadmap." Of TIP's seven "im-

pact opportunities," it dedicates the first two to the sustainability of the NR supply chain:

• "Accelerate and scale activities to achieve a fair, equitable and environmentally sound natural rubber value chain—including ensuring decent work and upholding human rights"; and

• "Implement sustainable procurement practices and establish envimental social and gaugements (FSC)

ronmental, social and governance (ESG) responsibilities throughout the supply chain, including the promotion of transparency and traceability."

How tire makers are responding

GPSNR members have taken TIP's impact opportunities and the U.N.'s SDGs in stride, dedicating time and resources to developing partnerships and programs that support smallholders, encourage biodiversity and work to mitigate the effects of climate change on *hevea* NR. For Michelin, this includes doubling down

For Michelin, this includes doubling down on support for the production and sustainability of *hevea*. The company understands that while alternatives are critical to the sustainability of the overall NR supply chain, *hevea* cannot fall by the wayside.

And supporting the NR supply chain means supporting its producers—85 percent of which include about 6 million smallholder farmers who maintain an average of 2-3 hectares each, according to Michelin.

"Michelin supports a responsible and resilient management of the natural rubber value chain," the company states on its website. "It is essential that rubber is produced in a responsible manner to contribute to the sustainable mobility of tomorrow.

"There is no mobility without tires ... and no high-performance tires without natural rubber," Michelin added, noting the material's unique properties contribute to a tire's durability, heat resistance, noise and vibration reduction, and tear reduction.

With about 2 million NR farmers supporting Michelin's needs, the French tire maker holds activities in Brazil, Africa, Thailand, Singapore and Indonesia. "In Indonesia and Thailand, it is com-

"In Indonesia and Thailand, it is common for natural rubber processing factories to source raw material through different levels of intermediary dealers," Michelin said. "This results in a very complex supply chain, with a single natural rubber processing factory having thousands of smallholder farmers within their supply, having little or no interaction with them."

So how do you ensure the rubber you are receiving is fair trade with such a complex structure?

For Michelin, this takes shape in engaging "all players in the value chain" through a digital solution called RubberWay, a "risk-mapping solution developed to identify sustainability risks throughout the whole natural rubber upstream supply chain."

It can flag risks for mitigation at each level of the supply chain, "using responses to an environmental and social questionnaire carried out through a mobile app," according to RubberWay's website.

With this app, Michelin says it ensures sustainability along the supply chain, including the livelihoods of farmers and local communities as well as supporting farmers with responsible land use.

"Farmers often face livelihood challenges, such as limited access to agricultural training, income diversification options, See Sustain, page 35

Sustainability, circularity requires full tire industry buy-in

By Erin Pustay Beaven Rubber News Staff

SAN ANTONIO—There are a myriad of reasons the tire industry needs to move toward greater sustainability and full circularity. But for Olivier Brauen, there are

two that stand well above the rest. One is 8. The other, 2.

And both of his daughters even at their young ages—are inspiring him to think more deeply and more critically about the tremendous challenges the tire industry faces as it works to tackle climate change, achieve sustainability and push for circularity.

"The 8-year-old is asking questions already," Brauen, Michelin North America Inc. vice president of circularity business solutions, said during the first day of the 2023 Smithers Traction Summit. "So we have to make an impact."

The kind of impact that no one person or company can make on its

own. Because the challenges are too great, the demands too high.

"We feel like we have to do way more, all together, as an industry," Brauen said. "And it is a symmetry of what we see on the market, even in North America. We see clear shifts, clear inflection points."

Consumers, he said, are demanding more from Michelin and the tire industry. They are putting pressure on tire makers to provide more sustainable products—in material composition, performance and longevity.

Customers are doing the same. OEMs are racing toward the development of circular vehicles, and fleets are seeking greater sustainability from their tires as well.

So Michelin, Brauen said, is fully committed to doing all of those things. But Michelin also is committed

But Michelin also is committed to partnering with others—including competitors—to push the limits of sustainability within the industry.

Because honestly, the planet can't wait.

"We believe that it is very important to accelerate," Brauen said. "We compete with Bridgestone every day for consumers and customers. And that is not the question here. The question is accelerating for the planet side, the environment side."

The Four Rs

For Michelin, the vision for more sustainable materials and ultimately more sustainable products—breaks down into four primary focus areas. Areas the company calls "the four Rs." • **Reduce**. Simply, reduce the

• **Reduce**. Simply, reduce the amount of material in tires.

• **Renew**. Use renewable materials. And by "renewable," Michelin means the material must be fully replaced within a human lifetime.



Russell Shepherd (left), Michelin North America technical communications director, and Olivier Brauen, vice president of circularity business solutions, discuss how sustainability and circularity are critical to the future of the tire industry.

• **Recycled**. Embracing the use of recycled materials.

• **Reuse**. This is where circularity comes in. Reuse involves finding ways to ensure the lifetime of the tire doesn't end with its service life.

Russell Shepherd, Michelin North America technical communications director, said the company has made some significant strides—but particularly with recycled and renewable materials.

Through partnerships, investments and R&D developments of its own, Michelin can take packaging waste and post-consumer plastics and create more sustainable synthetic rubbers and textiles. See **Buy-in**, page 15

With racing, Bridgestone captures sustainability wins

By Erin Pustay Beaven

AKRON—Speed matters. It's why you push technological limits—of racecars, sure, but also the tires that connect them to the track—at speeds topping out at 240 mph. That is, after all, the essence of racing: Being fastest. Being first.

Winning. But here's the funny thing about racing: Winning isn't always about how fast you go. Sometimes, winning is more methodical-long term-and more holistic in its approach. For Bridgestone Americas Inc., racing is all of those things. Because racing is the innovative proving ground where sustainable technologies show their mettle.

With racing-NTT Indy Car and Firestone NXT Series, specifically-Bridgestone is redefining its material science arsenal, particularly as it relates to sustainability. And its racing tire innovations offer glimpses of the future-of what tires can do or be-when more sustainable materials can be affordably and efficiently scaled for mass production of passenger or commercial tires.

'They (Bridgestone passenger tire plants) may make 30,000 tires in a day. We make 30,000 tires in a year, so our volumes are a lot smaller," Cara Krstolic, chief race tire engineer, told Rubber News. "So when it comes to taking materials that need to be scaled up in an appropriate way, if you think about guayule—this is a great sustainable



Cara Krstolic, chief race tire engineer, says Bridgestone is making its racecar tires more sustainable by scaling up alternative NR materials like guavule.



While Bridgestone's passenger car tire plants produce about 30,000 tires a day, its racing division makes about 30,000 tires a year-making race tires a candidate for the use of guayule.

material, locally sourced—but there is such little supply of it right now. We are working on scaling it up, but part of scaling it up is to put up a business case for it."

With motorsports, Bridgestone is doing just that, making its case.

This year, Bridgestone moved even closer to more sustainable by addressing one of the most important-and trickiest—of tire materials, synthetic rubber.

'There is not much natural rubber in the treads of race tires, we use a lot of synthetic rubber. And yes, the natural rubber comes off either the hevea tree or the guayule bush," Krstolic said. "But how do we get something that is synthetic or primarily fossil-based and turn that into something that is sustainable?

How? You rethink your polymer, starting with the monomer. And you do that by leaning into innovative partnerships to make that happen.

"We reached out to our partner in Shell, and we talked about some of the main monomers that go into our polymers. We asked if they had anything on the horizon that we could work with them on to either develop or help scale up," Krstolic said.

It just so happened, Shell did. The chemical supplier was working on perfecting the use of post-consumer plastics-shopping bags and packaging films—as a butadiene feedstock. And it was a plan that fit right into the motorsports team's vision for more sustainable manufacturing.

In May, Bridgestone debuted its new

generation, more sustainable Firehawk tires-those made with post-consumer-plastics-sourced butadiene. "When you are putting a polymer to-

gether, the polymer doesn't care where the monomers come from," Krstolic said. "Butadiene is butadiene. ... It doesn't matter the source.³

Ultimately, that's the key for more sustainable tire materials and more sustainable tire manufacturing-adapting without compromise. Safety and performance must be maintained, if not improved.

And nobody can attest to maintained or improved tire performance like racecar drivers. If the race tire development team tinkers with the tire's materials or engineering and that change at all impacts the tire's performance, the drivers feel it.

"Race drivers are very sensitive to any sort of little change in the tire, whether it is a material supplier or a slightly different weave of a fabric, they are very, very sensitive," Krstolic said. " ... We want to introduce things, but we want to do that in a manner that has the least effect on the tire and the tire performance itself. And then we can start to scale up.'

Big-picture perspective

Before tackling synthetic rubber, Bridgestone bet on guayule. It was a move that its Firehawk race tires proved could be paying off.

Last year, Bridgestone demonstrated the use of guayule as a viable alternative natural rubber by fully replacing the hevea-derived rubber in the Firestone Firehawk sidewalls with that of the resilient desert shrub.

It was a small step in a much bigger sustainability journey for the motorsports team and the company overall.

'I have a graph that has milestone dates and steps and what we need to do to get to that next material circularity in our race tires," Krstolic said. "So we start out with things that affect the tires less. So let's take the guayule in the sidewall. That sidewall is very important to the race tire as it protects the outside of the tire and keeps air inside the tire, and has a lot of really, truly critical properties of the race tire. But the performance effect level is low in the sidewall.'

Bridgestone considers every aspect of tire design, development and manufacturing when planning for its more sustainable future.

And racing tires are no exception.

You could do all the right things at one side and all the wrong things on another side, and (if that happens) you are not doing the right thing from the overall, big-picture point of view," Krstolic said.

So Bridgestone, she said, does its best to do everything right.

When the tire maker unveiled its more sustainable Firestone Firehawk tires at the Indianapolis Motor Speedway this summer, it worked with Penske to employ electrically powered 2023 Freightliner eCascadia trucks from Penske Truck Leasing's fleet of electric vehicles.

Krstolic was also quick to note that the sustainable footprint of racing tires extends all the way to their proverbial final lap.

When we get all of our tires back they have to go through Indianapolis anyway, so they are sent to a facility (there) that makes alternative fuel, and that is full-circle there," Krstolic said. "The tires help to power the electricity for the city of Indianapolis."

Because ultimately, winning on sus-tainability means taking a big-picture approach, one that builds upon each successful stride and positions the company to take the lead in the future.

We have a long-term view," Krstolic said. "We know we want to get to 100. We know that we can't get to 100 tomor-row or even in 10 years. But we are working on scaling that."

Buy-in

Continued from page 14

Those are critical steps toward achieving 100-percent sustainable materials tires.

But sustainability is built into procurement, too. And that means working to ensure the sustainability of natural rubber supply chains.

"The nice thing about the tire industry when it comes to sustainability is that we have a huge advantage over other industries, Shepherd said. "Our main component in a tire is what? Rubber. Natural rubber. So you can either get it from rubber plants or there are other sources of that, so that is our huge advantage.

"But there are other components such as synthetic rubber, resins, how we make sure that the steel we use is recycled and the textile materials. That," he said, "is where the challenge is."

Challenges accepted

Ultimately, by 2050, 100 per-

cent of the materials used in Michelin tires will be sustainable. To get there, the French tire maker has set a short-term goal of achieving 40-percent sustainable materials usage in the production of tires by 2030.

Today, Michelin has reached the 30-percent threshold, and according to Brauen, most of that sustainable content is renewable materials. Just 0.1 percent is recycled content.

But that, he said, will change. Michelin is committed to ensuring it does.

"In terms of recycled material, it is quite limited," Brauen said. So we will do more."

Globally, the tire maker is doing more. It is investing in the kind of technologies that allow for its tires to be tires again when they reach the end of their service lives.

First, there is Lehigh Technol-The Atlanta-headquarogies. tered, Michelin-owned company is turning ELTs into micronized rubber powders-recycled materials that find homes in brandMRP in truck retreads and a single-digit percentage in a passenger car (tire)," Brauen said. "Not only does it help impact sustainability, it can help to increase performances in certain applications. So we have better-than-virgin raw material, and now we can reduce the cost because it is an affordable alternative to the virgin raw material."

yond tires, too, in products like rubber-modified asphalt and industrial rubber products.

is growing exponentially. So Lepansion project is complete.

Further, Brauen said, Miche lin is investing to bring MRP

This is just part of the equation. And it is still not enough.

Michelin also has taken a majority stake in Enviro, a company that-through batch process pyrolysis-transforms ELTs into oils and recovered carbon blacks. The kind of materials that can go back into Michelin tires—or other products.

Demand for these products is growing, Brauen said, within Michelin and beyond. So Enviro is growing, too.

Enviro recently partnered with Antin Partners to scale-up the technology in Europe, first with a plant that has an annual capacity for about 34,500 tires. The ultimate goal is to establish tire recycling infrastructure across Europe that is capable of recycling 1 million metric tons of end-of-life tires annually by 2030.

This is great news, Brauen said. But it is still not enough.

"We need more," he said. "So how do we accelerate together? How do we increase cooperation across a similar value chain, among all the components to catalyze public and private investments?"

How?

You innovate. With humility. Because it will take a combination of industry ideas, investments and innovations to truly make meaningful change. The kind that impacts an industry for the better and changes the world for the next generation.

The slope is still pretty challenging," Brauen said. ' We need all of us to push toward the same direction.

"If we just think about past solutions, it will never work. We have to rethink and innovate. We have to unleash innovation and this innovation will come from the industry working together."

When that happens, he said, the tire industry, through its sustainability, can have a real, meaningful impact. The planet, after all, demands it.

And our kids do, too.

"We have to go to this full circularity, hopefully very soon," Brauen said. "I want to be able to tell my two daughters that I was part of that change."

Lehigh's MRPs have life be-

And with sustainability in the tire industry and beyond as the driving force, demand for MRPs high is scaling up to address it, at least, in part. According to Brauen, MRP capacity at Lehigh's Atlanta plant will double to 40,000 metric tons per year once the recently launched ex-

production to Europe.

new Michelin tires. We can put up to 12 percent of

Tire development: Eventually virtual

OEs, tire manufacturers, testing companies continue transition toward simulation

By Andrew Schunk

AKRON—The push toward sustainability is not abating, and time-to-market, like safety, remains critical for tire manufacturers.

As such, tire modeling is gaining traction at all levels of tire development-from manufacturing to fatigue and cold-weather testing.

"At this point, simulation is deeply embedded with every tire maker, not only in research and development departments but also in production engineering workflows," Will Mars, president and CEO of Findlay, Ohio-based Endurica L.L.C., told *Rubber* News. "Basic tire design targets including dimensions and shape, load and deflection curves, footprint pressures and shapes-are routinely checked via simulation any time there is a new tire size or specification, or a change to an existing specification."

advanced simulations More can predict many key tire performance requirements, including rolling resistance, heat buildup, NVH, force and moment behavior, and durability. "These tend to be used in de-

veloping engineering packages

as due diligence for OEM contracts, or for design sensitivity studies focused on new product development," Mars said. And major tire makers are out

Mars front with the move toward "virtuality."

"I'm guessing that it is routine these days for a large tire maker to have a team of 30-50 simulation engineers," he said.

But the transition to 100-percent virtual development, testing and production also is a ways Regulatory tests, which away. have to be passed to bring new tire designs to market, remain.

"Unless the government starts accepting simulation results in lieu of actual tests, I do not see a day when simulation will completely eliminate testing," Mars said. "But we are quickly evolving to a place where the expectation of passing all tests on the first try gets higher than it used to be.

"If you are not leveraging sim-

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Akron-based Smithers used regression analysis to determine traction coefficients for an all-season tire on snow-laden surfaces. The higher the coefficient, the better the grip, according to Smithers engineers.

ulation effectively, you will not be able to compete in that context.'

Michael Stackpole, president and founder of Stackpole Engineering Services Inc. of North Canton, Ohio, said simulations allow a driver to evaluate infinite combinations of models and designs, without having to build a physical tire or physical vehicle.

You can imagine the advancements that had to happen for a driver to get realistic feedback at a computer—and we're just at the beginning of it," Stackpole told *Rubber News*. "The industry is moving quickly in the direction of relying less on physical proto-

types and more on simulation models, especially during the initial design phase. "I envision a day when every

step of development can be done virtually.'

A virtual history

SKID RESISTANCE

OR ICE-COVERED ROADS

Mars puts the nascence of virtual testing at about 1978, when HKS-or Hibbitt, Karlsson and Sorensen Inc.—was founded.

The group of engineers produced the abaqus finite element code, which distinguished itself "by focusing on solving nonlinear problems."

"There were many codes at the time, but ... this was ideal for tire analysis," Mars said. "The uptake by the tire industry was guite slow at first, with many competing alternatives. Most tire companies at the time were writing

their own in-house codes.' But in the late 1980s and early

1990s, NASA funded the National Tire Modeling Program that sought to speed the adoption of simulation methods in tires. The abaqus code became domi-

nant in the tire industry "by perhaps the year 2000," Mars said.

"At this point, simulation is deeply embedded with every tire maker, not only in research and development departments but also in production engineering workflows."

Will Mars

"The adoption of simulation by the tire industry has been driven as much by software technology as by advances in computing capacity," Mars said.

Before virtual tire development technology, tire develop-ment "looked very different," Stackpole said.

Tire OEMs would have to build a physical tire and run it on a flat trac machine to collect the data they needed to create a tire model," he said. "The process was costly, but there was no way to develop a virtual tire model without first building that physical tire.'

And that can be expensive and wasteful.

"If the tire didn't test well and the driver didn't like it, it was back to the drawing board," Stackpole "This process required the said. creation of physical tires, which came with financial and time

commitments. Simplified tire models were available, but their use was limited to basic tire performance characteristics."

As computers and tire modeling became more advanced, the industry began to leverage that technology.

"More importantly, they came to understand how the tire would interact with the vehicle," Stackpole said. "Simulation is now an integral part of the design and prototyping process for tire and vehicle OEMs.

"Everything about the technology is advancing quickly, from the complexity of the models to the

industry's expectations of what these models should be able to do." Soon, the industry also came to note the importance of simulating a tire's interaction with the road, as well.

Smithers' cold case

The history of snow traction testing goes back to the 1970s, when CTI—now Smithers Rapra—created the first snow penetrometer. The 1980s and 1990s saw innovations in analysis, as well as the publication of several ASTM standards.

In 1999, the Mountain Snow flake—a regulatory threshold required in some cold weather regions-was introduced by the U.S. Tire Manufacturers Association and the Rubber Association of Canada.

After more than five decades of physical testing, much of it pio-



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neered by Smithers, Principal Engineer Eric Pierce knows there is no easy path to simulating snow coefficients for cold-weather testing. The process to achieve that goal, or at least toward much tighter testing parameters than currently are possible, will take time.

And it will take high-end mathematics to solve an overall algebraic challenge.

The goal is to better predict what the tire and snow traction coefficient should be, given a particular range of metrics," Pierce told *Rubber News.* "This could lead

to improved repeatability and consistency of results, potentially creating narrowtest \mathbf{er} straints or showing when results are beyond the expected result."

con-Pierce

As the traction (or skid resistance) coefficient increases, the grip between the tire and surface increases

(caused by braking). On a compacted snow or ice surface, which is most frequently observed for testing and compliance companies like Akron-based Smithers, coefficients typically are between 0.1 to 0.4, depending on the type of tire tread and consistency of the specific snow or ice surface.

But unlike a relatively even surface like ice, the consistency of snow changes, and it changes quickly.

As the upper layers of snow are removed, freeze or melt, a relatively low coefficient of 0.2 to 0.3(poor grip, high slippage) can increase to 0.4 or 0.5, as large ice granules form.

In Smithers' study, "Correlating tire traction performance on snow with measured parameters of ASTM F1805 using regression analysis," the designated wheel was an all-season tire.

"The first goal (of virtual modeling for traction testing) is to determine which characteristics—specifically measurable, tangible traits—of snow are the prime contributors to the tire/ snow surface traction coefficient for one particular tire," Pierce said. "There is no quick repeatable, non-destructive way to measure and characterize a snow surface. Ice, on the other hand, is homogeneous in comparison to snow and currently allows for more predictability in tire/ surface traction interactions.²

Smithers hopes to build off this research, marrying both virtual tire modeling for manufacturing purposes with the virtual modeling of cold weather analytics.

Like Endurica's Mars, Pierce cautioned that a completely virtual-testing future is farther away than one might think.

Significant strides are being made at the Center for Tire Research (CenTiRe), a consortium of industry and academic part-

3 Catalysts: Simulation/Technology

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ners based at Virginia Tech University and the University of Akron, Pierce said. "This goal is far off from the

"This goal is far off from the current state of technology," he said. "The move toward a virtual environment-based future for tire development is being discussed in many circles right now.

"The existence of accurate snow material models or computational models is essential for better virtual development of winter tires. Such models could ensure better evaluation of the tire during the design and development stage before the manufacturing stage."

Enduring partnership at core of research

No one has a crystal ball for the moment when tires will break down, but Endurica certainly has a well-educated guess.

The Northwestern Ohio firm continues to draw attention for its simulated tire evaluation capabilities, this time from the Department of Energy for its work on tire tread pattern predictions.

"Where it was originally only possible to model a tire cross-section with a few hundred finite elements and days of computing time, today tire models are routinely solved having hundreds of thousands of elements, or even millions, in hours," Mars said. "Simulation will never com-

"Simulation will never completely replace physical testing, but it will make it much easier to hit testing standards on the first prototype tire build."

Endurica was selected July 14 as a partner with Utah-based Coreform in the DOE project to explore simulated tire tread patterns, a crucial step in understanding tires emerging in the electrical vehicle space.

Coreform's computer simulation technology, known as isogeometric analysis, replaces the complex and time-consuming portions of computer simulation that are traditionally done through finite element analysis.

"Where there is alignment of broad society interests in energy and environmental issues with emerging capabilities like IGA, it makes sense for DOE to invest in high-risk, high-return technologies," Mars said. "Tire companies are often reluctant to be the first to take risks on unproven technology, so this funding really helps get over the initial hurdles."

Specifically, Endurica will apply Coreform's IGA in rolling resistance, heat buildup and wear behavior in tire treads. According to Mars, the software developed by Coreform "provides greater design clarity and detail" than finite element analysis.

The company will be able to provide key tire performance evaluations to the entire industry once testing is complete. "Coreform's isogeometric anal-

"Coreform's isogeometric analysis is going to make it much easier for tire companies to simulate tread pattern in full detail," Mars said. "In the past, much of the complex tread pattern has been neglected in analysis. The geometrical complexity was just too much for traditional methods, resulting in huge jobs." Rubber part development has

Rubber part development has been a game of steady, iterative and incremental progress "for a very long time," Mars said. But the rapid growth of EVs has been a major disruptor.

"Electric vehicle companies are really pushing the envelope and asking the most of tire and vehicle simulation technology," Stackpole said. "They've got a big

job ahead of them in terms of getting new vehicles out there without any of the legacy data that the other players can rely on, so they've really embraced the virtual development model."

Mars said EVs bring "radically

Stackpole

different design requirements." "It is arguably the largest disruption that has come along since simulation has arrived," Mars said.

"Now that simulation is well-established, and now that there is heavy pressure on development agendas to get these designs right on the first try, it makes complete sense that they go together."

And if safety can be maintained, sustainability will follow.

"I couldn't begin to guess how many development tires we built and tested back in the early nineties," Stackpole said. "We had lots of experience with compounding and recipes, but no one really knew what to expect from a performance standpoint until



Above is an image of a tire operating at a steady state, under both load and steering angle. Endurica's engineers work with such fatigue simulations daily.

the tire was built. "Transitioning to this virtual development methodology results in not only cost savings, but a tremendous reduction in terms of the physical tires we would have to build, test and toss in those early days."



New mobility, renewed focus 5 trends emerging for tire makers as new mobility takes hold

By Erin Pustay Beaven Rubber News Staff

The thing about evolution is that you don't stay in one place very long. Tomorrow looks a little different than vesterday, and decades can feel worlds apart.

That's especially true as the new mobility market takes shape.

"As we look at this market, it is evolving quickly and any challenges are a snapshot in time," Tracey Norberg, U.S. Tire Manufacturers Association senior vice president and general counsel, told Rubber News. "The tire industry is not only in a responsive mode to its customers, but also designing products that meet new challenges today."

And new mobility certainly brings the tire industry its fair share of challenges-some new, some familiar. Here's a look at five of them.

1. Innovation without compromise

Innovation always has been a juggling act. It requires the right balance of performance and sustainability. And in the new mobility era, that won't change.

Norberg is quick to note that tire manufacturers are master jugglers, simultaneously keeping their focuses on innovation, sustainability and product performance. Even so, the juggling act continues-and at times, it can be trickier than others.

As tire makers bring to market their most sustainable products



New mobility asks a lot of the world's largest tire manufacturers. While innovations are being made with sustainable materials, tire makers continue to count safety as their No. 1 priority.

yet-in terms of performance, composition and manufacturingthey aren't innovating for innovation's sake. They're doing it all and keeping another ball in the air, too. Because they aren't compromising on safety.

"Tire manufacturing begins with safety," Norberg said. "I'm sure you've heard the engineers sav. the tire is touching the road with four pieces of rubber the size of my hand. ... But that is it, right? And the tire-no matter the materials it contains, no matter the contribution to greenhouse gas (reduction) and the improvement to fuel economy or energy usage for electric vehicles, reducing end-of-life tires in the environment-all of these piecessafety always has to be the first thing they think of and the thing they are thinking of all the way through that product's design."

So as the issue of sustainabili-

ty becomes top of mind for customers and OEMs, as well as consumers and regulators, the tire industry's juggling act gets more intricate.

Every major tire maker envisions bringing to market a 100-percent sustainable materials tire, and they have a clear plan for achieving that aim. It involves sustainably sourced and alternative natural rubbers, more sustainable synthetic rubbers and the implementation of more renewable, recovered and recycled materials.

 $But \ every \ sustainability \ change$ has to be a step forward, Norberg said. Not just with sustainability, but with performance and safety. Innovation demands zero com-

promises. "(It's) not only maintaining per-

formance, but enhancing performance, enhancing tire longevity and reducing stopping distance,

improving reliability," Norberg said. "My view is the industry takes all of that and internalizes all of that. And this industry is doing that because that is their business. It is their passion. It is their mission. And it all starts and stops with safety.'

2. Understanding tire capabilities

In a new mobility era, tires have some new expectations. Especially when it comes to EVs, which are-quite simply-harder on the tires, wearing them more quickly and demanding greater durability from a load perspective.

That, though? That's the easy part.

Tire makers are rolling out tires that meet every demand that EVs have to throw at them. They're not only more sustainable, they are designed especially to extend

Fatigue Analysis with Endurica



fatigue performance.

Endurica EIE

the vehicles' range with rolling resistance improvements.

The problem is that consumers don't know that.

Michelin last fall conducted an online survey of adult drivers to gauge their understanding and acceptance of electric vehicles and the role that tires play in maximizing their performances. The results indicated that while consumers were eager to embrace electrification, they didn't understand the implications of the

new technology on their tires. Or, rather, the critical role their tires play in optimizing the technology.

"Basically, 83 percent of consumers do not really understand what kind of EV tires they need, or what tires they need for their electric vehicle," Alexis Garcin, Michelin North America Inc. chairman and president, said earlier this year. "Most importantly-or I would say surprisingly—52 percent of the people that are already driving an electric car do not really know what kind of tire they need for their car.

Educating the public about how EV tires are engineered to optimize the vehicle's performance is a priority for the industry. Michelin and Continental both have been vocal about their efforts to do just that. But it isn't up to the individual tire makers alone. It's going to take an industrywide approach.

And given time, the message will break through, David Pol-ing, Giti North America vice president of R&D and technical, told Rubber News.

"That will come through proper marketing efforts, which will include our websites, dealer training, print ads, and in some cases, markings on our tires," Poling said. "Giti is prepared with many existing lines that are EV-compatible, new sizes that are being added to address emerging EV fitment requirements for load and speed as well as new lines being developed that will enhance those capabilities even further."

3. A whole lot of data

Consumers want their cars to do really cool things. Turns out, really cool things require a whole lot of connectivity.

And as vehicles-and their tires-become better connected. we step closer to autonomous driving, a technology that will



The data tires collect will play a critical role as the industry steps closer to autonomous driving.

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3 Catalysts: New Mobility

Global Tire Report

take massive amounts of data. And tires—with the data they can collect—play a critical part in ensuring the safety and seamlessness of the movement.

"With AVs, part of the key—or most of the key—is with data," Norberg said. "... Tires are the only thing that touches the road. So tires are involved in providing information back to the vehicle directly through sensors in the tires or other systems in the vehicle."

But data brings with it a bushel of ethical questions—namely who owns it and who has access to it.

Those are among the issues the tire industry is wrestling with, particularly on a regulatory level.

"Access to that data is really critical for tire manufacturers to better provide tires that are meeting the customer or vehicle demands and to also be able to earlier identify if there are issues with the tire or the vehicle," Norberg said. "Data access is one of the key issues that our members are following, seeking greater access to be able to get information back from the connected vehicle environment."

4. Redefining the tire

New mobility is, quite literally, redefining the tire.

Autonomous vehicles and changing expectations in fleet applications could lead to the implementation of modern nonpneumatic tires across a number of sectors—from passenger cars to 18-wheelers. Moreover, as tires become more connected, they get smarter and meld more seamlessly into electronic technology than they have in the past.

Simply, tires are changing, and in some ways, they are changing the very essence of what a tire is. As that happens, regulations have to change, too.

"I did mention the issue of data access on the connected mobility front, but the other aspect that is really important to (tire makers)—when it comes to technology advancements—is ensuring that both regulations are technology neutral, and that regulations are being evaluated whether it's at NHTSA or even globally—to assure that regulations aren't unintentionally stifling innovation," Norberg said. "That is a key for our members as they reimagine what a tire is.

"If you look at any regulation globally, a tire is something made out of rubber that holds air and, you know, some of the new technologies are pushing the limits there," Norberg said. "And so (we are) looking at regulations to say: Are they stifling innovation in ways that we may not have contemplated when the regulation was drafted 20 years ago, 50 years ago? That is something near and dear to us as we are looking at this new technology environment that we are moving into."

5. Defining 'sustainable'

Speaking of definitions, there's another industry term that could use a universal definition: sustainable materials.

Michelin's sustainability efforts in July received a nod for excellence. The tire maker's 45-percent sustainable materials road-ready passenger tire was named the 2023 AutomotiveInnovations Award in



Smart tires are being developed throughout the industry that provide massive amounts of information. The data also brings with it ethical questions.

the Chassis, Car Body & Exterior. And the company used that moment to call attention to something bigger.

"Today, there is no single definition for sustainable materials," Michelin said in a July 17 news release about the award, which was presented by PricewaterhouseCoopers and the Center of Automotive Management. "This lack of definition impairs the readability of the different processes currently implemented in the tire industry." So, the tire maker said, let's get a common definition, one that challenges the industry to push innovation and implementation around renewable and recycled materials. And in doing so, move the industry in a unified, coordinated way toward environmental responsibility.

For its own vision, Michelin has a very clear definition of sustainable materials. And it falls into that familiar refrain of reduce, reuse, renew and recycle. When it comes to "renewable and recyclable," specifically, the tire maker has a clear definition of what that means.

"Michelin considers sustainable materials to be those that are recycled or renewable over the scale of a human lifetime," Michelin said. Bringing a common definition of sustainable materials to the industry does more than set it on a clear path for change, it demands an all-in approach.

"Michelin aims to roll out its sustainable materials strategy across all of its products and not only for one product or several ranges. This deployment requires in-depth transformation of methods, tools and industrial processes," Michelin said. "More broadly speaking, the research and development and industrial challenges will require the creation of new sectors and value chains."

All-in is needed, because the approach will not be easy.

But it is, Michelin said, necessary.



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Hankook upending its R&D approach paradigms with i-Flex airless tire

By Erin Pustay Beaven Rubber News Staff NASHVILLE, Tenn.—Big ideas

aren't always about bottom lines. And when you fail to see the full potential of big ideas, it's easy to miss the best parts.

For Hankook Tire & Technology Co. Ltd., the nonpneumatic tire development space is one of those arenas where ideas and potential matter. It's a place where innovation and investments offer returns in the form of insights.

Sure, the value of those returns, at times, may be hard to quantify. Sometimes, though, R&D is simply about the journey—about changing your point of view.

"It is always difficult to introduce new concepts that completely change existing perspectives," Ted Choi, Hankook Tire America Corp.'s vice president of marketing strategy, told *Rubber News*. "However, we learned a lot in the process of making the initial idea a reality, which greatly improved Hankook Tire's technical capabilities. This process has reminded us of the importance of constant innovation and improvement."

Hankook's journey into the NPT space began just about 13 years ago. And it all started because the company looked at the concept—the idea of using materials to support the load on the tire—and saw potential.

Lots of potential. "We wanted to seek out technological advancement through the change of the tire paradigm," Choi said. "By removing compressed air, which is the basis of the performance of existing pneumatic tires, it was determined that access to a different performance area from pneumatic tires would be possible. "... NPTs open up new design

and functional possibilities. No air space is required, allowing you to design the shape and structure of the tires more freely, which can open a new era in vehicle design." With NPT, there's potential for

With NPT, there's potential for greater safety as nonpneumatic tires wouldn't be as prone to flats or face failures from air loss. Without either of those things comes greater precision in designing for tire performance because maintenance issues (think: over- or under-inflation) are less likely to impact key performance traits such as contact footprints.

Yes, Hankook saw all of this potential when it looked at non-pneumatic tires.

But it saw something else, too: opportunity. A place within the automotive space where nonpneumatic technology could have an impact.

Because new mobility—more specifically, autonomous technology—was gaining traction. And in fleet applications—AV or not—where up-time matters, nonpneumatic technology could make a difference with reduced maintenance time and costs.

That's exactly what Hankook intends to do. And it's even rolled out its first prototype. Say hello to i-Flex. "The i-Flex seems likely to be used in small vehicles, electric vehicles and self-driving vehicles such as robo-taxis, which are heavily driven in the city center," Choi said. "In these vehicles, the durability of airless tires and the reduction in maintenance requirements will be a major advantage."

And while i-Flex—which met the public at expos across the globe, including the 2022 Consumer Electronics Show in Las Vegas—may be the most talked about of Hankook's NPT concepts, the technology isn't reserved for the passenger vehicle space.

Hankook intends to develop NPT solutions for every sector that needs it.

"We are also looking at commercial vehicles and long-distance trucking," Choi said. "Even in these areas, the introduction of airless tires will reduce costs and increase efficiency, which in the long run will bring positive changes to the industry as a whole."

When it comes to those positive changes, Hankook sees NPT playing a critical role in moving the company—and the industry—closer toward sustainability and circularity.

That's because nonpneumatic tires are much less likely to fail prematurely because air pressure losses and punctures aren't possible. In fact, NPTs are likely to last longer—particularly if the materials that make up their supporting structures are durable, keeping more end-of-life tires out of landfills.



Hankook's i-Flex nonpneumatic tire is likely to be used where its durability and reduced maintenance needs will be "a major advantage," such as for small vehicles, EVs and self-driving vehicles.

That's exactly what Hankook intends to do. And it's why the tire maker is designing its NPTs to be retreaded.

"Yes," Choi said, "i-Flex is developing manufacturing technology for retreads in parallel. To this end, we are studying tire casing (wheel and spoke) materials with improved heat and fatigue durability."

Any tire maker operating in the still-not-quite-conquered modern nonpneumatic tire space will tell you that's an aim easier stated than actually achieved.

In fact, there are a lot of challenges that come with NPT development. Ironically, the very essence of nonpneumatic technology is its challenge.

"The biggest challenge in developing NPTs is finding a structural design and optimized materials to achieve the ultimate performance of tires," Choi said. "This is because these factors have a decisive impact on the durability, safety and performance of the tires. Material scientific challenges are critical in tire performance and are optimized in conjunction with structural deformation mechanisms."

But there's also something to be said for tackling challenges that big.

And Hankook, for one, is up for doing that.

The tire maker noted that its material science expertise gives it the flexibility to apply advanced materials technology that breathe life into its airless tire concept.

And that breathes life into other products.

Designing and optimizing its airless tire concepts has strengthened Hankook innovation and development in ways that may be unexpected. By breaking down that air-filled tire paradigm, Hankook gained critical, new perspectives applicable to its pneumatic products.

"These technological advances help improve the performance, durability and safety of pneumatic tires," Choi said. "The development of NPTs allows us to explore the possibilities of tires with a broader perspective, (and) this makes us think about the new values and capabilities that tires can provide to vehicles and drivers beyond traditional pneumatic tire designs."

That's because Hankook looks at the big idea of airless tire design and sees something more—creativity, possibility and insights.

So when you look back on the tire maker's nonpneumatic tire development journey—from i-Flex to the future—don't lose sight of the fact that NPT is a relatively new and critical component to achieving a bigger goal.

"Hankook Tire's development of nonpneumatic tires is part of our innovative approach and constant research and development. Our efforts and enthusiasm in this area play an important role in keeping us at the forefront of the industry," Choi said. "And finally, Hankook Tire's development of nonpneumatic tires means more than just making new products. This shows that we are working to create a sustainable future for the tire industry. This direction is a key part of our business model and corporate culture, which makes us proud."



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Tire makers commit more than \$6.5B in capex

By Bruce Davis Tire Business

After a run of a few lean years in terms of capacity expansion investments, tire makers around the world loosened the purse strings a bit, committing more than \$6.5 billion toward new plants, additional capacity and technology upgrades during the last 12 months.

That sum, spread among a couple dozen individual projects, is \$2 billion more than capital expenditures committed to by tire makers the previous 12 months, *Rubber News* research shows, as well as greater than spending tracked in 2020-21 and 2019-20.

The projects monitored by and reported on by *Rubber News* collectively represent new annual capacities of more than 23 million passenger tire units, 2 million-plus truck/ bus tire units and several thousand additional tons of off-road tires.

Included in the investment are new factories: Nokian Tyres P.L.C.'s in Romania; Petlas Tyre Industry's in Turkey; and Qingdao Sentury's in Morocco.

Of the \$6.5 billion tracked, more than 40 percent—\$2.85 billion—is earmarked for projects in North America and 15 percent for Europe.

In terms of continuing capital investment, most of the two dozen larger tire companies that report their figures publicly ramped up capex spending last year over fiscal 2021.

On average, the reporting firms' capex spending was at 6.9 percent of sales, up marginally over the 6.5 percent reported in fiscal 2021. The range covers a span from 0.1 percent (Casumina) to 16.4 percent (Sailun Group).

Collectively, spending on research and development increased by most of the firms that report such activity, but not at the pace of sales growth. Therefore average R&D spending for 20 companies this year was 3.5 percent, down from 3.8 percent a year ago.

Biggest spenders

The single largest investment disclosed since August 2022 is the \$1.6 billion budgeted by Hankook Tire & Technology Co. Ltd. for its 7-year-old plant in Clarksville, Tenn. The project calls for passenger and light truck tire capacity to double to 10 million units a year and to establish capacity for 1 million radial truck/bus tires a year.

The expansions will create as many as 1,000 new jobs in the Clarksville region, Hankook said, pushing employment in the region to around 2,000.

The investment ties into Hankook's corporate growth goal to essentially double in size by 2030.

Bridgestone Corp. also ranks on the list, committing \$2 billion over the coming several years at 20 factories worldwide to "reinforce its structure for producing premium products," the company said in its recently released 2023 Integrated Report.

For passenger tires, Bridgestone said it will focus investments on production of larger-rim-diameter tires and products equipped with the group's Enliten "light-weighting" technology.

Other projects in Bridgestone's investment package include:

Capital spending t	rends: Fis	cal 2022	
Company	Capital spending in millions	% change vs. '21	% of sales
Continental A.G.	\$2,866.9	24.6%	6.2%
Tire Division	869.8	30.8%	5.8%
Bridgestone Corp.	2,415.1	21.0%	7.7%
Michelin	2,208.2	23.5%	7.3%
Goodyear	1,061.0	8.2%	5.3%
Sumitomo Rubber	569.1	34.1%	6.8%
Tire Division	533.3	35.6%	7.4%
Sailun Group Co. Ltd.	541.0	38.8%	16.4%
Pirelli & C. S.p.A.	418.2	15.1%	6.0%
Yokohama Rubber Co. Ltd.	418.1	41.5%	6.4%
Balkrishna Industries Ltd.	368.2	N.A.	29.5%
Toyo Tire & Rubber Co. Ltd.	360.3	25.2%	9.5%
Kumho Tire Co. Inc.	292.2	N.A.	10.6%
Hankook Tire & Technology Ltd.	296.2	6.0%	4.7%
Nexen Tire Corp.	220.9	117.4%	9.5%
Nokian Tyres P.L.C.	136.7	-20.2%	8.6%
MRF Ltd.	127.5	33.0%	4.4%
Cheng Shin / Maxxis Intl.	123.6	-33.3%	3.4%
Apollo Tyres Ltd.	98.8	-58.0%	3.2%
JK Tyre & Industries Ltd.	56.2	28.2%	3.0%
BRISA-Bridgestone	52.0	23.8%	6.2%
Titan International Inc.	46.9	21.0%	2.2%
Trelleborg Wheel Systems	43.8	24.9%	3.3%
Casumina	0.2	-63.0%	0.1%

• **\$550 million** at the Warren County, Tenn., truck/bus tire plant, to boost capacity by 3,000 units a day and upgrade the plant's technology.

• **\$250 million** through 2026 to renovate and expand capacity at a multi-product tire plant in Belen de Heredia, Costa Rica. The project will result in a 36-percent increase in production capacity to nearly 5 million units a year, with an emphasis on manufacturing improvements for tires for premium applications, including tires for electric/hybrid vehicles.

• **\$53 million** toward boosting capacity at its Camacari, Brazil, passenger/light truck tire plant.

• **\$75 million** over three years to increase capacity and upgrade technology at a tire plant in Pune, India. The project is expected to boost capacity by up to 12 percent at the 10-year-old plant, which now has capacity for 10,700 passenger, light and medium truck tires per day.

• **\$60 million** toward boosting capacity by 16 percent for tread rubber at the firm's Bridgestone Bandag L.L.C. tread rubber plant in Abilene, Texas.

Michelin's sustainability moves

Michelin North America Inc. has committed \$325 million over five years for projects in the U.S. and Canada.

In the U.S., Michelin will invest \$100 million to expand capacity for rubber tracks at the Junction City, Iowa, plant of its Camso off-highway business unit. The plant opened just three years ago. Michelin did not disclose the plant's capacity nor say how much it expects that capacity to increase.

In Canada, Michelin is committing \$225 million to accelerate sustainable mobility initiatives at the firm's three plants there and improve the company's environmental footprint.

The investment will cover the installation of new technologies and equipment at Michelin's three tire plants in Nova Scotia in a bid to respond to market evolution, including converting production to tires for the growing electric vehicle (EV) segment and larger rim-size tires for passenger and light truck vehicles, as well as truck tires with improved fuel efficiency. A key part of the multi-year plan

A key part of the multi-year plan is a \$104 million expansion of Michelin's Bridgewater passenger and light truck tire plant, which will add more than 70 positions to the work force there. Michelin's other plants are in Granton-Pictou (passenger and light truck tires) and Waterville (medium truck tires).

Investing in a new Nokian

Nokian Tyres P.L.C. has budgeted nearly \$900 million for a pair of projects deemed necessary after the Finnish tire maker opted to divest its factory in Russia in the wake of Russia's invasion of Ukraine. The plant in Vsevolzhsk was Nokian's largest factory, with a rated capacity of 16 million tires a year.

The company broke ground May 11 in Oradea, Romania, on a factory with an annual rated capacity of 6 million car and light truck tires. That project is valued at \$700 million, with the Romanian government chipping in an additional \$100 million. The new factory is slated to begin commercial-scale production in 2025.

Nokian also is committing \$174 million to double capacity at its 4-year-old plant in Dayton, Tenn., to 4 million tires annually and add a 350,000-sq.-ft. warehouse adjacent to the factory to help serve the firm's "growing volume of customers in the Sun Belt."

Nexen eyeing growth

Nexen Tire Corp. has secured funding valued at \$322 million that it will put toward expanding production capacity at its 4-yearold plant in Zatec, Czech Republic. The South Korean tire maker said it intends to double the plant's annual capacity to over 12 million tires by year-end 2024, according to filings with the Korean Stock Exchange.

The project also will include expanding warehouse storage capacity at the plant by 220,000 units, bringing the capacity to 486,000 units.

In addition, Nexen disclosed earlier this year that it plans to build a factory in the U.S. in the coming years, with production starting in 2028 or 2029.

Nexen Tire Americas CEO Brian Yoonseok told *Tire Business* earlier this year that Nexen is evaluating sites in eight Southeastern states as possible locations for the factory, which likely would be built with a nameplate capacity of 30,000 tires a day.

The company indicated it wanted to have a site selected by the second half of 2023. No investment figure has been disclosed for that project.

Other investments

Additional investments, by company alphabetically, include:

Aeolus Tyre Co. Ltd. is investing about \$85 million to add 80,000 units of annual capacity for giant tires and special engineering radial tires at the firm's flagship factory in Jiaozuo, Henan, China.

Balkrishna Industries Ltd. budgeted \$45 million toward boosting capacity by as much as 80 percent for OTR/earthmoving tires at its Waluj, India, plant, to 55,000 metric tons a year.

Ceat Ltd. is investing \$45 million at a plant in Ambarnath, India, to boost capacity 10 percent for radial off-highway tires to 55 metric tons per day.

Goodyear has budgeted \$125 million over five years to modernize production of truck and OTR tires at its 77-year-old tire plant in Topeka, Kan., and \$200 million to boost capacity for passenger tires at the Kunshan, China, plant of its Cooper (Kunshan) Tire Co. subsidiary.

The project in China is set to unfold in two phases, one to add 1.1 million units of new capacity for radial tires and a second to add a separate production line for tires for electric and hybrid vehicles, with a projected capacity of 2.6 million units a year.

JK Tyre & Industries Ltd. is investing \$113 million for a twophase expansion of its passenger tire plant in Banmore, India, raising the factory's capacity for radial passenger tires by 31 percent to 5.1 million units a year in the first phase, and then another 31 percent to nearly 6.7 million units by April 2024.

Turkey's **Petlas Tyre Industry & Trade Co.** has budgeted \$360 million to build a separate factory adjacent to its existing plant in Kirsehir in central Turkey, a project that will raise the firm's capacity for passenger car and light truck tires by 42 percent to 340,000 metric tons a year.

Construction is set to start later this year and be completed by 2025 or 2026. The new plant will be equipped with "state-of-the-art" tire production technologies and, once operational, will turn the Kirsehir facility into "one of the largest 'mega' tire factories in Europe."

Pirelli & C. S.p.A. is investing \$113 million over the coming two years at its Mexican factory primarily to boost capacity for larger-rim-diameter tires and tires for electric vehicles that will be sold in the U.S. The upgrade will increase capacity by more than 1 million tires a year, Pirelli said, to 8.5 million units and create 400 new jobs by the time it's completed.

Qingdao Sentury Tire Co. Ltd. is planning to move forward with the construction of a \$297 million tire factory project in Morocco following receipt of a "certificate of overseas investment of enterprises" from local authorities in Qingdao, China.

In a June 5 filing with the Shenzhen Stock Exchange, the Chinese tire maker said it had completed registration of Sentury Tire (Morocco) Co. in Tangier, Morocco. Construction on the plant, near Tangier, was expected to begin in July and take 18 months to complete, Sentury said.

Once fully operational, the plant will have capacity to produce 6 million car and light truck tires per year, with output in the first year reaching 3.6 million units.

Sumitomo Rubber Industries will invest \$213 million in its tire factory in Fazenda Rio Grande, Brazil, to boost capacity for car and light truck tires by nearly 28 percent to 23,000 units per day by April 2024, and double truck/bus tire capacity to 2,200 units per day by early 2025.

SRI's investment should generate 1,000 direct and indirect jobs.

China's **Wanli Tire Co. Ltd.** is planning to upgrade a truck/bus tire plant in Guangzhou City and expand the site's capacity by 60 percent to 24 million units a year. The company submitted an environmental impact report earlier this year for an \$85 million "upgrade and technical transformation project" for public endorsement.

Company	R&D spending in millions	% change vs. '21	% of sales
Continental A.G.	\$3,057.7	-4.9%	7.7%
Tire Division	336.3	8.8%	2.3%
Bridgestone Corp.	854.5	17.5%	2.7%
Michelin	734.0	2.3%	2.4%
Goodyear	501.0	5.9%	2.5%
Pirelli & C. S.p.A.	277.5	9.8%	4.0%
Sumitomo Rubber	207.6	-0.7%	2.5%
Cheng Shin / Maxxis Intl.	150.8	-7.5%	4.1%
Hankook Tire & Technology Ltd.	146.2	5.0%	2.2%
Yokohama Rubber Co. Ltd.	121.9	4.6%	1.9%
Sailun Group Co. Ltd.	93.4	29.2%	2.8%
Toyo Tire & Rubber Co. Ltd.	86.2	1.4%	2.3%
Kumho Tire Co. Inc.	81.0	4.9%	3.6%
Nexen Tire Corp.	70.1	6.0%	3.0%
Apollo Tyres Ltd.	49.8	-4.2%	1.6%
Nokian Tyres P.L.C.	31.2	-7.2%	1.7%
Ceat Tyres Ltd.	20.9	37.3%	1.5%
Titan International Inc.	10.4	3.0%	0.5%
Barez Industrial Group	3.0	N.A.	0.9%
Casumina	0.1	-8.0%	0.1%

R&D spending trends: Fiscal 2022

Nokian's expanded Tennessee factory deepens U.S. roots

By Don Detore Tire Business

DAYTON, Tenn.—The sprawling campus in the foothills of Southeast Tennessee that is Nokian Tyres P.L.C. is beaming one message across the country: Made in the U.S.A.

With the plant now in its fourth year of operation and churning toward its capacity of 4 million tires per year, the message soon will be a reality: Every Nokian tire sold in the U.S.—with the exception of winter tires—will be manufactured at the Dayton plant, located about 38 miles

northeast of Chattanooga. "It's good to see people love that 'Made in the USA' logo," said David Korda, the Dayton factory's operations director.

"Our local people take pride in that, our salespeople take pride in that, and I know our dealers take pride in that."

It's also clear that both management and workers at the factory take pride not only in its products, but also in the Finnish tire maker's emphasis on efficiency, safety and sustainability. That was evident during a plant tour that was the centerpiece of Nokian's "One Tennessee Moment," a three-day event held in late July for the tire trade press.

Sustainability has been ingrained into the Nokian Tyres work culture. The production building is the only tire production facility in the world with a LEED v4 Silver certification, ac-



The \$360 million plant in Dayton, Tenn., has four shifts of roughly 100 people working around the clock.

cording to Nokian, and its LEED v4 Gold-certified administration building is powered completely by energy generated from onsite solar panels.

Since the Dayton plant opened, Nokian Tyres was named the Chattanooga Regional Manufacturers Association's Company of the Year in 2021, and it was the first in Rhea County to receive the Tennessee Governor's Environmental Stewardship Award.

Wes Boling, Nokian Tyres senior communications and content manager, said some of the most difficult questions posed by employees deal with sustainability.

"They want to be good neighbors, protecting our air, water, land," he said. "This community wanted to be sure we wanted to be a sustainable actor."

Blake Markham, human resources director, called the culture a "people-first mindset as opposed to prioritizing process or product first.

"Our business model, no matter where you are at, here or in Finland, you feel like it's the same part of the same company. It's ingrained in our culture."

Markham has played a key role in getting the factory fully staffed. The tire maker recently hired 125 workers from a pool of around 2,000 applicants, boosting the work force to 475.

The \$360 million plant, which began production in early 2020, has four shifts of roughly 100 people working around the clock, producing the all-season Nokian Tyres One and the all-weather WR G4, as well as the all-terrain Nokian Outpost family of products.

Some sizes from the Outpost portfolio soon will be shipped to warehouses across the country,

ecovadis



Company culture stretches across the North Atlantic from Finland to the U.S., a business model that unifies the tire maker no matter the location.

the first light-truck products to be produced at the facility.

Capacity at the 830,000-sq.-ft. plant, running at 2 million to 3 million tires per year, will ramp up to 4 million units by summer 2024. In preparation, equipment continues to be delivered, installed, tested and commissioned.

In the latest wave of hiring, Markham said the more complicated positions were filled first (January), culminating with the hiring for easier positions in the final wave (March).

Today, tenured employees dressed in bright green shirts many without prior leadership experience—mill about the plant floor, mentoring and teaching new employees on how to operate equipment safely and efficiently.

"You see people who have been operators all their lives, that here, they have a chance to grow and advance their career and lead people," Korda said. "You see them blossom and develop. That is gold to watch them."

As new employees are trained, work continues outside on a fourth building on the expansive campus, a 350,000-sq.-ft. warehouse that will be able to store up to 600,000 tires. The \$174 million investment is set to open by mid-2024.

Once finished, the warehouse will be Nokian's 10th in the U.S.—the tire maker operates facilities in Vermont, Connecticut, Maine and New York, and outsources the warehousing at five other facilities across the U.S.

Despite all the progress in Dayton, it's been a difficult few years for the Nokia, Finland-based tire maker. Not only did the pandemic cre-

Not only did the pandemic create major challenges in staffing the Dayton plant, the company felt compelled to sell its plant in Vsevolozhsk, Russia, to Russian energy and chemicals company P.J.S.C. Tatneft for roughly \$307 million. The sale completed the Finnish tire maker's exit from the country, announced soon after Russia invaded Ukraine.

The Russian plant, which came online in 2005, produced 16 million tires annually, with 8 million sold in Russia and 8 million sold globally. It accounted for 80 percent of Nokian's worldwide capacity.

That's a lot fewer tires at a time when demand peaked, particularly post-pandemic.

"Tire dealers told us, 'We have your back,' "Boling said.

To counter the shortfall, Nokian broke ground in May on a passenger tire factory in Oradea, Romania. It budgeted nearly \$700 million for the factory, and the Romanian government has approved another \$100 million in funding.

The Oradea factory is projected to start commercial-scale production in 2025, with an eventual capacity of 6 million tires that will serve the European market exclusively.

By 2027, Nokian Tyres said it will have capacity to produce 15 million tires globally, with Oradea accounting for 40 percent of that capacity, the original factory in Nokia accounting for 35 percent and the remaining 25 percent produced in Dayton.

That could change, of course: officials in Dayton say the campus can accommodate two more major expansions, boosting capacity eventually to 12 million tires.

"We have the land for it, we have the dreams of it, but we have no immediate plans for that," Boling said.

True to its Scandinavian roots, the Nokian Tyres campus features three saunas, including two in the production area for workers to use.

Korda, who helped to oversee construction of the Dayton plant, wants tire dealers to know one fact about the Nokian work force:

"We really care," he said. "We take a lot of time and energy to make sure that what we give them is the best we can possibly do at the highest standards. As this year finishes, we'll be able to do that on a higher level and give them the tires they need."

He said some tire dealers who have toured the plant have left with that impression.

"They see it, feel it and want to be part of it," Korda said. "They see how we're going about it, and hopefully it resonates."



Nokian's Dayton, Tenn., campus has room for two more major expansions.

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Company/ plant location	opened	code(s)	(u=unionized)	types*	capacity*			
NORTH AMERICA								
	CAN							
Indgestone Canada Inc. (Bridgestolle Corp	1.)		1 2000	10(*)	20,000 u/d			
Joliette, Quebec	1966	IVN,XY,IXY,9B	1,2000	1,2 (f)	20,000 u/a			
Goodyear Canada Inc. (Goodyear Tire & Rut	ber Co.	0	000.		40.000			
Medicine Hat, Alberta	1960		300u	1 (r,b)	13,000 u/d			
Napanee, Untario	1990	4B,14B	800	1 (r)	20,000 u/d			
Michelin North America (Canada) Inc.	(Micheli	n)						
Bridgewater, Nova Scotia	1973	B3,1BD	1,148	1,2 (r)	60,000 t/y			
Granton-Pictou, Nova Scotia	1971	HN,1HN	651	1,2 (r)	9,000 t/y			
Waterville, Nova Scotia	1982	M5,1M5	1,281	3 (r)	137,500 t/y			
	MEX	(ICO						
Bridgestone de Mexico S.A. de C.V. (Br	idgestor	ne Corp.)						
Cuernavaca, Morelos	1980	V6,1V6	1,189u	1,2 (r)	25,0000 u/d			
Bridgestone Neumaticos de Monterrey	/ S.A.	de C.V. (Bridges	stone Corp.)	•				
Monterrey, Nuevo Leon	2007	RB,1RB	348u	1,2 (r)	66,515 u/d			
Continental Tire de Mexico S.A. de C.	. (Cont	inental A.G.)						
San Luis Potosi	1975	P5, 1P5	1,500u	1,2 (r,b)	6.0 mil u/y			
Corporacion de Occidente S.A. de C.V.	Goody	ear Tire & Rubber	Co.)	1 . ,				
El Salto	2008	RD.1RD.R7.1R7	1.124	1.2 (r)	19.000 u/d			
Goodvear SLP s.r.l. de C.V. (Goodvear Tire	& Rubb	er Co.)	,	, ()	.,			
San Luis Potosi	2017	1PI	1 0000	12(r)	6.0 mil u/v			
Industrias Michelin S.A. de C.V. (Micheli	1)		1,0000	1,2(1)	0.0 mil u/y			
	2018	031	462	12(r)	1 150 µ/d			
	1087	кл 1кл	375	1,2 (I)	6,000 u/d			
	1307	14,114	575	1,2 (1)	0,000 u/u			
Maxing City	1072	55155	4020	10047/b)	4.016 u/d			
	1972	JF, I JF	402u	1,2,3,4,7 (D)	4,210 u/u			
	1940	AG,ZAO	391	1,2,3 (D)	4,707 u/u			
	1984	4F, 14F	6700	1,2,4 (r,b)	15,500 u/d			
Pirelli Neumaticos S.A. de C.V. (Pirelli &	U. S.p.A	.) [l			
Silao	2012	UN,1UN	2,300	1 (r)	6.4 mil u/y			
UNI	TED	STATES						
Bridgestone Americas Tire Operations	L.L.C	• (Bridgestone Co	rp.)					
Akron, Ohio	2022		60u	9 (r)	25,000 u/y			
Bloomington, Indiana	1965	2M,12M,3M,13M	450u	6 (r,b)	300 u/d			
Des Moines, Iowa	1945	YE,1YE,YU,	1,050u	4 (r,b)	4,000 u/d			
		1YU,VE						
Graniteville, South Carolina	1998	7X,17X,8X,18X, 9X,19X	1,495	1,2 (r)	36,500 u/d			
LaVergne, Tennessee	1972	D2,1D2,E3,1E3, Y7,1Y7	794u	3 (r)	5,700 u/d			
Morrison, Tennessee	1990	2C,12C,4D,14D, 5D,15D	1,020u	3 (r)	9,150 u/d			
Trenton, South Carolina	2014		369	6 (r)	66 t/d			
Wilson, North Carolina	1974	W2,1W2,Y3,1Y3, 0B,10B	1,663	1,2 (r)	31,247 u/d			
Carlstar Group L.L.C.		•		•				
Clinton, Tennessee	2000	C4,1C4	500	4,7	10,200 u/d			
Jackson, Tennessee	2011	P4,1P4	400	4,7 (r,b)	11,700 u/d			
Continental Tire the Americas Inc. (Con	itinental	A.G.)						
Clinton, Mississippi	2019	02P	700	3 (r)	500,000 u/y			

hese tables list worldwide tire manufacturing plants, divided into six geographical regions: North America, comprising the U.S., Canada and Mexico; Latin America, including Central and South America; Europe, including Russia and most of the former Soviet Bloc nations; Asia, including China, India, Japan, the Pacific Rim and former states of the Soviet Union

located in Asia; Africa; and the Middle East. The tables list tire makers, followed in parentheses by the parent firm's

name, where applicable. Plant information shows: The year the unit opened; each plant's

DOT code(s); the number of production workers employed and union status; types of tires made at the facility; and production capacity at the plant. Information has been obtained from the companies and/or other sources.

The abbreviations are:

• TIRE TYPES: 1–Passenger; 2–Light Truck/Van; 3–Medium Truck/bus; 4–Agricultural; 5–Motorcycle; 6–OTR; 7-Industrial; 8–Aircraft; 9–Racing • TIRE CONSTRUCTION: r–Radial; b–Bias-ply

• PLANT CAPACITIES: u/d–Units per day; u/y–Units per year; t/y–Metric tons per year; t/d–Metric tons per day; t/m–Metric tons per month

Company/ plant location	opened	code(s)	(u=unionized)	types*	capacity*
Mount Vernon, Illinois	1972	A3,1A3,3C,13C, 6B,16B	3,800	1,2,3 (r)	14.1 mil u/y
Sumter, South Carolina	2014	VY,1VY	1,300	1,2 (r)	4.0 mil u/y
Cooper Tire & Rubber Co. (Goodyear Tire &	Rubbe	r Co.)	•		
Findlay, Ohio	1914	UP,1UP	1,009u	1,2 (r)	18,000 u/d
Texarkana, Arkansas	1964	UT,1UT	1,734u	1,2 (r)	26,000 u/d
Tupelo, Mississippi	1984	U9,1U9	1,401	1 (r)	37,000 u/d
Giti Tire (USA) Ltd. (Giti Tire Pte. Ltd.)		·	•		
Richburg, South Carolina	2017	01B	600	1 (r)	5.0 mil u/y
Goodyear Tire & Rubber Co.		•			
Akron, Ohio	1983	MB,1MB	375u	9 (r)	2,000 u/d
Danville, Virginia	1966	MC,1MC	2,300u	3,8 (r,b)	10,000 u/d
Fayetteville, North Carolina	1969	PJ,1PJ	2,900u	1,2 (r)	40,000 u/d
Lawton, Oklahoma	1978	M6,1M6	2,800	1,2 (r)	65,000 u/d
Topeka, Kansas	1944	MJ,1MJ	1,600u	2,3,6 (r,b)	7,000 u/d
Hankook Tire America Corp. (Hankook Tir	e & Tecl	hnology Co. Ltd.)	1		
Clarksville, Tennessee	2016	00T	926	1,2 (r)	4.59 mil u/y
Hoosier Racing Tire Corp. (Continental A.G	.)				
Plymouth, Indiana	1979	J7,1J7	300	9 (r,b)	
Kumho Tire Georgia Inc. (Kumho Tire Co. Ir	1C.)				
Macon, Georgia	2016	000	325u	1,2 (r)	3.33 mil u/y
Michelin North America Inc. (Michelin)		•	•		
Ardmore, Oklahoma	1969	AP,1AP	1,678	1,2 (r)	23,000 u/d
Dothan, Alabama	1979	B7,1B7	524	2 (r)	6,800 u/d
Fort Wayne, Indiana	1961	BF,1BF	1,558u	1,2 (r)	21,000 u/d
Greenville, South Carolina	1975	M3,13M,4M,14M	1,603	1,2 (r)	27,000 u/d
Lexington, South Carolina	1981	B9,1B9	3,164	1,2,6 (r)	288,200 t/y
Norwood, North Carolina	1987		459	8 (b)	5,900 t/y
Spartanburg, South Carolina	1978	B6,1B6	1,099	3 (r)	7,000 u/d
Starr, South Carolina	2013		168	6 (r)	
Tuscaloosa, Alabama	1945	BE,1BE	1,326u	1,2,9 (r)	15,000 u/d
Mitas Tires North America Inc. (Yokohan	na Rubb	er Co. Ltd.)	•		
Charles City, Iowa	2012	UD,1UD	237	4 (r)	13,500 t/y
Nokian Tyres Inc. (Nokian Tyres P.L.C.)		•	•	•	
Dayton, Tennessee	2019	03B	300	1,2 (r)	1.0 mil u/y
Pirelli Tire L.L.C. (Pirelli & C. S.p.A.)			•		
Rome, Georgia	2002	JR,1JR	300	1 (r)	400,000 u/y
Specialty Tires of America Inc.					
Indiana, Pennsylvania	1915	CY,1CY	300	2,4,6,7,8,9 (b)	3,300 u/d
Unicoi, Tennessee	1997	3U,13U	200	2,4,6,7 (b)	400,000 u/y
Sumitomo Rubber USA L.L.C. (Sumitomo	Rubber	Industries Ltd.)			
Tonawanda, New York	1999	DA,1DA	1,359u	1,2,3,5 (r,b)	3,150 t/m
Titan Tire Corp.					
Bryan, Ohio	1966	A9,1A9	220u	4,6,7 (r,b)	450 u/d
Des Moines, Iowa	1943	CF,1CF	600u	2,4,6,7 (r,b)	13,000 u/d
Freeport, Illinois	1964	PK,1PK	600u	4,6,7 (r,b)	10,000 u/d
Toyo Tire North America Manufacturin	g Inc.	(Toyo Tire Corp.)			
White, Georgia	2005	73,173	1,592	1,2 (r)	13,900 u/d
Explana TIRE TYPES: 1-passenger; 2-light truck/var; 3-medium tru	ation o ick/bus; 4	f abbreviations I–agricultural; 5–mot	orcycle; 6 –0TR; 7	-industrial; 8 –air	craft; 9 –racing

 TIRE CONSTRUCTION: r-Radial; b-Bias-ply
 PLANT CAPACITIES: u/d-Units per day; u/y-Units per year; t/y-Tons per year; t/d-Metric tons per day; t/m-Metric tons per month

 Names in parentheses following company names indicate the parent company.

Company/ plant location	Year opened	DOT code(s)	Employees (u=unionized)	Tire types*	Estimated capacity*
Yokohama Tire Corp. (Yokohama Rubber Co	. Ltd.)			illes.	oupuony
Salem, Virginia	1968	CC,1CC	910u	1,2 (r)	6.2 mil u/y
West Point, Mississippi	2015	JAC	500	3 (r)	750,000 u/y
Yokohama TWS (Yokohama Rubber Co. Ltd.)		1			
Spartanburg, North Carolina	2015	01H	150	4 (r)	
LATIN AMERICA					
Α	RGE	NTINA			
Bridgestone Argentina S.A.I.C. (Bridgest	one Cor	p.)			
Buenos Aires	1931	W5,1W5	1,319u	1,2,3,4,6 (r,b)	13,733 u/d
FATE S.A.I.C.I.				•	
San Fernando	1963	F5,1F5	1,563u	1,2,3,4,6 (r,b)	16,900 u/d
Pirelli Neumaticos S.A.I.C. (Pirelli & C. S.p	.A.)		000.	4.0 (-1)	4.0 miles (c
Merio	2014	XIVI,1XIVI	9000	1,2 (r,D)	4.0 mii u/y
Bio Grande do Sul	T		1	7 (b)	
	BR/		ļ	. (3)	
Bridgestone do Brasil Industria e Com	ercio	Ltda. (Bridgesto	ne Corp.)		
Camacari	2007	96,196	1,426u	1,2 (r)	13,720 u/d
Santo Andre	1940	E2,1E2,5T,15T,	2,915u	1,2,3,4,6 (r,b)	23,800 u/d
Compania Goodyear do Brasil Product	os de	Borracha Ltd	I I. (Goodvear Ti	I re & Rubber C	0.)
Americana	1971	Y1,1Y1	2,000u	1,2,3,4,6 (r,b)	35,000 u/d
Continental do Brasil Produtos Autom	otivos	Ltda. (Continer	tal A.G.)		
Camacari/Bahia	2006	65,165	2,100	1,2,3 (r)	9.8 mil u/y
Grupo Industria Brasil Ltda. (Prometeon T	yre Gro	up s.r.l.)	,	1	
Gravatai	1976	XE,1XE	2,320	2,3,4	39,000 u/d
Santo Andre	1940	XK,1XK	2,140	3,4,6 (r,b)	4,500 u/d
Manaus	2012		681	5 (rh)	5.0 mil u/v
Sao Paulo	1960		914	5 (r,b)	5.0 mil u/y
Maggion Inds. de Pneus E. Maquinas L	.tda.	1	ļ.		
Guarulhos	1961	P7,1P7	650u	1,2,4,5,7 (b)	60 t/d
Pirelli Pneus Ltda. (Pirelli & C. S.p.A.)		-			
Campinas	1970	XL,1XL	2,050u	1,2,5,9 (r)	10.0 mil u/y
Feira de Santana	1986	N9,1N9	1,200	1 (r,b)	5.0 mil u/y
Gravata	1976	XE,1XE	600	5 (r,b)	3.5 mil u/y
Bento Goncalves	3	07 107	7000	457	3.0 mil u/v
Rodaco Brasil (Michelin)	1000	oriși ori		1,,0,1	
Porto Allegre				7 (b)	
Sociedade Michelin de Participacoes	Indust	tria e Comerc	io Ltda. (Mi	chelin)	
Campo-Grande	1981	B8,1B8	2,828	3,6 (r)	146,500 t/y
Itatiaia-Resende	1999	3R,13R	1,237	1,2 (r)	4,000 u/d
Sumitomo Rubber do Brasil Ltda. (Sumi	tomo Ri	ubber Industries Li	td.)	100(*)	0 500 t/m
Fazenda Rio Grande	2013	NA, INA, WO, IWO	1,513	1,2,3 (f)	2,500 1/11
Sao Paulo	1939	MX.1MX	600u	2.3.4.6 (r.b)	4.500 u/d
	СН	ILE	I		
Goodyear de Chile S.A.I.C. (Goodyear Tire	& Rubb	er Co.)			
Santiago	1978	M7,1M7	850u	1,2,3 (r,b)	16,000 u/d
С	OLO	MBIA			
Goodyear de Colombia S.A. (Goodyear Tire	e & Rub	ber Co.)			
Cali	1945	MY,1MY	300u	3,4,6 (r,b)	1,800 u/d
C	OST/	A RICA			
Bridgestone Costa Rica S.A. (Bridgestone	Corp.)		040	4.004	50 11
San Jose	1967	WB,1WB	940	1,2,3,4 (r,b)	5.0 mil u/y
		ADOR			
Cuenca	A.G.)	1H 11H	9000	123 (rb)	2.2 mil 11/4
		BU		,, <u>,</u> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	IIII U/Y
Compania Goodvear del Peru S.A. (Goo	dyear)				
Lima	1945	NT,1NT	300u	1,2,3,4,7 (r,b)	5,000 u/d
Lima Caucho S.A.					
Lima	1955	7E,17E	142u	1,2,3,4 (b)	1,660 u/d
Letter the second se	JRU	GUAY			
Fabrica Uruguaya de Neumaticos S.A.	(FUNSA	A)			
Montevideo	1935	4Q,240	150	1,2,3,4,7 (r,b)	
V	ENE	ZUELA			
Alice Neumaticos de Venezuela	40	50.450	4 052	4.00.01	
Valencia	1955	F2,1F2	1,050u	1,2,3 (r)	6,800 u/d

company/ plant location	opened	code(s)	(u=unionized)	types*	capacity*
EUROPE					
	BEL/	ARUS			
Belshina J.S.C.					
Bobruisk	1972	4S,RR,425	12,000u	1,2,3,4,6,7	4.79 mil u/y
			,	(r,b)	
CZ	ECH R	EPUBLIC	•		
Barum Continental Spol s.r.o. (Contine	ental A.G.)				
Otrokovice	1972	HW,1HW	4,700u	1,2,3,7 (r,b)	21.5 mil u/y
Mitas a.s. (Yokohama Rubber Co.)					
Otrokovice	2013	54,154	536u	4,6 (r,b)	42,000 t/y
Prague	1934	C6,1C6	865u	4,6,7 (r,b)	28,000 t/y
Zlin	1993	6J,16J	906u	4,5,6,7,8 (r,b)	19,000 t/y
Nexen Tire Europe s.r.o (Nexen Corp.)	· · · · ·		•		
Zatec	2019	035	831u	1,2 (r)	5.21 mil u/y
	FINL	AND		1	J.
Nokian Tyres P.L.C.					
Nokia	1904	YI 1YI	9000	12467 (rb)	91 000 t/v
Nonu	EDA	NCE	0000	1,2,-1,0,1 (1,0)	01,000 09
	ГПА	NCE			
Cie. Generale des Etablissements N	Aichelin		1		
Bontães	1953	FJ,1FJ	5810	о (r)	4,900 t/y
Cholet	1970	FK,1FK	1,289u	1,2 (r)	15,000 u/d
Clermont-Ferrand	1988	L0,1L0	703u	1,2 (r)	5,000 u/d
Clermont-Ferrand	1921	FH,1FH	1,860u	1,2 (r)	2,000 u/d
La Roche-sur-Yon	1972	B1,1B1	647u	3 (r)	3,500 u/d
Le Puy-en-Velay	1977	5E,15E	632u	6 (r)	45,000 t/y
Montceau-les-Mines	1970	FL,1FL	1,074u	6,7 (r)	28,000 t/y
Roanne	1974	F3,1F3	815u	1,2 (r)	14,000 u/d
Continental France S.N.C. (Continental	A.G.)				
Sarreguemines	1964	CN,1CN	1,300u	1 (r)	10.0 mil u/y
Goodyear-Dunlop Tyres France S.A.	(Goodyear	Tire & Rubber C	0.)	1	
Amiens	1958	DL,1DL	1,000u	1 (r)	16,000 u/d
Montlucon	1920	DK 1DK	700	125679(r)	b/u 000 a
Pneumatiques Kleber (Michelin)	1.020	Bitting	1000	1,12,0,0,1,0 (.)	0,000 0,0
	1063	EY 1EY	832	1 (r)	54 400 th
	CEDI		002	+ (i)	04,400 0 9
	GERI	MAN Y			
Continental A.G.				1	<u>, </u>
Korbach	1908	CP,1CP	2,400u	1,2,5,7 (r,b)	9.0 mil u/y
GOODYEAR TIRE & RUBBER CO.					
* Dunlop GmbH					
Hanau	1893	DM,1DM	1,300u	1,2 (r,b)	21,000 u/d
Wittlich	1971	DN,1DN	900u	3 (r)	6,700 u/d
* Gummiwerke Fulda GmbH	· · ·		•		
Fulda	1946	NE,1NE	1,500u	1,2 (r)	21,000 u/d
* Pneumant Reifen & Gummi Werke	GmbH		,		
Furstanwalda	1006	K5 1K5	7000	1.2 (r)	10 000 µ/d
Disco	1045		7000	1,2 (1)	10,000 u/u
Riesa	1945	105,1105	5500	[I (r)	16,000 u/d
Reitenwerke Heidenau G.m.b.H. &	Co. Pro	auktions K.			1
Heidenau	1946	N6,1N6	135	1,2,5,7,9 (b)	2,500 u/d
Michelin Reifenwerke K.G.a.A. (Miche	elin)				
Bad-Kreuznach	1966	FT,1FT	1,289u	1,2 (r)	26,000 u/d
Homburg	1971	FV,1V	1,280u	,3 (r)	4,000 u/d
Karlsruhe	1931	FW,1FW	593u	,3 (r)	5,000 u/d
Pirelli Deutschland G.m.b.H. (Pirelli &	C. S.p.A.)				
Breuberg	1988	EB.EC	2.500	1 (r)	6.0 mil 11/v
Breuberg	10/5		17 500	15 (rb)	7.4 mil
	1940		17,000	(u,u)	, . , u/y
	HUN	GARY			
Apollo Tyres (Hungary) Kft. (Apollo Tyr	res Ltd.)	1			
Gyongyoshalasz	2017	023	1,081	1,3 (r)	5.88 mil u/y
Bridgestone Tatabanya Termelo Kft	. (Bridgeste	one Corp.)			
Tatabanya	2008	VR,1VR	1,150	1,2 (r)	18,248 u/d
Hankook Tire Hungary Ltd. (Hankook T	ire Europe	Holdings B.V.)			•
Racalmas	2007	2X,12X	2,864u	1,2 (r)	17.3 mil u/v
Michelin Hungaria Tyre Manufacture	e Ltd. (Mi	chelin)		1	·
Nviregyhaza	1979	61,161	1.0460	1.2 (r)	3.000 u/d
			.,0 100	.,= (')	0,000 u/u
Pridrontona Italia Manuf					
Bridgestone Italia Manufacturing S.	p.A. (Brid	gestone Corp.)			
Modugno	1962	VP,9C	642u	1 (r)	19,600 u/d

DOT

Year

Employees

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Company/ plant location	Year opened	DOT code(s)	Employees (u=unionized)	Tire types*	Estimated capacity*
Pirelli Tyre S.p.A. (China National Chemical Co	orp.)	I			
Bollate	1988	XA,1XA	250u	1 (r)	400,000 u/y
Settimo Vettura	1955	HT,1HT	1,050u	1 (r)	4.0 mil u/y
S.A. Michelin Italiana (Michelin)	1071		05.6.1	2 (r)	2 500 u/d
Alessandria	19/1		800U	3 (f)	3,500 u/a
Yokohama TWS (Yokohama Bubber Co. 1 td.)	1903	עווו,טוו	2,1310	1,2 (1)	55,000 u/u
Tivoli	1939	XC.1XC	600u	4 (r)	34.000 t/v
LU	XEM	BOURG			. ,
Goodyear S.A. (Goodyear Tire & Rubber Co.)					
Colmar-Berg	1951	NJ,1NJ	1,400u	3,6 (r)	6,000 u/d
Dudelange	2021	L1,1L1	70u	1,2 (r)	500,000 u/y
NE	THE	RLANDS			
Apollo Vredestein B.V. (Apollo Tyres Ltd.)					
Enschede	1947	DV,1DV	588u	1,4 (r)	670,000 u/y
Magna Tyres Group	·	1	r	<u>r</u>	<u>1</u>
Hardenberg	2018			6,7 (r,b)	
	POL	AND			
Bridgestone Poznan sp.zo.o (Bridgestone	Corp.)		r	1	1
Poznan	2000	3Y,13Y,7G,276, C5,1C5	1,923u	1 (r)	31,208 u/d
Bridgestone Stargard Sp. Zo.o. (Bridgest	tone Cor	p.)		<u> </u>	
Stargard	2009	JY,1JY	926	3 (r)	4,328 u/d
Kabat Spoelka Jawna					
Budzyn	1994		750	4,7 (b)	
Michelin Polska S.A. (Michelin)			Ĩ	1	1
Olsztyn	1968	B5,1B5	4,608u	1,2,3,4,7 (r,b)	203,000 t/y
TC Debica S.A. (Goodyear Tire & Rubber Co.)		1	r	1	
Debica	1939	A5,1A5,T3,1T3	2,500u	1,2,3,4,7 (r,b)	48,000 u/d
	PORT	UGAL			
Companhia Nacional de Borracha S.A	• (CNB/C	AMAC)			
Santo Tirso	1967	F4,1F4	500u	1,2,3,4 (r,b)	3,500 u/d
Continental Mabor Industria de Pneus	5 S.A. (Continental A.G.)	2 00011	146(r)	10.0 mil u/u
Lousado	1940		3,000u	1,4,0 (1)	10.0 IIIII u/y
Continental Automotive Products S.P.		tinental A G)			
Timisoara	1998	6G.266	2.600	1.2 (r)	16.0 mil u/v
Eurotire Inc.			1,000	1.,= (.)	
Drobeta	2009		480	6 (r)	25,000 u/y
Michelin Romania S.A. (Michelin)				<u> </u>	
Victoria	1939	N4,1N4	1,403u	1,2 (r,b)	11,840 u/d
Zalau	1981	L7,1L7	1,395u	3,7 (r)	2,000 u/d
S.C. Pirelli Tyres Romania S.r.I. (Pirelli &	C. S.p.A)			
Slatina	2006	93,193	3,450	1 (r)	13.5 mil u/y
	RUS	SIA*			
Altaiskiy Shinniy Kombinat	-	1		1	,
Barnual	1968		5,100	2,3,4,6,8 (b)	2.8 mil u/y
Bridgestone CIS L.L.C. (Bridgestone Corp.)	*			1	
uyanovsk	1998	עזו,טז	034	I (ľ)	4,862 U/d
	2012		1 000	12(r)	3.0 mil u/u
Ikon Tyres (P.I.S.C. Tatneft)	2013	L	1,000	[¹ ,∠ (1)	0.0 mii u/y
Vsevolozhsk	2005	60,160	972u	1,2 (r)	16.0 mil u/v
J.S.C. Cordiant	1-000		1	_ ·,= \·/	
Omsk	1996	HF,1HF	2,000u	2 (r)	1.0 mil u/y
Yaroslavl	1932	AR,1AR,J6,1J6	2,000u	1,2,3 (r,b)	3.2 mil u/y
J.S.C. Nizhnekamskshina (J.S.C. Tatneftek	himinves	st-Holding)			
Nizhnekamsk	1974	24,124,YY,1YY,	15,500	1,3,4 (r,b)	34,100 u/d
)*	17,117			
Kirov	1943	6P16PXH1XH	1 600	12(rb)	6.0 mil u/v
Voronezh	1950	JW.V7.YB	900	1.2 (r.b)	2.3 mil u/y
Power International Tires L.L.C.	1.000	,,	1	.,= (.,2)	u/y
Davydovo	2004	22,122	727	1,2 (r)	6,000 u/d
Uralshina L.L.C.					
Yekaterinburg	1943			7	
Voltyre-Prom J.S.C. (Titan International Inc.)	*				
Volzhskiy	1964	V2,1V2	1,900	2,4,7 (r,b)	2.0 mil u/y
Yokohama R.P.Z. L.L.C. (Yokohama Rubber	Co. Ltd.)*			
Lipetsk	2012	TK,1TK	566	1,2	1.6 mil u/y

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Company/ plant location	Year opened	DOT code(s)	Employees (u=unionized)	Tire types*	Estimated capacity*
	SEF	RBIA			
Cooper Tire Serbia (Goodyear Tire & Rubber	Co.)				
Krusevac	1970	U3,1U3	855	1 (r)	14,000 t/y
Linglong International Europe d.o.o. (0	lingdao	Linglong)			
Zrenjanin	2022	05H		1,2,3,6 (r)	6.0 mil u/y
Mitas d.o.o. (Yokohama Rubber Co. Ltd.)	<u>, </u>	r	r	r	
Ruma	1982	4R,14R	451u	4,6,7 (r,b)	25,000 u/d
Diret	1025	TE 1TE	2 409	125 (rb)	7 500 u/d
	1930	15,115	3,400	1,2,3 (1,0)	7,500 u/u
Indijia City	2022	05C	500	1.2 (r)	5.0 mil u/v
SLOV		REPUBLIC		-,- (-)	
Continental Matador Rubber S.r.o. (Cont	inental .	A.G.)			
Puchov	1947	6Y,16Y	1,800	3 (r)	2.9 mil u/y
Puchov	1947	J3,1J3	2,700u	1,2 (r,b)	15.0 mil u/y
	LOV	/ENIA			
Goodyear Dunlop Sava Tires d.o.o. (Goo	dyear T	ire & Rubber Co.)			
Kranj	1998	H3,1H3	1,4500u	1,2,3 (r)	25,000 u/d
	SP/	AIN			
Bridgestone Hispania S.A. (Bridgestone Co	orp.)				
Bilbao	1931	VT,1VT,5C,15C	893u	3 (r)	5,296 u/d
Burgos	1976	WF,1WF,6C,16C	1,318u	1,2 (r)	26,874 u/d
Puente San Miguel	1965	F6,1F6,F7,1F7, 0E,10E	388u	4,6,7 (r)	800 u/d
Michelin Espana Portugal S.A. (Michelin)					
Aranda de Duero	1970	HA,1HA	1,258u	3 (r)	6,500 u/d
Lasarte	1934	HB,1HB	488u	5 (r,b)	10,000 u/d
Valladolid	1974	H1,1Hi	1,624u	1,2,4 (r)	102,000 t/y
Vitoria	1966	HC,1HC	3,221u	1,2,6 (r)	210,400 t/y
	UKR	AINE			
C.J.S.C. Rosava					
Bila Tserkva	1972	KC,X3	6,054	1,2,3,4 (r,b)	6.1 mil u/y
Dneproshina JSC	1	I	ľ		
Dniepropetrovsk	1961	X8,1X8	2,086u	1,2,3,4,6,7 (r,b)	120 t/d
Eurotire Inc.					
Dniepropetrovsk	2002			6 (b)	
Valsa Bila Tserkva Tyre Factory No. 2					
Bila Tserkva	1988	KD,1KD	1,430	1,3,4,5,6 (r,b)	1.1 mil u/y
UNIT	ED I	KINGDOM			
Cooper Tire & Rubber Co. Europe Ltd.	(Goody	ear Tire & Rubber	Co.)*	1	I
Melksham, England	1885	AT,1AT	400u	5,9 (r,b)	6,350 u/d
Duniop Aircraft Tyres Ltd.	1010	ĺ	2000	0 (rb)	110.000
	1910	<u> </u>	2900	o (I,D)	110,000 u/y
Burton-on-Trent England	1969	XP1XP	400	1 (r)	200.000 µ/v
Carlisle. England	1969	XN.1XN	900u	1 (r)	3.0 mil u/v
* Plant being phased out by year-end 2023		,			
ΔSIΔ					
General Transworld Manufacturing Co					
	10/3	20 120	500	1234 (b)	2.4 mil 11/1
A7			300	1,2,0,4 (0)	2.4 mii u/y
Azerbaijan Tyre					
Baku	1960		2.530	1.3.4.5	6.0 mil u/v
BA	NGL	ADESH	_,	.,.,.,.	
Ceat Akkhan Ltd. (Ceat Ltd.)					
Dhakka	2014			2,3,5 (b)	65 t/d
C	AME	BODIA	I		I
Cart Tire Co. Ltd. (Sailun Tire Group)					
Svay Rieng	2022	05Y		1,2,3 (r)	9.0 mil u/v
General Rubber (Cambodia) Co. Ltd. (Ji	angsu (General Science Te	chnology Co. Lt	td.)	·
Sihanouk	2023	076	1,600	1,2,3 (r)	3.5 mil u/y
Explan	ation o	fabbreviations			
TIRE TYPES: 1-passenger; 2-light truck/van; 3-medium tru TIRE CONSTRUCTION: r-Radial: b-Rias-phy PLANT	ick/bus; 4 F Capaci	-agricultural; 5-mot	orcycle; 6 –OTR; 7 lav: u/v –l Inite per	-industrial; 8-ain	craft; 9 –racing er vear:
t/d-Metric tons	per day; t	/m-Metric tons per n	nonth	, γγ =10115 μ	si youi,
Names in parentheses following	g compa	ny names indicate	e the parent com	npany.	

Company/ plant location	opened	code(s)	(u=unionized)	types*	capacity*
	СН	INA			
AHCOF International Development Co	. Ltd.		1	1	
Hefei		08,108			124,000 u/y
Annui Chemicais Import & Export Co.	Lta.			1	1.0 mil u/v
Anhui Kaiyuan Tire Co. Ltd.	<u> </u>		<u> </u>	1	1.0 min u/y
Anhui	1957	4E,14E	705	3 (b)	124,000 u/y
Anhui Primewell Rubber & Plastics Co	. Ltd.	(Giti Tire Pte Ltd.)			1
Anhui		JP,1JP		5 (b)	1.5 mil u/y
Aufine Group. Ltd.	1986		5 920	3 (r)	1.5 mil u/v
Beijing Capital Tire Co. Ltd.	1000		0,020	0(1)	1.5 min u/y
Beijing	1970	0J,10J	2,300	1,2,3 (r,b)	3,000 u/d
Beijing Souchuang Tyre Co. Ltd.		1			
Beijing	1995			3,4 (r)	7,100 u/d
* Bridgestone (Shenvang) Tire Co. Ltd. / Shenvang	1997		Q1/J1	3 (r)	4 388 u/d
Liaoning	1337	, ווט	5140	5(1)	4,500 u/u
* Bridgestone (Tianjin) Tire Co. Ltd. / Tianjin	1997	1U,11U	1,505u	1,2 (r)	20,122 u/d
* Bridgestone (Wuxi) Tire Co. Ltd. / Wuxi, Jiangsu	2004	31,131	1,413u	1,2 (r)	19,869 u/d
Meivan	2007	AQ.3A0	500	4,7 (r.b)	34,000 u/d
Chaoyang Long March Tyre Co. Ltd.			1		1 .,000 u/u
Liaoning	1988	1R,TJ	1,600	3 (r)	2.8 mil u/y
CHEMCHINA (China National Chemical Corp.)					r
* Aeolus Tyre Co. Ltd. / Jiaozuo, Henan	1965	5X,15X	6,543u	2,3,4,6,7 (r,b)	6.0 mil u/y
* ChemChina Guilin Tire Co. Ltd. / Guilin, Guangxi	2006	5L,15L		2,3,4,6 (b)	1.2 mil u/y
Guilin, Guangxi	1902	/10, 1/10		3,4,0 (ľ)	11.0 MII U/Y
* Chonche Auto Double Happiness Tyre Corp. Ltd./ Taiyuan City, Shanxi	2004	4V,14V,6E,16E		3 (r,b)	14.0 mil u/y
* Pirelli Tyre Co. Ltd. (China) / Jiaozuo, Henan	2012	VJ,1VJ	600	1,2 (r)	3.7 mil u/y
* Pirelli Tyre Co. Ltd. (China) / Yanzhou, Shandong	2003	51,150	2,350	1,5 (r)	8.5 mil u/y
* Jining Shenzhou Tire Co. Ltd. / Yanzhou, Shan-	2005	034		1 (r)	2.8 mil u/y
* Qingdao Yellow Sea Rubber Co. Ltd. / Qingdao,	1986	EV,MR	500	1,2,3,7 (r,b)	3.6 mil u/y
Shandong					
* Cheng Shin Rubber (Xiamen) Ind. Ltd. / Xiamen.	1991	7E17F	4.464u	3 (b)	73.200 u/d
Fujian			.,		
* Cheng Shin Tire & Rubber (China) Co. Ltd. / Kunshan, Jiangsu	1997	2U,12U	2,670u	1,2,3 (r)	59,130 u/d
* Cheng Shin Tire & Rubber (Chong Qing) Co. Ltd. /	2009	UL,1UL	849	1,2 (r)	28,000 u/d
* Cheng Shin Tire & Rubber (Zhangzhou) Ind. Co.	2012	TE,1TE	1,920	2,4,5 (r,b)	38,500 u/d
Ltd. / Zhangzhou, Fujian	0001	4 4 4 4 4	1 070	0 (h)	10 104/d
Fujian	2001	14,114	1,273	3 (D)	12,134 u/d
* Xiamen Chengshin Enterprise Co. Ltd. / Xiamen, Fuijan	2006	79,179	1,480	3 (r)	1.58 mil u/y
Continental Tires (Hefei) Co. Ltd. (Conti	I inental A	I G.)	1	1	<u> </u>
Hefei	2009	LF,1LF	2,000u	1,2,9 (r)	9.0 mil u/y
COOPER TIRE & RUBBER (Goodyear Tire &	Rubbe	r Co.)			
* Cooper Kunshan Tire Co. Ltd. / Kunshan, Jiangsu	2005	RM,1RM	1,144	1,2 (r)	12.0 mil u/y
* Cooper Qingdao Tire Co. / Qingdao, Shandong	1998	CR,1CR	862	2,3 (r)	1,000 u/d
Dongying Monday Rubber Technology	2010			5	4.5 mil u.kr
Double Coin Holdings Ltd. (Huvai Group)	2010		l	°	ч.9 mii u/у
Chongqing, Chongqing	2008	TP,1TP	1,000	3 (r)	2.8 mil u/y
Rugao, Jiangsu	2005	76,176	2,000	3,4,6,7 (r)	2.6 mil u/y
Shanghai, Shanghai	1989	2J,12J	2,000u	3,6,7 (r)	88,000 u/y
Urumqi City, Xinjiang	1994	DB,1DB	3,000	2,3 (b)	2.7 mil u/y
Wuwei, Anhui	2012	HX,1HX	706u	1,2 (r)	2.0 mil u/y
Giti Tire (China) Investment Co. Ltd. (Giti Tire	Pte. Ltd.)			
Hefei, Anhui	1993	90,190	4,400	1,2,3,9 (r)	22.1 mil u/y
wudanjiang, Heliongjiang	1988	3A, 13A 5W/15W/	1,800 3,200	1,2,3,9 (r)	0.75 MII U/y
Goodyear Pulandian Tire Co. Ltd. (Good	Vear Tin	e & Rubber Co)	3,200	1,2,3 (۱)	10.3 IIII U/Y
Pulandian	2011	7L,17L	1,900	1,2.3 (r)	1.2 mil u/v
Guangzhou Bolex Tyre Ltd.	1	· ·			1
Guangzhou	1992	6X,16X		1,2 (r)	12.0 mil u/y
Guangzhou Pearl River Rubber Tyre Lt	d.				
Huadu	1970	0K,10K		1,2,3,4,6 (b)	80,000 u/y
Guilin Lanyu Aircraft Tire Developmen	t Co.		1	1	1
Guilin	1	5S,255	1	8 (b)	5.0 mil u/v

Company/ plant location	Year opened	DUT code(s)	Employees (u=unionized)	lire types*	Estimated capacity*
Guizhou Tyre Co. Ltd.					
Guiyang		0D,10D	4,000	3,4,6 (r,b)	19.4 mil u/y
HANKOOK TIRE & TECHNOLOGY	0010		1 000	100(-)	5 70 mil
* Hankook Tire China Co. Ltd. / Chongqing	1996	1G 216	1,380u 2 620u	1,2,3 (ľ) 1,2 (ľ)	5.73 mil u/y
* Jiangsu Hankook Tire Co. Ltd. / Huaian. Jiangsu	1996	BJ.1BJ	2,020u	1,2 (r)	8.19 mil u/v
Haoyou Tire Co. Ltd. (a.k.a Goodfriend Tyre	e Co. Lto	1.)		.,_,_ (.)	
Jiaozuo	2010	UR,1UR		1,2 (r)	5.0 mil u/y
Jiaozuo	2005	UR,1UR	800	3 (r,b)	1.2 mil u/y
Hefei Wanli Tire Co. Ltd. (Guangzhou Fengli	Tire Co	.)			
Hefei	2016	Dukkan kadaataa (700	3 (r)	2.0 mil u/y
Hwa Fong Rubber (Suzhou) Co. Ltd. (Hv	va Fong	Rubber Industry C	0. Ltd.)	57(rb)	
Innova Rubber Co. Ltd.	1990	000,1000	1,230	J,7 (I,D)	
Pinghu City	2001	0F,10F		7	
Jiangsu Feichi Co. Ltd.					
Yancheng	1965	5U,15U	2,000	5,6,7 (b)	5.5 mil u/y
Jiangsu General Science Technology (Co. Lt	d.			
Wuxi City, Jiangsu	1995	95,195	2,500	3 (r)	10.0 mil t/y
Jinyu Tyre Co. Ltd.	1005	15 115	5.540	26 (~)	2.4 mil4
Jungying City, Shandong	1992	10,110	J,J4UU	3,0 (F)	3.4 ITIII U/Y
Liaoning	1996	FS,2F5	460	5 (r,b)	6.0 mil u/v
KENDA RUBBER INDUSTRIAL CO. LTD		-, -		· (/=/	
* Kenda Rubber (China) Co. Ltd. / Kunshan, Jiangsu	1994	7Y,17Y	2,116	1,2,4,5,7 (r,b)	9.18 mil u/y
* Kenda Rubber (Tianjin) Co. Ltd. / Ting Hai, Tianjin	2007	MM,1MM	536	1,2,5,7 (b)	4.1 mil u/y
* Kenda Rubber Co. Ltd. (Shenzhen) / Shenzhen, Baoan	2003	2Q,219	217	5,7 (b)	11.5 mil u/y
KUMHO TIRE CO. INC. (Qinodao Doublestar	(Group)		<u> </u>	<u> </u>	
* Kumho Tire (Changchun) Co. / Changchun, Jilin	2007	D0,1D0,FE,1FE	669u	1,2 (r)	4.1 mil u/y
* Kumho Tires (Tianjin) Co. / Tianjin, Tianjin	2007	C0,1C1	1,071u	1,2,5,7 (b)	10.2 mil u/y
* Nanjing Kumho Tire Co. / Nanjing	2017	4T,14T,7U,17U,	1,803	1,2 (r)	13.0 mil u/y
Liaoning Tyres Group Co. Ltd		κν, ικν		<u> </u>	
Chaovang	1952	JA.1JA	7.000	1.2.3 (r)	2.4 mil u/v
Linglong Group Co. Ltd.		. ,	.,	.,_,_ (.)	
Zhaoyuan City, Shandong	2001	0U,10U,KF,1KF	4,061	1,2,3,4,9 (r,b)	66.0 mil u/y
Changchun		05V		3 (r)	14.0 mil u/y
Dezhou, Shandong		R1, 1R1		1,2,3 (r)	12.0 mil u/y
Jingmen, Hubei	2019	03W		1,2,3,6 (r)	14.4 mil u/y
Longkou Xinglong Tire Co. Ltd.					
Longkou City, Yantai		FG,1FG	550	2,3,4 (b)	500,000 u/y
MICHELIN * Mighalia Shan Yang Tira Ca. Ltd. / Shanyang	2012	7\/17\/	2 004	102(r)	100 000 +64
Liaoning	2013	7 V, 17 V	2,994	1,2,3 (1)	102,000 l/y
* Shanghai Michelin Tire Co. Ltd. / Tsen Tai, Shanghai	1993	Y5,1Y4	1,993u	1,2 (r)	18,000 u/d
Solideal Rubber Products (Qingdao) Co. Ltd. /				7	2,950 t/m
Pingdu, Qingdao					
MST Tyre Ltd.	2002	36 126	150	47(b)	250 000
Nankang Rubber Tire Corn. (Nankang Inter	national)	1500	+,/ (D)	200,000 U/Y
Jiangsu	2003	, 10,110	800	1,2 (r)	13,000 u/d
Ningxia Shenzhou Tire Co. Ltd.				· \/	,
Shizuishan	2015	01F	2,000	3 (r)	7.6 mil u/y
Prinx Chengshan (Shandong) Tire Co.	Ltd. (C	hengshan Group)			
Rongcheng City	1976	4Y,14Y	2,860u	1,2,3,4,6 (r,b)	15.0 mil u/y
Qingdao Aonuo Tyre Co. Ltd.					
Pingdu City	1999	52	2,000	3,4,6	23 mil u/y
QINGDAO DOUBLESTAR GROUP	1005	41/ 441/	0.500	100(1)	0.5
* Doublestar Dongteng Tyre Co. Ltd. / ShiYan, Hubei	1995	1K,11K 8R 19P	2,500u	1,2,3 (r,b)	0.5 MII U/Y
Qinguao Doublestar Tire Industrial Co. Ltd. / Qingdao, Shandong	1992	0H, IOH	7,001	2,3,4 (ľ,D)	o.o mii u/y
Qingdao Hengda Tire Co. Ltd.					
Pingu	1994	13,113		2,3,4,6 (r,b)	600,000 u/y
Qingdao Honour Tyre Co. Ltd.					
Qingdao, Shandong	1990			2,3,4,5,6 (r,b)	
Qingdao Nexen Tire Corp. (Nexen Tire Corp).)		4.055		0.70
Uingdao, Shandong	2007	JJ,1JJ	1,086u	1,2 (r)	8.78 mil u/y
wingdao winang Tyre Co. Ltd.		56 156		467(rb)	
Qingdao Qizhou Rubber Co. Ltd	<u> </u>	JU, IJU		+,u,/ (I,D)	
Pinadu	1995	88.188	1.000	3.4.6 (r h)	3.7 mil 11/v
a		-,	,	., ,- (.,~)	· · · · · · · · · · · · · · · · · · ·

Tire types' Year opened DOT code(s) Employees (u=unionized) Company/ plant location canacity Qingdao Sentury Tire Co. Ltd. (Sentaida Group) Jimo, Qingdao, Shandong 2007 P2,1P2 864 1,2,9 (r,b) 15.0 mil u/y Qingdao Shengda Tire Manufacture Co. Ltd. Qingdao 12,112 Qingdao Tengjiang Tyre Co. Ltd. 700 1994 38,138 1,2,3,4 Tengjiang 1.0 mil u/y Sailun Group 1,2 (r) Dongying, Shandong KE.1KE 27.0 mil u/v MW,1MW 2008 216u 3.0 mil u/v Shenyang, Liaoning 3 (r) Weifang, Shandong 2004 YK, 1YK 1,2,3,5 (r) 7.2 mil u/y 1,2,3,5,7, 9,(r,b) Qingdao, Shandong 53, 153 13.5 mil u/y Shandong Bayi Tyre Manufacture Co. Ltd. (Sportrak Tire Group Ltd.) 2005 Zaozhuang, Shandong C2.JL 3 (r) 3.6 mil u/y Shandong Changfeng Tyre Co. Ltd. (Shandong Hengfeng Tyre Co. Ltd.) Dongying City, Shandong 1995 83,183 6.000 1,2 (r) 24 mil u/y Shandong Deruibo Tire Co. Ltd. 2010 TT,1TT 24 mil u/y Guangrao, Shandong 1,2,3,6 (r) Shandong Duratti Rubber Corp. Co. Ltd. Qinzhou, Shandong 2011 CT,1CT 1,2,3 16.5 mil u/y Shandong Fengyuan Tire Mfg. Co. Ltd. 2.20 mil u/y Zaozhuang, Shandong LB,1LB 1,2 (r) Shandong Guofeng Rubber Plastics Co. Ltd. 1,2,3,4,6 (r) 12.0 mil u/y Guangrao 2011 PP.1PP Shandong Hawk International Rubber Industry Co. Ltd. 1975 11,111 2,300 3,4,6,7 (r) 2.2 mil u/v Liazhou Shandong Hengfeng Rubber & Plastics Co. Ltd. 83,183 6,000 1,2 (r) 24.0 mil u/y Dongving City, Shandong 1995 Shandong Hengyu Technology Group Dongying City, Shandong UB,1UB 1,2,3 (r) 13.2 mil u/y Shandong Huasheng Rubber Co. Ltd. Dongying City, Shandong 1995 AC,1AC 4,500 1,2,3 (r) 18.5 mil u/y Shandong Huatai Rubber Co. Ltd. Laiwu City, Shandong 1984 1Y,11Y 2,3,4,7 (b) 200,000 u/y Shandong Longyue Rubber Co. Ltd. Caoxian, Heze City 7B,17B 5,000 1 (r) 20 mil u/y Shandong LuHe Group General Co. 2,3,4,5 (r,b) Zhucheng City, Shandong 1986 AY,1AY 8.6 mil u/y Shandong Mirage Tyres Co. Ltd. (Shandong Hengfeng Rubber & Plastic Co. Ltd.) 8.0 mil u/y 02W 1,3 (r) Guangrao/Dongying City, Shandong Shandong Sangong Rubber Co. Ltd. KH,1KH 1,500 2,3,5 (r,b) Zhucheng City, Shandong Shandong Shengtai Tyre Co. Ltd. 1,000 Dongying, Shandong 50, 150 3 (r,b) 3.0 mil u/y Shandong Shuangwang Rubber Co. Ltd. Dawang, Guangrao 2,3,4 (r) 12 mil u/y Shandong Taishan Tire Co. Ltd. Feicheng City, Shandong 1970 1M,11M 1,200 3,4,6 (b) 2.2 mil u/y Shandong Wanda Boto Tyre Co. Ltd. Dongying City, Shandong 80,180 3 (r) 600.000 u/v Shandong Yinbao Tire Group Shouguang City, Shandong 1996 RP1RP 3,6 Shandong Yong Tai Chemical Industry Group 25 125 2 000 T1,3 (r) 5 6 mil u/v Dongying, Shandong ShandongYongfeng Tire Co. Ltd. (Shandong Hengfeng Rubber & Plastic Co. Ltd.) 1995 AD, 1AD 4,500 3 (r) 24.0 mil u/y Linvi City, Shandong Shandong Yongsheng Rubber Group Co. Ltd. Dongying City, Shandong 1986 JE,JK 1,2,3 (r) 11.5 mil u/y Shandong Zhongce Tyre Co. Ltd. Shouguang City, Shandong 1996 75,175 2,3,4,6 (r,b) 1.0 mil u/y Shandong Zhongyi Rubber Co. Ltd. 2004 XU,1XU 1,2 (r) Dawang, Guangrao 20.0 mil u/y Shanxi Suanxi Tyre Co. Ltd. Taiyuan, Shanxi 1970 4V,5B 1,900 ,2,3,4 (r,b) 1.0 mil u/y Sichuan Haida Tyre Group Co. Ltd. Haida, Sichuan 33, 133 1,2,3,4 (r) 7.8 mil u/y SUMITOMO RUBBER INDUSTRIES LTD. Sumitomo Rubber (Changshu) Co. Ltd./ Chang-0T,10T 2,061u 1,2,3 (r) 7,200 t/m 2004 shu City, Jiangsu Sumitomo Rubber (Hunan) Co. Ltd. / Changsha, 2011 VH,1VH 1,062u 1,2 (r) 2,950 t/m Hunan

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Company/ plant location	Year opened	DOT code(s)	Employees (u=unionized)	Tire types*	Estimated capacity*
echking Tyres Ltd.					
Heze City, Shandong	2012	7B,17B	520	1,2 (r)	2.0 mil u/y
'ianjin Wanda Tires Group Ltd.					1
Tianjin, Tianjin	1988	5Y,15Y		1,5,7 (r,b)	
Xingtai, Hebei	2015	038		1,2 (r)	
OEE Haida Tyre Co. Ltd.					
Jianyang City, Sichuan		33,133		1,2,3 (r)	8.2 mil u/y
OYO TIRE CORP.				r.	1
Toyo Tire (Zhucheng) Co. Ltd. / Zhucheng,	2005	90,189	452	3 (r)	2.0 mil u/y
Tovo Tires Zhangijagang Co. Ltd. / Zhangijang.	2012	PW.1PW	333	1.2 (r)	2.0 mil u/v
iangsu		,		.,= (.)	
riangle Group Co. Ltd.					1
Weihai, Shandong	2016		150u	1,2,6 (r,b)	122,000 u/y
Weihai, Shandong	2003	2V, 12V	2,333u	1,2,6 (r,b)	12.3 mil u/y
Weihai, Shandong	2009	0H,10H	1,836u	1,2,3 (r)	6.0 mil u/y
Weihai Nanhai, Shandong	2015		448	1,2,7 (r)	4.0 mil u/y
UTRIC / Tianjin United Tire & Rubbe	er Inter	national Co.	Ltd. (Zhongce	Rubber Group)
Tianjin	1987	3B,13B	1,042u	4,6,7 (r,b)	35,000 t/y
VANLI TIRE CO.LTD. (Vanlead Group)	4000		0.001		
Guangznou South China Rubber Tire Co. Ltd. / 'anyu, Guangzhou	1989	WP,1WP	2,001	1,2,3 (r)	12.0 mil u/y
Wanli Tire Co. Ltd. / Conghua, Guangzhou	2006	WP,1WP	1,800	1,3	16.0 mil u/v
Veifang Shunfuchang Rubber & Plas	tic Co.	Ltd.		•	
Shouguang, Shandong	1994	TW,2TW	1,800	1,2,3,4 (r,b)	1.2 mil u/y
Weifang Yuelong Rubber Co. Ltd.	1	Ì			1
Shouguang, Shandong	1986	7P,17P	3,520	2,3 (r)	3.0 mil u/y
Vendeng Sanfeng Tyre Co. Ltd.	· ·		·		·
Wendeng	1974	04,104	1,000	1,2,3,4 (b)	1.0 mil u/y
Vuxi Weida Rubber Co. Ltd.					
Xishan City, Wuxi	1984		1,500	2,5 (b)	6.8 mil u/y
liamen Rubber Factory					
Xiamen, Fujian	1970	1J,11J	3,096	2,3,4,6 (b)	800,000 u/y
(ingyuan Tire Group Co. Ltd.					
Dongying City, Shandong	1994	66,166		3,6 (r)	1.6 mil u/y
(uzhou Xugong Tyres Co. Ltd.					
Xuzhou, Jiangsu		9H,19H	3,300	2,3,4,6,7 (r,b)	3.2 mil u/y
anchang Petroleum Group Rubber C	o. Ltd.				· · · · · ·
Zianyang		UF,1UF		3,6 (r,b)	2.0 mil u/y
ancheng Tuopu Tyre Co. Ltd.		1	-1	r	1
Yangcheng City	1997		400	4,6,7 (b)	
OKOHAMA RUBBER CO. LTD.	0000	0.404	4 050	Lo	50 11 /
Hangznou Yokonama Tire Co. Ltd. / Hangznou ity, Zhejiang	2003	00,100	1,250	1 (r)	5.0 mii u/y
Suzhou Yokohama Tire Co. Ltd. / Suzhou City,	2008	JM,1JM	469	1,3 (r)	6.4 mil u/y
iangsu					
Trelleborg Wheel Systems (Xingtai) Co. Ltd. / ingtai	2009	3F,WN	180	4,7 (r,b)	150,000 u/y
Zhongce Rubber Group Co. Ltd.		ļ		<u>. </u>	1
Hangzhou, Zhejiang	1958	JU, 1JU,KN,	20,200u	1,2,3,4,5,	50.0 mil u/y
		1KN 01N		6,7,9 (r,b)	
					0
Anji, Zhejiang	2016		8,000	5 (r)	35.0 mil u/y
Anji, Zhejiang Jiande, Zhejiang	2016	8D,18D	8,000	5 (r) 3 (r)	35.0 mil u/y 10.5 mil u/y
Anji, Zhejiang Jiande, Zhejiang Fuyang, Zhejiang	2016 	8D,18D 01N	8,000 	5 (r) 3 (r)	35.0 mil u/y 10.5 mil u/y
Anji, Zhejiang Jiande, Zhejiang Fuyang, Zhejiang Codo Tire Co. Ltd.	2016	8D,18D 01N	8,000 	5 (r) 3 (r)	35.0 mil u/y 10.5 mil u/y
Anji, Zhejiang Jiande, Zhejiang Fuyang, Zhejiang Codo Tire Co. Ltd. Shouguang, Shandong	2016 2014	8D,18D 01N NV, 1NV	8,000 	5 (r) 3 (r) 3(r)	35.0 mil u/y 10.5 mil u/y
Anji, Zhejiang Jiande, Zhejiang Fuyang, Zhejiang Codo Tire Co. Ltd. Shouguang, Shandong Cao County, Shandong	2016 2014	8D,18D 01N NV, 1NV 6A,16A 7D 17D	8,000	5 (r) 3 (r) 3(r) 1,2(r) 2(r)	35.0 mil u/y 10.5 mil u/y 65,000 u/
Anji, Zhejiang Jiande, Zhejiang Fuyang, Zhejiang Codo Tire Co. Ltd. Shouguang, Shandong Cao County, Shandong Shouguang, Shandong	2016 2014 1986	8D,18D 01N NV, 1NV 6A,16A 7P, 17P	8,000	5 (r) 3 (r) 1,2(r) 3(r)	35.0 mil u/y 10.5 mil u/y 65,000 u/
Anji, Zhejiang Jiande, Zhejiang Fuyang, Zhejiang Codo Tire Co. Ltd. Shouguang, Shandong Cao County, Shandong Shouguang, Shandong	2016 2014 1986	NV, 1NV 6A,16A 7P, 17P	8,000	5 (r) 3 (r) 3(r) 1,2(r) 3(r)	35.0 mil u/y 10.5 mil u/y 65,000 u/
Anji, Zhejiang Jiande, Zhejiang Fuyang, Zhejiang Codo Tire Co. Ltd. Shouguang, Shandong Cao County, Shandong Shouguang, Shandong Agarwal Rubber Ltd. (a.k.a. ARL Tyres Ltd.)	2016 2014 1986 INI	NV, 1NV 6A, 16A 7P, 17P DIA	8,000	5 (r) 3 (r) 3(r) 1,2(r) 3(r) 3(r)	35.0 mil u/y 10.5 mil u/y 65,000 u/
Anji, Zhejiang Jiande, Zhejiang Fuyang, Zhejiang Codo Tire Co. Ltd. Shouguang, Shandong Cao County, Shandong Shouguang, Shandong Shouguang, Shandong Agarwal Rubber Ltd. (a.k.a. ARL Tyres Ltd.) Patancheru Hyderabad	2016 2014 1986 INI) 1983	8D,18D 01N NV, 1NV 6A,16A 7P, 17P DIA	8,000 2,000	5 (r) 3 (r) 1,2(r) 3(r) 2,4,5 (b) 2,4,5 (b)	35.0 mil u/y 10.5 mil u/y 65,000 u/ 845 t/d 120 t/d
Anji, Zhejiang Jiande, Zhejiang Fuyang, Zhejiang Codo Tire Co. Ltd. Shouguang, Shandong Cao County, Shandong Shouguang, Shandong Agarwal Rubber Ltd. (a.k.a. ARL Tyres Ltd.) Patancheru Hyderabad	2016 2014 1986 INI) 1983	NV, 1NV 6A, 16A 7P, 17P DIA 03J	8,000 2,000 2,000	5 (r) 3 (r) 3(r) 1,2(r) 3(r) 2,4,5 (b) 2,4,6 (b)	35.0 mil u/y 10.5 mil u/y 65,000 u/ 845 t/d 120 t/d
Anji, Zhejiang Jiande, Zhejiang Fuyang, Zhejiang Codo Tire Co. Ltd. Shouguang, Shandong Cao County, Shandong Shouguang, Shandong Shouguang, Shandong Agarwal Rubber Ltd. (a.k.a. ARL Tyres Ltd.) Patancheru Hyderabad Apollo Tyres Ltd. Chennai, Tamil Madu	2016 2014 1986 INI 1983 2010	NV, 1NV 6A, 16A 7P, 17P DIA 03J	8,000 2,000 1,625	5 (r) 3 (r) 3(r) 1,2(r) 3(r) 2,4,5 (b) 2,4,6 (b) 1,2,3 (r)	35.0 mil u/y 10.5 mil u/y 65,000 u/ 845 t/d 120 t/d
Anji, Zhejiang Jiande, Zhejiang Fuyang, Zhejiang Codo Tire Co. Ltd. Shouguang, Shandong Cao County, Shandong Shouguang, Shandong Shouguang, Shandong Agarwal Rubber Ltd. (a.k.a. ARL Tyres Ltd. Patancheru Hyderabad Apollo Tyres Ltd. Chennai, Tamil Nadu	2016 2014 2014 1986 INI 1983 1983 2010	8D,18D 01N NV, 1NV 6A,16A 7P, 17P DIA 03J	8,000 2,000 1,625 700::	5 (r) 3 (r) 3(r) 1,2(r) 3(r) 2,4,5 (b) 2,4,6 (b) 1,2,3 (r) 2,3,4,6 7 (b)	35.0 mil u/y 10.5 mil u/y 65,000 u/ 845 t/d 120 t/d 870 t/d
Anji, Zhejiang Jiande, Zhejiang Fuyang, Zhejiang Codo Tire Co. Ltd. Shouguang, Shandong Cao County, Shandong Shouguang, Shandong Shouguang, Shandong Agarwal Rubber Ltd. (a.k.a. ARL Tyres Ltd.) Patancheru Hyderabad Apollo Tyres Ltd. Chennai, Tamil Nadu Kalamassery, Kerala	2016 2014 1986 INI) 1983 1983 2010 1995	8D,18D 01N NV, 1NV 6A,16A 7P, 17P DIA 03J P0,1P0 9E 19E	8,000 2,000 1,625 709u 2,407::	5 (r) 3 (r) 3 (r) 1,2(r) 3 (r) 2,4,5 (b) 2,4,6 (b) 1,2,3 (r) 2,3,4,6,7 (b) 1,2,2,4,5 (b)	35.0 mil u/y 10.5 mil u/y 65,000 u/ 65,000 u/ 120 t/d 870 t/d 120 t/d 56/4 t/d
Anji, Zhejiang Jiande, Zhejiang Fuyang, Zhejiang Codo Tire Co. Ltd. Shouguang, Shandong Cao County, Shandong Shouguang, Shandong Shouguang, Shandong Agarwal Rubber Ltd. (a.k.a. ARL Tyres Ltd.) Patancheru Hyderabad Apollo Tyres Ltd. Chennai, Tamil Nadu Kalamassery, Kerala Limbda, Baroda	2016 2014 2014 1986 I1986 I1983 2010 1995 1991	NN, INV 8D,18D 01N NV, 1NV 6A,16A 7P, 17P DIA 03J P0,1P0 8F,18F	8,000 2,000 1,625 709u 2,427u	5 (r) 3 (r) 3 (r) 1,2(r) 3(r) 2,4,5 (b) 2,4,6 (b) 1,2,3 (r) 2,3,4,6,7 (b) 1,2,3,4,5, 6,7 (r,b)	35.0 mil u/y 10.5 mil u/y 65,000 u/ 845 t/d 120 t/d 870 t/d 120 t/d 564 t/d
Anji, Zhejiang Jiande, Zhejiang Fuyang, Zhejiang Codo Tire Co. Ltd. Shouguang, Shandong Cao County, Shandong Shouguang, Shandong Shouguang, Shandong Agarwal Rubber Ltd. (a.k.a. ARL Tyres Ltd. Patancheru Hyderabad Apollo Tyres Ltd. Chennai, Tamil Nadu Kalamassery, Kerala Limbda, Baroda Perambra, Kerala	2016 2014 2014 1986 INI 1983 1983 2010 1995 1991 1977	NN, INV 8D,18D 01N NV, 1NV 6A,16A 7P, 17P DIA 03J P0,1P0 8F,18F A6,1A6	8,000 2,000 1,625 709u 2,427u 16,44u	5 (r) 3 (r) 3 (r) 1,2(r) 3(r) 2,4,5 (b) 2,4,6 (b) 1,2,3 (r) 2,3,4,6,7 (b) 2,3,4,6 (b)	35.0 mil u/y 10.5 mil u/y 65,000 u/ 65,000 u/ 845 t/d 120 t/d 120 t/d 564 t/d 324 t/d
Anji, Zhejiang Jiande, Zhejiang Fuyang, Zhejiang Codo Tire Co. Ltd. Shouguang, Shandong Cao County, Shandong Shouguang, Shandong Xgarwal Rubber Ltd. (a.k.a. ARL Tyres Ltd.) Patancheru Hyderabad Xpollo Tyres Ltd. Chennai, Tamil Nadu Kalamassery, Kerala Limbda, Baroda Perambra, Kerala Chinnapanduru, Andrah Pradesh	2016 2014 2014 1986 1986 1983 1983 2010 1995 1991 1997 2020	8D,18D 01N NV, 1NV 6A,16A 7P, 17P DIA 03J P0,1P0 8F,18F A6,1A6 042	8,000 2,000 1,625 709u 2,427u 16,44u 437	5 (r) 3 (r) 3 (r) 1,2(r) 3(r) 2,4,5 (b) 2,4,6 (b) 1,2,3,4,5, 6,7 (r,b) 2,3,4,6 (b) 1,2,3,4,5, 6,7 (r,b) 2,3,4,6 (b) 1,3 (r)	35.0 mil u/y 10.5 mil u/y 65,000 u/ 65,000 u/ 120 t/d 120 t/d 120 t/d 564 t/d 324 t/d 345 t/d
Anji, Zhejiang Jiande, Zhejiang Fuyang, Zhejiang Codo Tire Co. Ltd. Shouguang, Shandong Cao County, Shandong Shouguang, Shandong Shouguang, Shandong Agarwal Rubber Ltd. (a.k.a. ARL Tyres Ltd.) Patancheru Hyderabad Apollo Tyres Ltd. Chennai, Tamil Nadu Kalamassery, Kerala Limbda, Baroda Perambra, Kerala Chinnapanduru, Andrah Pradesh Asian Tyre Factory Ltd.	2016 2014 2014 1986 I1986 I1983 2010 1995 1991 1991 1977 2020	NN, NNV 8D, 18D 01N NV, 1NV 6A, 16A 7P, 17P DIA 03J P0,1P0 8F,18F A6,1A6 042	8,000 2,000 1,625 709u 2,427u 16,44u 437	5 (r) 3 (r) 3 (r) 1,2(r) 3 (r) 2,4,5 (b) 2,4,6 (b) 1,2,3 (r) 2,3,4,6,7 (b) 1,2,3,4,5, 6,7 (r,b) 2,3,4,6 (b) 1,3 (r)	35.0 mil u/y 10.5 mil u/y 65,000 u/ 65,000 u/ 120 t/d 120 t/d 120 t/d 120 t/d 564 t/d 324 t/d 324 t/d

t/d-Metric tons per day; t/m-Metric tons per month Names in parentheses following company names indicate the parent company.

Company/ plant location	Year opened	DOT code(s)	Employees (u=unionized)	Tire types*	Estimated capacity*
Balkrishna Tyres Ltd. (BKT)					
Aurangabad, Maharashtra	1988	3V,13V	470u	4,6,7 (r,b)	30,000 t/y
Bhiwadi, Rajasthan	2003	5P,15P	500	4,6,7 (r,b)	55,000 t/y
Bhuj, Gujarat	2013	FY,1FY	1,200	4,6,7 (r,b)	159,000 t/y
Chopanki, Rajasthan	2005	9N,1N	480u	4,6,7 (r,b)	54,000 t/y
Birla Tyres Ltd. (Kesoram Industries Ltd.)	-		1	1 ,	
Balasore	1991	3H,13H	1,400u	1,2,3,4,5,6 (r,b)	143 t/d
Bridgestone India Pvt. Ltd. (Bridgestone (Corp.)	1	1	<u> </u>	1
Kheda, Madhya Pradesh	1998	4W,14W	1,181	1 (r)	16,972 u/d
Pune, Maharashtra	2013	W9,1W9	1,288	1,2,3 (r)	10,700 u/d
Ceat Ltd.	-	1	1	1	1
Ambernath, Maharashtra	2017		290	4,6 (r)	55 t/d
Kanchipuram, Tamil Nadu	2020		1,000	1,5 (r)	31,000 u/d
Halol. Guiarat	2011	PT.1PT	1.391	1.2.3.5 (r)	305 t/d
Mumbai, Maharashtra	1958	WU,1WU	921u	3,4,6,7 (b)	245 t/d
Nagpur, Maharashtra	2016	03A	877	5 (b)	114 t/d
Nasik Maharashtra	1974	8H 18H	2 4000	12347 (rb)	240 t/d
Continental India Pyt. Ltd. (Continental A	G	longron	2,1000	1,2,0,1,1 (1,0)	21040
Modipuram	1974	1616	1 700	1234 (rb)	1.0 mil u/v
Emerald Besilient Tyre Manufacturers	Dvt I	td	1,700	1,2,0,4 (1,0)	1.0 min u/y
Lineralu nesinent Tyre manufacturers		1	· ·	1	
Gummidpoondi				7 (b)	
GOODYEAR TIRE & RUBBER CO.		1		1	
* Goodyear India Ltd. / Ballabgarh, New Delhi	1961	NK,1NK	800u	3,4 (r,b)	4,000 u/d
* South Asia Tyres Ltd. / Aurangabad, Maharashtra	1994	1W,11W	700	1,2,6 (r)	11,000 u/d
Govind Rubber Ltd.		1			
Jugiana	1980			5 (b)	3.6 mil u/y
Innovative Tyres & Tubes Ltd.					
Halol, Gujarat	2002	RK		2,3,4,5 (b)	12,000 t/y
JK Tyre & Industries Ltd.					
Banmore, Madhya Pradesh	1991	9F,19F	1,043u	1,2,4,9 (r,b)	14,107 u/d
Chennai, Madras	2013	WR,1WR	1,970u	1,3 (r)	16,268 u/d
Kankroli, Rajasthan	1976	X5,1X5	574u	2,3,4,6 (b)	6,621 u/d
Mysore, Karnataka	1980	F8,1F8	1,175u	2,3,4,6 (r,b)	7,811 u/d
Haridwar (Cavendish Industries)	2016	VT, 1YT	2,809	2,3,4,5 (r,b)	29,525 u/d
KRM Tyres (Kohinoor Rubber Industries)		1		<u> </u>	1
Baddi, Himachi Pradesh	2000	JT,1JT		1,2,3,4,5,	7,736 u/d
				6,7 (b)	
Mahansaria Tyres Pvt. Ltd.		1	· ·	1	r
Panoli, Gujarat	2020	06D		4,5,7 (r)	24,000 t/y
Maxxis Rubber India Pvt. Ltd. (Cheng Sh	in Rubbe	er Industry Co. Lto	d.)	1	r
Ahmedabad, Gujarat	2017	01J	469	5 (r,b)	32,420 u/d
Michelin India Tamil Nadu Tyres Pvt. I	_td. (M	ichelin)		1	r
Chennai, Madras	2012	V8,1V8	947	3,6 (r)	28,000 t/y
MRF Ltd.		1	·	1	ř.
Ankenpally, Telangana	2010	9L,19L	1,950u	1,5,9 (r,b)	29,000 u/d
Arkonam, Tamil Nadu	1973	T9,1T9	3,950u	1,2,4,5,7, 8 9 (r b)	54,000 u/d
Chennai, Madras	1962	WT.1WT	1.0000	2,3,4,6 7 (h)	4.500 u/d
Dahei, Gujarat	2020	049	600	4.5 6 (h)	16 000 u/d
Goa, Goa	1973	P9.1P9	1.4000	2,3 4 (h)	6.500 u/d
Kottayam, Kerala	1971	0L,10L	1,300u	2,3.4 (r.b)	3,000 u/d
Perambalur, Tamil Nadu	2011	PE,1PE	1,100u	2,4,5 (b)	44,000 u/d
Perambalur, Tamil Nadu	1	· -	1	· ·· ·· ··	7.0500 (1
,	2011	YA,1YA	1,000u	3 (r)	7,3500 u/d
Pondicherry, Pondicherry	2011 1997	YA,1YA 7R,17R	1,000u 2,850u	3 (r) 1,2.3.9 (r)	7,3500 u/d 16.0000 u/d
Pondicherry, Pondicherry MRL Tyres Ltd.	2011 1997	YA,1YA 7R,17R	1,000u 2,850u	3 (r) 1,2,3,9 (r)	7,3500 u/d 16,0000 u/d
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh	2011 1997 1978	YA,1YA 7R,17R 26,126	1,000u 2,850u	3 (r) 1,2,3,9 (r) 1,2,3,4 5 (r b)	7,3500 u/d 16,0000 u/d
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh Poddar Tyres Ltd.	2011 1997 1978	YA,1YA 7R,17R 26,126	1,000u 2,850u 	3 (r) 1,2,3,9 (r) 1,2,3,4,5 (r,b)	7,3500 u/d 16,0000 u/d
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh Poddar Tyres Ltd. Ludhiana, Puniab	2011 1997 1978 1978	YA,1YA 7R,17R 26,126	1,000u 2,850u 1,700	3 (r) 1,2,3,9 (r) 1,2,3,4,5 (r,b) 5 (b)	7,3500 u/d 16,0000 u/d 12.0 mil u/v
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh Poddar Tyres Ltd. Ludhiana, Punjab Ralson India Ltd.	2011 1997 1978 1978 1964	YA,1YA 7R,17R 26,126	1,000u 2,850u 1,700	3 (r) 1,2,3,9 (r) 1,2,3,4,5 (r,b) 5 (b)	7,3500 u/d 16,0000 u/d 12.0 mil u/y
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh Poddar Tyres Ltd. Ludhiana, Punjab Ralson India Ltd. Ludhiana, Punjab	2011 1997 1978 1978 1964	YA,1YA 7R,17R 26,126	1,000u 2,850u 1,700	3 (r) 1,2,3,9 (r) 1,2,3,4,5 (r,b) 5 (b) 2 4 5 (b)	7,3500 u/d 16,0000 u/d 12.0 mil u/y
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh Poddar Tyres Ltd. Ludhiana, Punjab Ralson India Ltd. Ludhiana, Punjab Balson Tyres L td. (Balson India Ltd.)	2011 1997 1978 1978 1964 1964	YA,1YA 7R,17R 26,126	1,000u 2,850u 1,700 1,400	3 (r) 1,2,3,9 (r) 1,2,3,4,5 (r,b) 5 (b) 2,4,5 (b)	7,3500 u/d 16,0000 u/d 12.0 mil u/y 600,000 u/y
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh Poddar Tyres Ltd. Ludhiana, Punjab Ralson India Ltd. Ludhiana, Punjab Ralson Tyres Ltd. (Ralson India Ltd.) Indore, Madya Pradesh	2011 1997 1978 1978 1964 1964 	YA,1YA 7R,17R 26,126	1,000u 2,850u 1,700 1,400	3 (r) 1,2,3,9 (r) 1,2,3,4,5 (r,b) 5 (b) 2,4,5 (b) 3 (r)	7,3500 u/d 16,0000 u/d 12.0 mil u/y 600,000 u/y
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh Poddar Tyres Ltd. Ludhiana, Punjab Ralson India Ltd. Ludhiana, Punjab Ralson Tyres Ltd. (Ralson India Ltd.) Indore, Madya Pradesh Speedways Group of Compositor	2011 1997 1978 1978 1964 2022	YA,1YA 7R,17R 26,126 066	1,000u 2,850u 1,700 1,400 1,295	3 (r) 1,2,3,9 (r) 1,2,3,4,5 (r,b) 5 (b) 2,4,5 (b) 3 (r)	7,3500 u/d 16,0000 u/d 12.0 mil u/y 600,000 u/y 1.0 mil u/y
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh Poddar Tyres Ltd. Ludhiana, Punjab Ralson India Ltd. Ludhiana, Punjab Ralson Tyres Ltd. (Ralson India Ltd.) Indore, Madya Pradesh Speedways Group of Companies Islandhar Buniab	2011 1997 1978 1978 1964 2022 2022	YA,1YA 7R,17R 26,126 066	1,000u 2,850u 1,700 1,400 1,295	3 (r) 1,2,3,9 (r) 1,2,3,4,5 (r,b) 5 (b) 2,4,5 (b) 3 (r)	7,3500 u/d 16,0000 u/d 12.0 mil u/y 600,000 u/y 1.0 mil u/y
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh Poddar Tyres Ltd. Ludhiana, Punjab Ralson India Ltd. Ludhiana, Punjab Ralson Tyres Ltd. (Ralson India Ltd.) Indore, Madya Pradesh Speedways Group of Companies Jalandhar, Punjab Stabilize Tyres Ltd.	2011 1997 1978 1978 1964 2022 2022 1967	YA,1YA 7R,17R 26,126 066 LH,1LH	1,000u 2,850u 1,700 1,400 1,295	3 (r) 1,2,3,9 (r) 1,2,3,4,5 (r,b) 5 (b) 2,4,5 (b) 3 (r) 2,4,5,6,7 (r,b)	7,3500 u/d 16,0000 u/d 12.0 mil u/y 600,000 u/y 1.0 mil u/y
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh Poddar Tyres Ltd. Ludhiana, Punjab Ralson India Ltd. Ludhiana, Punjab Ralson Tyres Ltd. (Ralson India Ltd.) Indore, Madya Pradesh Speedways Group of Companies Jalandhar, Punjab Stallion Tyres Ltd.	2011 1997 1978 1978 1964 2022 2022 1967 1967	YA,1YA 7R,17R 26,126 066 LH,1LH	1,000u 2,850u 1,700 1,400 1,295	3 (r) 1,2,3,9 (r) 1,2,3,4,5 (r,b) 5 (b) 2,4,5 (b) 3 (r) 2,4,5,6,7 (r,b)	7,3500 u/d 16,0000 u/d 12.0 mil u/y 600,000 u/y 1.0 mil u/y
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh Poddar Tyres Ltd. Ludhiana, Punjab Ralson India Ltd. Ludhiana, Punjab Ralson Tyres Ltd. (Ralson India Ltd.) Indore, Madya Pradesh Speedways Group of Companies Jalandhar, Punjab Stallion Tyres Ltd. Hyderabad	2011 1997 1978 1978 1964 2022 2022 1967 1976	YA,1YA 7R,17R 26,126 066 LH,1LH	1,000u 2,850u 1,700 1,400 1,295 	3 (r) 1,2,3,9 (r) 1,2,3,4,5 (r,b) 5 (b) 2,4,5 (b) 3 (r) 2,4,5,6,7 (r,b) 5 (b)	7,3500 u/d 16,0000 u/d 16,0000 u/d 12.0 mil u/y 600,000 u/y 1.0 mil u/y 480,000 u/y
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh Poddar Tyres Ltd. Ludhiana, Punjab Ralson India Ltd. Ludhiana, Punjab Ralson Tyres Ltd. (Ralson India Ltd.) Indore, Madya Pradesh Speedways Group of Companies Jalandhar, Punjab Stallion Tyres Ltd. Hyderabad Suntec Tyres Ltd.	2011 1997 1978 1978 1964 1964 2022 2022 1967 1976	YA,1YA 7R,17R 26,126 066 LH,1LH	1,000u 2,850u 1,700 1,400 1,295 	3 (r) 1,2,3,9 (r) 1,2,3,4,5 (r,b) 5 (b) 2,4,5 (b) 3 (r) 2,4,5,6,7 (r,b) 5 (b)	7,3500 u/d 16,0000 u/d 12.0 mil u/y 600,000 u/y 1.0 mil u/y 480,000 u/y
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh Poddar Tyres Ltd. Ludhiana, Punjab Ralson India Ltd. Ludhiana, Punjab Ralson Tyres Ltd. (Ralson India Ltd.) Indore, Madya Pradesh Speedways Group of Companies Jalandhar, Punjab Stallion Tyres Ltd. Hyderabad Suntec Tyres Ltd. Trichur	2011 1997 1978 1978 1964 2022 2022 1967 1976	YA,1YA 7R,17R 26,126 066 LH,1LH 91,191	1,000u 2,850u 1,700 1,400 1,295 	3 (r) 1,2,3,9 (r) 1,2,3,4,5 (r,b) 5 (b) 2,4,5 (b) 3 (r) 2,4,5,6,7 (r,b) 5 (b) 5 (b)	7,3500 u/d 16,0000 u/d 16,0000 u/d 12.0 mil u/y 600,000 u/y 1.0 mil u/y 1.0 mil u/y 480,000 u/y
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh Poddar Tyres Ltd. Ludhiana, Punjab Ralson India Ltd. Ludhiana, Punjab Ralson Tyres Ltd. (Ralson India Ltd.) Indore, Madya Pradesh Speedways Group of Companies Jalandhar, Punjab Stallion Tyres Ltd. Hyderabad Suntec Tyres Ltd. Trichur Sun-Tyre & Wheel Systems (TVS Group)	2011 1997 1978 1978 1964 2022 2022 1967 1976	YA,1YA 7R,17R 26,126 066 LH,1LH 91,191	1,000u 2,850u 1,700 1,400 1,295 	3 (r) 1,2,3,9 (r) 1,2,3,4,5 (r,b) 5 (b) 2,4,5 (b) 3 (r) 2,4,5,6,7 (r,b) 5 (b) 5 (b)	7,3500 u/d 16,0000 u/d 16,0000 u/d 12.0 mil u/y 600,000 u/y 1.0 mil u/y 480,000 u/y
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh Poddar Tyres Ltd. Poddar Tyres Ltd. Ludhiana, Punjab Ralson India Ltd. Ludhiana, Punjab Ralson Tyres Ltd. (Ralson India Ltd.) Indore, Madya Pradesh Speedways Group of Companies Jalandhar, Punjab Stallion Tyres Ltd. Hyderabad Suntec Tyres Ltd. Trichur Sun-Tyre & Wheel Systems (TVS Group) Maraimalai Nagar	2011 1997 1978 1978 1964 2022 2022 1967 1976 1976	YA,1YA 7R,17R 26,126 26,126 066 LH,1LH 91,191	1,000u 2,850u 1,700 1,400 1,295 	3 (r) 1,2,3,9 (r) 1,2,3,4,5 (r,b) 5 (b) 2,4,5 (b) 3 (r) 2,4,5,6,7 (r,b) 5 (b) 5 (b) 7	7,3500 u/d 16,0000 u/d 16,0000 u/d 12.0 mil u/y 600,000 u/y 1.0 mil u/y 480,000 u/y 320,000 u/y
Pondicherry, Pondicherry MRL Tyres Ltd. Nodia, Uttar Pradesh Poddar Tyres Ltd. Poddar Tyres Ltd. Ludhiana, Punjab Ralson India Ltd. Ludhiana, Punjab Ralson Tyres Ltd. (Ralson India Ltd.) Indore, Madya Pradesh Speedways Group of Companies Jalandhar, Punjab Stallion Tyres Ltd. Hyderabad Suntec Tyres Ltd. Trichur Sun-Tyre & Wheel Systems (TVS Group) Maraimalai Nagar Pudukottai	2011 1997 1978 1978 1964 2022 2022 1967 1976 1976 202 2022	YA,1YA 7R,17R 26,126 26,126 066 UH,1LH 91,191 	1,000u 2,850u 1,700 1,700 1,295 7,00 700	3 (r) 1,2,3,9 (r) 1,2,3,4,5 (r,b) 5 (b) 2,4,5 (b) 3 (r) 2,4,5,6,7 (r,b) 5 (b) 5 (b) 7 7 7	7,3500 u/d 16,0000 u/d 16,0000 u/d 12.0 mil u/y 600,000 u/y 1.0 mil u/y 1.0 mil u/y 480,000 u/y 320,000 u/y 320,000 u/y

Superior Network with the sector of the sect	Company/ plant location	opened	code(s)	(u=unionized)	types*	capacity*
Name and the state19829,1409,1409,44,6,709,44,6,709,24,6,79,24,009,20,009,24,009,20,009,24,009,20,009,24,009,20,009,24,009,20,009,25,009,25,009,25,009,25,009,20,009,20,009,20,009,20,009,20,009,20,009,20,009,20,009,20,009,20,009,20,009,20,009,20,009,20,009,20,009,20,009,20,009,20,009,20,	Superking Manufacturers (Tyre) Pvt. L	td.		·		
Tom Prose Port Ltd.Vision 100010.100010.00010.000Kaidayan Undahand1980IL.IR.7870.84.56.70012.2 mlRadrapan Undahand1980IL.IR.7870.84.56.70012.2 mlRadrapan Undahand1980IL.IR.7870.10.000Vactor Rubber India Port Ltd.Vision10.00010.00010.000Vactor Rubber India Port Ltd.20034.710.11.880.4.61.0010.000Vactor Rubber India Port Ltd.20044.710.10.000 <t< td=""><td>New Delhi</td><td>1982</td><td>40,140</td><td></td><td>2,4,5,6,7 (b)</td><td></td></t<>	New Delhi	1982	40,140		2,4,5,6,7 (b)	
Kalagin2008201821.24 (i)24.60.07TVS Srichakra Ltd.18081818178.024.56.7 (i)12.2 mlRudiaul, tami Radon180818.1 (i, i, i	Tolins Tyres Pvt. Ltd.		•		•	
TYS Srichakro Ltd.interactioninteractionMadual, Tamilhada11737.02.4.56.7 (n)12.2 mlMandalad, Gajarat22070010VPS Dubber India Pv1. Ltd.220701.1834.7.0 (n)10.00 tVPS OKOMAM RUBBER CO. LTD000<	Kalady	2008	XV,1XV		1,2,4 (r)	24,000 t/y
Madarai, Tarril Nadar[933[R,1R)[78702.4.6.6.7 (b)1.22 mlRodragur, Uttakhand–5Rodragur, Uttakhand[2017[32-5 (b.9)10,000 iVOKOHAAA RUBBER CO, LTD.1.1884.7 (b.0)10,000 iVOKOHAAA RUBBER CO, LTD.1.1884.7 (b.0)10,000 iTarra Port Lid.4.87 (b.0)10,000 iTarra Nadar20145.1183.000 i4.87 (b.0)6.900 iYokohama India Port, Ltd.4.7 (b.0)6.900 iYokohama India Port, Ltd.1.000 i3.000 i3.000 iYokohama India Port, Ltd.1.9076.1036.1031.010 i3.000 i3.010 i3.010 iRarawang, Wasal Java1.9976.103 i6.103 i1.021 i1.5 mill5.00 i4.01 mlP. Evoluzione Tyros (Prelii & C. S.p.A.1.907 i6.103 i1.021 i1.5 mill5.0 i4.0 mlP. Evoluzione Tyros (Prelii & C. S.p.A.1.901 i1.2.4.8.7 (b.0) i1.901 i1.2.4.8.7 (b.0) i9.0 iii 1.000 iP. Evoluzione Tyros (Prelii & C. S.p.A.1.901 i1.2.8.4.8 (b.0) i1.901 i1.2.9 iii 1.5 millP. Evoluzione Tyros (Prelii & C. S.p.A.1.901 i1.2.8.4.8 (b.0) iii 1.000 iii	TVS Srichakra Ltd.		1			
Rudrapur. Ultakhand - - - 5 - Vee Rubber India Pvt. Ltd. 085 - 5 (xb) 0.000, VOKOHAMA RUBBER CO. LTD. - - 5 (xb) 0.000, YOKOHAMA RUBBER CO. LTD. - - 4.6 (1) 6910 Danig, Gajard 2014 1.183 4.7 (xb) 9700 Thruneholl, Tami Hadu 2020 - - 4.6 (1) 6910 Vaskinapatama, Andrua Pradesh 2022 - - 4.6 (1) 61000 Ourgoon, Haryana 2014 13.13 3500 1 (2) 15.8 min F. Ensingerdentam Tyre Indenesia (Bridgestore TEX ENDER COLLISON - 5 (xb) 4.0 min F. E. Lanogerdentam Tyre Industry - 5 (xb) 12.0 (xb) 1.0 min F. E. Gajah Tunggal TBK (Gill Tire) - 12.0 (xb, 15.0 (xb) 1.0 min Tangerang, Javan Bant [1016] 17.0 (xb, 15.0 (xb) 1.0 (xb) 1.0 (xb, 15.0 (xb) F. E. Gajah Tunggal TBK (Gill Tire) - 12.2 (xb, 10.0 (xb)	Madurai, Tamil Nadu	1983	LR,1LR	787u	2,4,5,6,7 (b)	12.2 mil u/y
Note Rubber India Pvt. Ltd. Note Number India Pvt. Pvt. Pvt. Pvt. Pvt. Pvt. Pvt. Pvt.	Rudrapur. Uttakhand		,		5	
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Number of the set of	Abmedabad Gujarat	2017	03E		5 (rh)	10 000 µ/d
ATO Tine PAUL LLA. Dahle, Gapari. 2014 CA. CA. 1.188 4.7 (cb.) 9.700. Trunabadi, Tami Nadu 200 4.4 (r) 1.764 4.6 7 (cb.) 9.000. Trunabadi, Tami Nadu 200 4.7 (r) 4.7 (cb.) 9.000. 6.000. Vischahapatinan, Andrina Pradesin 202 4.6 (r) 6.000. 6.000. Vischahapatinan, Andrina Pradesin 2021 4.6 (r) 6.000. 5.000. Brikas, Mergi Java 1.070 4.5 (r) 4.5 (r) 5.010.		2011	002		0 (1,5)	10,000 0/0
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Daming dapata201920191.70001.	Dahai Gujarat	2014	CA 1CA	1 169	47 (rb)	01 700 +67
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visa naga hand in a field of the set of		2009	14,114	1,704	4,0,7 (I,D)	100,000 l/y
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Gurgaon201413.133801 (n)1.33 mlBridgestone Tire Indonesia (Bridgestone VIP)Rickal, West Java197084.748.01.673.01.24.67.704.31" ufRarawang, West Java1989198980.706.701.2 (n)5.810.8RT. Elangedoran Tyre Industry198780.706.701.2 (n)5.810.8RT. Gajah Tungal TBK (Bill Tite)2015N1.201.2 (n)1.5 ml9.70R. Gajah Tungal TBK (Bill Tite)1.23.4 6.8 (n)1.23.4 6.8 (n)1.50.01.23.4 6.8 (n)1.50.0RT. Gayah Tungal TBK (Bill Tite)1.23.7 (n)1.23.4 6.1 (n)1.50.01.23.4 6.1 (n)1.50.0RT. Gayah Tungal TBK (Bill Tite)20138C.18C1.5801.2.3 (n)9.7 mlRT. Hankock KTre Indonesia (Hinkok Tire Co. U1.2.3 (n)9.7 ml1.2.0 (n)9.7 mlRT. Hankock Tae Indonesia (Hinkok Tire Co. U1.2.7 (n)2.50 ml7.7 mlRt. Hankock KTae Indonesia (Kenda Dire)1.2.7 (n)2.50 ml7.7 mlRt. Hankock KTae Indonesia (Kenda Dire)1.2.7 (n)1.2.7 (n)2.50 mlRT. Hankock Mana20170.7 ml1.4035 (n)1.9 mlRt. Kanta Buber Indonesia (Kenda Dire)1.2.7 (n)1.2.7 (n)1.2.7 (n)Rt. Muttistanda Arah Sarana TbK (Michell')1.4.7 (n)1.2.6 (n)1.0.0 (n)Rt. Muttistanda Arah Sarana TbK (Michell')1.2.8 (n)1.0.0 (n)1.0.0 (n)Rt. Muttistanda Arah Sarana TbK (Michell')1.2.8 (n)1.0.0 (n)	* Yokohama India Pvt. Ltd.					
IN DIVENUE VIEW VIEW VIEW VIEW VIEW VIEW VIEW VIE	Gurgaon, Haryana	2014	13,113	350	1 (r)	1.53 mil u/y
Relignation trip indonesia (indigenesity view investigation of the indigenesity indicated indigenesity indicated indicate		NDO	NESIA			
Bekas, West Java19708A.8416.781.24.87.011.437.011.437.01Karawang, West Java19879.1096701.2 (0)5.5 (a)PR. Elangoerdana Tyre Industry6701.2 (0)5.5 (a)Subang, Sest Java2015N.1019.0001.2 (0)5.0 (a)PR. Gajah Tunggal TBK (Gift Tire)1.8 (a)1.0 (a)1.2 (a)5.0 (a)PR. Gajah Tunggal TBK (Gift Tire)1.8 (a)1.0 (a)1.2 (a)5.0 (a)PR. Gajah Tunggal TBK (Gift Tire)1.8 (a)1.0 (a)1.2 (a)5.0 (a)P.T. Goodyaar Indonesia (Goodyaar Tire Satter Satte	P.T. Bridgestone Tire Indonesia (Bridges	tone Cor	rp.)			
Karayang, West Java1999221,7131,2(n)5,712RT. Evoluziona Tyres (Pireli & C. S.p.A)Subang, Sast Java2015N.170-50.1RT. Evoluziona Tyres (Pireli & C. S.p.A)Tangerang, Java Barat1951N.17010001,23,45,675RT. Goodysar Indonesia (Goodycari Tei 11935N.17001,23,45,675RT. Goodysar Indonesia (Goodycari Tei 11935N.170001,23,45,675RT. Hankcok Tire Indonesia (Hankook Tre-121011RT. Hung Andonesia (Hankook Tre11111111RT. Hung Andonesia (Hankook Tre111	Bekasi, West Java	1976	A8,1A8	1,678u	1,2,4,6,7 (b)	4,317 u/d
P.I. Eliangperdana Tyre IndustryBogor, West Java19670.910067.01.2 (n1.5 millP.T. Evoluzione Tyrees (Prelli & C. S. p.A.)2015X0.1X0-5 (b)4.0 millP.T. Gajah Tunggal TBK (Gilt Tire)2015X0.1X01.40001.2.3.6.72.5 0 millP.T. Gajah Tunggal TBK (Gilt Tire)1.0001.0.2.3.6.61.0.0001.2.3.6.61.5 0 millP.T. Godyaar Indonesia (Goodyaar Tire & Ruber-1.2.3.6.61.2.3.6.61.5 0.01.5 0.01.5 0.0P.T. Hankock Tire Indonesia (Hankook Tire Co. Lu-1.2.3.6.61.5 0.01	Karawang, West Java	1999	2R,12R	1,713u	1,2 (r)	25,126 u/d
Bogor, West Java199798,10987012 (n)1.5 mil uRT. Evoluzione Tyrees (Pirelli & C. S.p.A)2015X0,100~5 (n)4.0 milRT. Gajah Tunggal TBK (Gitt Tire)1911Y9,1Y914,000u12.34,56,672.5.0 milRT. Gajah Tunggal TBK (Gitt Tire)1913NL.1NL900u1.2.34,56 (c)1.5.00 vRT. Gaodayear Indonesia (Goodyear Tire & Rubber Co.UU1.2.34,56 (c)1.5.00 vRT. Handkock The Indonesia (Hankock Tire Co. Ltd)U1.5.00 v1.2.34,56 (c)9.7 milRT. Hung A Indonesia (Hankock Tire Co. Ltd)U1.2.7 v5 (n)9.7 milRT. Hung A Indonesia (Hankock Tire Co. Ltd)U1.2.7 v2.250 u/RT. Industri Karet Deli1058~1.2.7 v2.250 u/RT. Kanda Rubber Indonesia (Kenda Rubber Industry Co. Ltd.)S (n)1.3 mil uRT. Maxzis Instrantional Indonesia (Cent Sinko Notor Co. Ltd.)S (n)1.3 mil uRT. Maxzis Instrantional Indonesia (Kenda Rubber Industry Co. Ltd.)S (n)1.3 mil uRT. Sum Rubber Indonesia (Kenda Rubber Industry Co. Ltd.)S (n)1.0 mil uRT. Sum Rubber Indonesia (Kenda Rubber Industry Co. Ltd.)1.4705 (n)1.0 mil uRT. Sum Rubber Indonesia (Kenda Rubber Industry Co. Ltd.)1.4705 (n)1.0 mil uRtdaga19477,1713.8091.2.3 (n)1.0 f00 (1.0 mil uRtdaga Kuest Java1957Rt,1841.010 (1.2.3 (n)1.0 f00 (1.0 mil uRtdaga Kuest Java1957Rt	P.T. Elangperdana Tyre Industry					
P.T. Evoluzione Tyres (Pirelli & C. S.p.A.) - 5 (b) 4.0 milu Subang, Sest Java 2015 XD 1XD - 5 (b) 4.0 milu P.T. Gajah Tunggal TBK (Giti Tire) 1151 19.1 yp 14.0000 12.34.56.7 25.0 mil P.T. Goodyear Indonesia (Goodyear Tire Rubber Co.) Bogor, West Java 1935 NL.1NL 9000 12.34.56.7 25.0 mil P.T. Hankook Tire Indonesia (Hankook Tire Co. Ltd.) - 12.0 (1) 9.7 milu P.T. Hung A Indonesia (Hankook Tire Co. Ltd.) - 12.7 (2) 2.250 u/ P.T. Industri Karet Dell - 12.7 (2) 2.250 u/ P.T. Kenda Rubber Indonesia (Kenda Rubber Industria Co. Ltd.) - 12.7 (2) 2.250 u/ P.T. Kanda Rubar Indonesia (Chem Shin Rubber Industry Co. Ltd.) - 13.7 (1) - 15 (1) 13.9 (1) 13.9 (1) 13.9 (1) P.T. Mutsitzarda Arah Sarana TbK (Milchi) - - 12.5 (1) 1500 t/ P.T. Mutsitzarda Arah Sarana TbK 1994 5K.15K 3.000 12.5 (1) 5.000 t/ Ridgestone Corp.	Bogor, West Java	1997	09,109	670	1,2 (r)	1.5 mil u/y
Subang, Sest Java 2015 XD, 1XD 5 (b) 4.0 mI lu P.T. Gajah Tunggal TEK (Gitti Tire) 1 1911 1911 1910 12.34,56.7 25.0 mil Bagor, West Java 1935 NL 1NL 900u 1.2.3,4.6 (rb) 11.500 L P.T. Hankook Tire Indonesia (Hankook Tire 0. Ltd.) 97.7 milu Bekasi, West Java 1991 71.271 - 5 (b) 9.7 milu P.T. Hankook Tire Indonesia (Hung A Co. Ltd.) 97.7 milu 7.272 2.250 mil P.T. Industri Karet Deli 1.2.7 2.250 mil 9.7 milu Strang, Banten 2017 027 28 1.043 5 (b) 1.9 milu P.T. Maxxis International Indonesia (Cheng Shin Rubber Industry Co. Ltd.) 8 9.6 (s) 1.2.7 (s) 2.370 (s) Bekasi, West Java 1994 5K.15K 3.000 1.2.5 (r) 1.60 mil P.T. Maxxis International Indonesia (Kend Kubber Industry Co. Ltd.) 8 1.2.3 (r) 1.1.00 (t)	P.T. Evoluzione Tyres (Pirelli & C. S.p.A.)					
P.T. Gajah Tunggal TEK (Siti Tire) ISS VIII VIIII VIIIII VIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Subang, Sest Java	2015	XD,1XD		5 (b)	4.0 mil u/y
Tangerang, Jawa Barat 1951 Y9, Y9 14,000u 1,2,3,4,5,6,7 25.0 mil PRT. Goodyear Indonesia (Goodyear Tire & Rubber Co.) Bogor, West Java 1935 NL,1NL 900u 1,2,3,4,5,(7) 25.0 mil PRT. Hankook Tire Indonesia (Hung A Co. Ltd.) Utpo Cikkarang, Bekasi 2013 BC,1BC 1,588u 1,2 (r) 9,7 mil PRT. Hankook Tire Indonesia (Hung A Co. Ltd.) Utpo Cikkarang, Bekasi 1991 7,1271 ~ 5 (b) 2.250 ut PRT. Industri Karet Deli Utpo Cikkarang, Bekasi 2017 171 1,470 5 (r) 2.1370 (t) PRT. Kenda Rubber Indonesia (Kenda Rubber Industrial Co. Ltd.) Serang, Banten 2017 017 1,470 5 (r) 2.1370 (t) PRT. Maxxis International Indonesia (Chung Shin Rubber Industry Co. Ltd.) Bekasi, West Java 1994 5K,15K 3,000 1,2.5 (r) 16.0 mil PRT. Sumi Rubber Indonesia (Sumitomo Rubber Industris Ltd.) Cikampek 1997 71.77 3,389 1,2.5 (r) 15.0 mil Pridgestone Corp. Amagl, Fukuoka 1975 K4.1FK 817u <td< td=""><td>P.T. Gajah Tunggal TBK (Giti Tire)</td><td></td><td>1</td><td></td><td></td><td></td></td<>	P.T. Gajah Tunggal TBK (Giti Tire)		1			
Image: Part and an end of the second seco	Tangerang, Jawa Barat	1951	Y9,1Y9	14,000u	1,2,3,4,5,6,7	25.0 mil u/y
P.T. Goodyear Indonesia (Goodyear Tire & Rubber Co.) Hankook Tison 1,1800 1,23,46 (tb) 1,1800 Bogor, West Java 1933 NL NIL 9000 1,23,46 (tb) 1,500 EJ, Hankook Tire Indonesia (Hung A Co. Ltd.) Usua 1,5880 1,2(1) - 5 (b) . Brit, Hung A Indonesia (Hung A Co. Ltd.) Term Term 1,2(7) . . . Brit, Marta Dali Usua 1,2(7) 2,700 . . . Brit, Madara 1991 71,717 2,700 1,707 2,700 . . Brit, Mathistrada Arah Sarana TbK (Michelm) Rubber Indonesia (Sumitoro Ruber Indonesia (Rube Ruber Indonesia (Sumitoro Ruber Indonesia (Sumitoro					(r,b)	
Bogor, West Java 1935 NL-INL 900u 1.2.3.4.6 (r,b.) 1.1.500. P.T. Hankkook Tire Indonesia (Hung A Co. Lut) ISBN 2000 I.580u 1.2.9.7 More INSSN 2000 P.T. Hung A Indonesia (Hung A Co. Lut) IssN 2000 I.580u 1.2.9.7 More INSSN 2000 P.T. Hung A Indonesia (Hung A Co. Lut) IssN 2000 I.2.9.0 More INSSN 2000 I.2.9.0 P.T. Hung A Indonesia (Kend Rubber Industry Co. Lut) IssN 2000 I.9.01 I.9.01 I.9.01 P.T. Kanda Rubber Indonesia (Kend Rubber Industry Co. Lut) Strang. Banten 2017 I.043 5 (b) I.9.01 P.T. Sumi Rubber Indonesia (Sumitom Ruber Industry Co. Lut) Bekasi, West Java 2017 I.7.17 3.89 I.2.5 (r) I.6.0 mil P.T. Sumi Rubber Indonesia (Sumitom Ruber Industry Co. Lut) I.2.6 (r) I.5.00 /r I.0.01 P.T. Sumi Rubber Indonesia (Sumitom Ruber Industry Co. Lut) I.2.6 (r) I.0.01 I.5.01 I.5.01 /r Magi, Fukuoka 1907 T.17.0 3.89 I.2.3 (r) I.0.01 Magi, Fukuoka 1968 E.1.EL I.5.	P.T. Goodyear Indonesia (Goodyear Tire & F	Rubber C	0.)		1	r
P.T. Hankook Tire Indonesia (Hankook Tire Co. Ltd.) Lippo Cikarang, Bekasi 2013 BC,1B C 1,589u 1,2 (r) 9,7 mil u P.T. Hung A Indonesia (Hung A Co. Ltd.) Bekasi, West Java 1991 71,271 - 5 (b) Bekasi, West Java 1991 1,271 - 5 (b) 2050 P.T. Industri Karet Deli 1,043 5 (b) 1,911 Bekasi, West Java 2017 017 1,470 5 (r) 2,1370 u P.T. Maxxis International Indonesia (Cheng Shin Rubber Industry Co. Ltd.) 1,25 (r) 16.0 mil P.T. Sumi Rubber Indonesia (Sumitor Euroturistris Ltd) 3,389 1,2,5 (r) 16.0 mil P.T. Sumi Rubber Indonesia (Sumitor Euroturistris Ltd) 1,2,6 (r) 5,000 (r) 1,040 (r) Ikione, Shing 1997 7,177 3,389 1,2,3 (r) 1,500 (r) Hikone, Shing 1976 HA (r) 1,041 (r) 1,2,6 (r) 5,000 (r) Hodir, Yanguchi 1976 HA (r) 1,041 (r) 1,2,6 (r) 5,000 (r)	Bogor, West Java	1935	NL,1NL	900u	1,2,3,4,6 (r,b)	11,500 u/d
Lippo Cikarang, Bekasi 2013 BC, IBC 1,583u 1,2 (r) 9,7 ml u P.T. Hung A Indonesia (Hung A Co. Ltd.) J J J J S (n) S Bekasi, West Java 1958 J - S (n) S	P.T. Hankook Tire Indonesia (Hankook Tir	e Co. Lto	d.)			r
P.T. Hung A Indonesia (Hung A Co. Ltd.)Bekasi, West Java1947.276.000P.T. Industri Karet DeliWedang19581.2.72.250 u/P.T. Kenda Rubber Indonesia (Kenda Rubber Industrial Co. Ltd.)5.001.9 miluSerang, Banten201702R1.0435.001.9 miluP.T. Mutsits International Indonesia (Kenda Rubber Industry Co. Ltd.)Bekasi, West Java20170171.4705.001.5.00P.T. Muttistzada Arah Sarana TbK (Michell3.0001.2.5 (r)16.0 milP.T. Muttistzada Arah Sarana TbK19945K.15K3.0001.2.5 (r)16.0 milP.T. Muttistzada Arah Sarana TbK1997T.17T3.891.2.3.5 (r)5.000 trBridgestone Corp.1.2.9 (r)1.0.5001.0.500Hikone, Shiga1973EK.1EK817u2.3 (r)1.1.6500Hofu, Yamaguchi1976H.1H41.041u1.2.6 (r)5.300 trKitakyah, Fukuoka1970I.11D793u6 (r)7.07 diKurume, Fukuoka1970I.11D793u6 (r)1.70 diKurume, Fukuoka1970I.11D793u6 (r)2.0 toriShinoneski, Yamaguchi1970I.11D793u6 (r)2.0 toriTothigi, Tochigi1961C.1CL70u1.2.3 (r)1.040 UTokusa, Saga1962K.1EK82u1.2.0 (r)1.0 di <td>Lippo Cikarang, Bekasi</td> <td>2013</td> <td>BC,1BC</td> <td>1,588u</td> <td>1,2 (r)</td> <td>9.7 mil u/y</td>	Lippo Cikarang, Bekasi	2013	BC,1BC	1,588u	1,2 (r)	9.7 mil u/y
Bekasi, West Java 1991 71,271 5 (b) P.T. Industri Karet Deli 1,2,7 2,20 u/ P.T. Kenda Rubber Indonesia (Kenda Rubber Industrial Co. Ltd.) 1,2,80 u/ 2,20 u/ P.T. Kenda Rubber Indonesia (Kenda Rubber Industrial Co. Ltd.) 5 (b) 1,3 mil u Bekasi, West Java 2017 017 1,470 5 (n) 2,1370 u P.T. Maxxis International Indonesia (Sumitom Rubber Industrial Contextrial Con	P.T. Hung A Indonesia (Hung A Co. Ltd.)		r			r
P.T. Industri Karet Deli Part Medag 1958 1,2,7 2,250 u/ P.T. Kanda Rubber Indonesia (Kenda Rubber Industrial Co. Ltd.) Ston Januar 5 (b) 1.9 mliu P.T. Maxxis International Indonesia (Cheng Shin Rubber Industry Co. Ltd.) Bekasi, West Java 2017 07 1,470 5 (r) 2,1370 u P.T. Maxxis International Indonesia (Sumitomo Rubber Industry Co. Ltd.) Bekasi, West Java 1994 5K,15K 3,000 1,2.5 (r) 16.0 mil P.T. Maxxis International Indonesia (Sumitomo Rubber Industry Co. Ltd.) Ston V Ston V Ston V P.T. Maxxis Industry Co. Ltd. USA 3,030 1,2.5 (r) 5,000 tr P.T. Maxxis Industry Co. Ltd. USA Ston V Ston V Ston V P.T. Maxxis Industry Co. Ltd. USA Ston V Ston V Ston V P.T. Maxxis Industry Co. Ltd. USA Ston V Ston V Ston V Cikangek 1973 K.1EK 8170 2,3 (r) 11,050 u Media Ston Corp. Ston V Ston V Ston V Ston V Ston V <t< td=""><td>Bekasi, West Java</td><td>1991</td><td>71,271</td><td></td><td>5 (b)</td><td></td></t<>	Bekasi, West Java	1991	71,271		5 (b)	
Medang19881,2,72,250 u/P.T. Kenda Rubber Indonesia (Kenda Rubber/Industrial Co. Ltd.)Serang, Bantern201702R1,0435 (b)1.9 mit uP.T. Maxxis International Indonesia (Derng Shire1,4705 (f)21,370P.T. Multistrada Arah Sarana TbK (MichelinBekasi, West Java19945K,15K3,0001,2.5 (r)16.0 mitP.T. Sumi Rubber Indonesia (Sumitomo Rubber Industrial Co. Ltd.)1,2.3 (r)1,0.0 mitP.T. Sumi Rubber Indonesia (Sumitomo Ruber Industrial Co. Ltd.)1,2.3 (r)1,0.60 uP.T. Sumi Rubber Indonesia (Sumitomo Ruber Industrial Co. Ltd.)1,2.3 (r)1,0.60 uP.T. Sumi Rubber Indonesia (Sumitomo Ruber Industrial Co. Ltd.)1,2.3 (r)1,0.60 uP.T. Sumi Rubber Indonesia (Sumitomo Ruber Industrial Co. Ltd.)1,2.3 (r)1,0.60 uP.T. Sumi Rubber Indonesia (Sumitomo Ruber Industrial Co. Ltd.)1,2.3 (r)1,0.60 uP.T. Sumi Rubber Industrial Co. Ltd.)1,0.7 u1,2.3 (r)1,0.60 uP.T. Sumi Rubber Industrial Co. Ltd.)19701,1.61 u1,2.8 (r)1,0.0 uMagi, Fukuoka1973K.1EK815u d6 (r)170 rd dKurue, Fukuoka197010.11 D793u d6 (r)10.0 uNasu, Tochigi197010,11 D793u d8 (r,b)200 tmTokyo197010,11 D793u d8 (r,b)201 tmNaga Rubuka19701,12 T1,2.4,7 (r,b)70 tmNaga Coligi (Yanga)19701,12 T	P.T. Industri Karet Deli					
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Bekasi, West Java 2017 017 1,470 5 (r) 21,370 u P.T. Muttistrada Arah Sarana TbK (Mich-lin)	P.T. Maxxis International Indonesia (Ch	ieng Shi	n Rubber Industry	Co. Ltd.)		
P.T. Multistrada Arah Sarana TbK (Michellin) Bekasi, West Java 1944 5K,15K 3,000 1,2,5 (r) 16.0 mil P.T. Sumi Rubber Indonesia (Sumitomo Rubber I-utustrise Ltd.) Cikampek 1997 7T,17T 3,389 1,2,3,5 (r,b) 5,100 Vr JENE JENE JENE JENE Bridgestone Corp. Amagi, Fukuoka 1973 EK,1EK 8170 2,3 (r) 11,050 (r) Hikone, Shiga 1968 EL,1EL 1,594u 1,2 (r) 55,900 (r) Hofu, Yamaguchi 1976 H,1H4 1,041u 1,2,8 (r) 10,400 (r) Kitakyushu, Fukuoka 2009 515u 6 (r) 170 t/d Kitakyushu, Fukuoka 1931 EH,1EH 1,074u 1,2,8 (r) 10,400 (r) Nasu, Tochigi 1970 10,11D 793u 6 (r) 18,100 (r) Tockig, Tochigi 1970 E,1EJ 784u 1,2 (r)	Bekasi, West Java	2017	017	1,470	5 (r)	21,370 u/d
Bekasi, West Java 1994 5K, 15K 3,000 1,2,5 (r) 16.0 mil RT. Sumi Rubber Indonesia (Sumitomo Rubber Instructure Structure S	P.T. Multistrada Arah Sarana TbK (Mich	elin)				
P.T. Sumi Rubber Indonesia (Sumitomo Rubber Industries Ltd.) Cikampek 1997 71,171 3,389 1,2,3,5 (r,b) 5,100 t/r JAL=XI Bridgestone Corp. Amagi, Fukuoka 1973 EK,1EK 817u 2,3 (r) 11,050 u Hikone, Shiga 1968 EL,1EL 1,594u 1,2 (r) 55,000 u Hofu, Yamaguchi 1976 H4,1H4 1,041u 1,26 (r,b) 5,300 u/r Kitakyushu, Fukuoka 2009 515u 6 (r) 170 t/d Kurume, Fukuoka 1931 EH,1EH 1,074u 1,28,9 (r,b) 10,400 u Nasu, Tochigi 1962 EN,1EN 800u 1,2,4,5,7 (r,b) 26,650 u Shimonoseki, Yamaguchi 1970 10,11D 793u ,6 (r,b) 250 t/d Tochigi, Tochigi 1971 EP,1EP 990u 1,2,3 (r) 18,100 u Tokyo 1960 EM,1EM 208u 8 (r,b) 20 t/m Tosu, Saga 1970 L,1LJ 784u 1,2 (r) 19,450 u Indue Hubber Co. Ltd. IGoover Tire Co. Ltd. (Goo	Bekasi, West Java	1994	5K,15K	3,000	1,2,5 (r)	16.0 mil u/y
Cikampek 1997 7T,17T 3,389 1,2,3,5 (r,b) 5,100 t/r JAPAN Bridgestone Corp. Amagi, Fukuoka 1973 EK,1EK 817u 2,3 (r) 11,050 u Hikone, Shiga 1968 EL,1EL 1,594u 1,2 (r) 55,000 U Hofu, Yamaguchi 1976 H4,1H4 1,041u 1,2,6 (r,b) 5,300 U/ Kitakyushu, Fukuoka 2009 515u 6 (r) 170 t/d Kurume, Fukuoka 1931 EH,1EH 1,074u 1,2,8,9 (r,b) 10,400 u Nasu, Tochigi 1962 EN,1EN 800u 1,2,4,5,7 (r,b) 2,560 u Shimonoseki, Yamaguchi 1970 10,11D 793u ,6 (r,b) 18,100 u Tochigi, Tochigi 1971 EP,1EP 990u 1,2,3 (r) 18,100 u Tokyo 1960 EM,1EM 208u ,8 (r,b) 220 t/m Tosu, Saga 1970 L,1LJ 784u 1,2 (r) 19,450 u Miteda 1961 <td>P.T. Sumi Rubber Indonesia (Sumitomo Ru</td> <td>ubber Ind</td> <td>dustries Ltd.)</td> <td></td> <td></td> <td></td>	P.T. Sumi Rubber Indonesia (Sumitomo Ru	ubber Ind	dustries Ltd.)			
JAPAN Bridgestone Corp. Amagi, Fukuoka 1973 EK,1EK 817u 2,3 (r) 11,050 u Hikone, Shiga 1968 EL,1EL 1,594u 12 (r) 55,000 u Hofu, Yamaguchi 1976 H4,1H4 1,041u 1,26 (r,b) 5,300 t/r Kitakyushu, Fukuoka 2009 515u 6 (r) 170 t/d Kurume, Fukuoka 1931 EH,1EH 1,074u 1,28,9 (r,b) 10,400 u Nasu, Tochigi 1962 EN,1EN 800u 1,24,5.7 (r,b) 22,650 u Shimonoseki, Yamaguchi 1970 10,11D 793u ,6 (r,b) 250 t/d Tochigi, Tochigi 1971 EP,1EP 990u 1,2.3 (r) 18,100 u Tokyo 1960 EM,1EM 208u ,8 (r,b) 220 t/m Tosu, Saga 1970 EJ,1EJ 784u 1,2 (r) 19,450 u Iteda 1961 CJ,1CJ 5 (r,b) 4 0 mi u Nigatonojo, Miyazaki 1972 - <td< td=""><td>Cikampek</td><td>1997</td><td>7T,17T</td><td>3,389</td><td>1,2,3,5 (r,b)</td><td>5,100 t/m</td></td<>	Cikampek	1997	7T,17T	3,389	1,2,3,5 (r,b)	5,100 t/m
Bridgestone Corp. Amagi, Fukuoka 1973 EK, EK 817u 2,3 (r) 11,050 u Hikone, Shiga 1968 EL, IEL 1,594u 1,2 (r) 5,500 u Hofu, Yamaguchi 1976 H4,1H4 1,041u 1,2 6 (r,b) 5,300 t/r Kitakyushu, Fukuoka 2009 Imagi, Situ Situ Situ Situ Situ Situ Situ Situ		JA	PAN			
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Hikone, Shiga 1968 EL, 1EL 1,594u 1,2 (r) 55,000 L Hofu, Yamaguchi 1976 H4,1H4 1,041u 1,26 (r,b) 5,300 t/r Kitakyushu, Fukuoka 2009 515u 6 (r) 170 t/d Kurume, Fukuoka 1931 EH,1EH 1,074u 1,2,8,9 (r,b) 10,400 L Nasu, Tochigi 1962 EN,1EN 800u 1,2,4,5,7 (r,b) 2,650 L Shimonoseki, Yamaguchi 1970 10,11D 793u .6 (r,b) 250 t/d Tochigi, Tochigi 1971 EP,1EP 990u 1,2,3 (r) 18,100 L Tosu, Saga 1970 EJ,1EJ 784u 1,2 (r) 19,450 L Inoue Rubber Co. Ltd. (Goodyear Tire & Rubber Co.) Tatsuno 1972 - 270u ,6 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. 1976 V4,1V4 1,465u 1,2,3,4 (r,b) 9,350 t/r Nagoya, Aichi 1976 V4,1V4 1,465u 1,2,3,6 (r) 100 u/d Sumitomo Rubber Industries Ltd. 1974 U2,1U2 1,576u 1,2,3,6 (r) 10,50 t/r	Amagi, Fukuoka	1973	EK,1EK	817u	2,3 (r)	11,050 u/d
Hofu, Yamaguchi 1976 H4, 1H4 1,041u 1,2,6 (r,b) 5,300 t/r Kitakyushu, Fukuoka 2009 515u 6 (r) 170 t/d Kurume, Fukuoka 1931 EH, 1EH 1,074u 1,2,8,9 (r,b) 10,400 u Nasu, Tochigi 1962 EN, 1EN 800u 1,2,4,5,7 (r,b) 2,665 u Shimonoseki, Yamaguchi 1970 10,11D 793u ,6 (r,b) 280 t/d Tochigi, Tochigi 1970 10,11D 793u ,6 (r,b) 280 t/d Tokyo 1960 EM, 1EM 208u ,8 (r,b) 200 t/m Tosu, Saga 1970 EJ, 1EJ 784u 1,2 (r) 19,4 0.0 Inoue Rubber Co. Ltd. (Goodyear Tire & Rubber Co.) Tatsuno 1972 - 270u ,6 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. 1972 - 270u ,6 (r,b) 10 u/d Miyakonojo, Miyazaki 1976 V4,1V4 1,465 u 1,2,3,6,7 (r,b) 50 t/m Miyakonojo, Miyazaki 1976	Hikone, Shiga	1968	EL,1EL	1,594u	1,2 (r)	55,900 u/d
Kitakyushu, Fukuoka 2009 515u 6 (r) 170 t/d Kurume, Fukuoka 1931 EH, IEH 1,074u 1,2,8,9 (r,b) 10,400 u Nasu, Tochigi 1962 EN,1EN 800u 1,2,4,5,7 (r,b) 22,650 u Shimonoseki, Yamaguchi 1970 1D,11D 793u ,6 (r,b) 250 t/d Tochigi, Tochigi 1971 EP,1EP 990u 1,2,3 (r) 18,100 u Tokyo 1960 EM,1EM 208u ,8 (r,b) 220 t/m Tosu, Saga 1970 EJ,1EJ 784u 1,2 (r) 19,450 u Inoue Rubber Co. Ltd. Inoue Rubber Co. Ltd. Inoue Rubber Co. ,5 (r,b) 4.0 mil u Nippon Giant Tire Co. Ltd. (Goodyear Tire & Rubber Co.) .5 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. 1972 - 270u ,6 (r,b) 110 u/d Miyakonojo, Miyazaki 1976 V4,1V4 1,465u 1,2,3,6 (r) 50 t/m Nagoya, Aichi 1961 EU,1EU 1,221u 1,2,3,6 (r) 10,350 t/m	Hofu, Yamaguchi	1976	H4,1H4	1,041u	1,2,6 (r,b)	5,300 t/m
Kurume, Fukuoka 1931 EH,1EH 1,074u 1,2,8,9 (r,b) 10,400 u Nasu, Tochigi 1962 EN,1EN 800u 1,2,4,5,7 (r,b) 22,650 u Shimonoseki, Yamaguchi 1970 1D,11D 793u ,6 (r,b) 250 t/d Tochigi, Tochigi 1971 EP,1EP 990u 1,2,3 (r) 18,100 u Tokyo 1960 EM,1EM 208u ,8 (r,b) 220 t/m Tosu, Saga 1970 EJ,1EJ 784u 1,2 (r) 19,450 u Inoue Rubber Co. Ltd. Inoue Rubber Co. Ltd. Inoue Rubber Co. 4.0 mil u Nippon Giant Tire Co. Ltd. (Goodyear Tire & Rubber Co.) 5 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. Izumiotsu, Osaka 1976 V4,1V4 1,465u 1,2,3,4 (r,b) 9,350 v/r Nagoya, Aichi 1961 EU,1EU 1,221u 1,2,3,6 (r) 10,350 t Toyo Tire Corp. Itagana, Mie 1976 V4,1V4 1,465u 1,2,3 (r) 80,400 t Sendai, Miyagi 1965 CX,1CX	Kitakyushu, Fukuoka	2009		515u	6 (r)	170 t/d
Nasu, Tochigi 1962 EN, 1EN 800u 1,2,4,5,7 (r,b) 22,650 u Shimonoseki, Yamaguchi 1970 1D,11D 793u ,6 (r,b) 250 t/d Tochigi, Tochigi 1971 EP,1EP 990u 1,2,3 (r) 18,100 u Tokyo 1960 EM,1EM 208u ,8 (r,b) 220 t/m Tosu, Saga 1970 EJ,1EJ 784u 1,2 (r) 19,450 u Inoue Rubber Co. Ltd. 1970 EJ,1EJ 784u 1,2 (r) 19,450 u Ikeda 1961 CJ,1CJ 5 (r,b) 4.0 mil u Nippon Giant Tire Co. Ltd. (Goodyear Tire & Rubber Co.) 5 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. 1972 - 270u ,6 (r,b) 110 u/d Sumitomosaka 1974 VW,1VW 362u 1,2,4,6,7 (r,b) 750 v/m Miyakonojo, Miyazaki 1976 V4,1V4 1,465u 1,2,3,6 (r) 10,350 t/r Nagoya, Aichi 1961 EU,1EU 1,221u 1,2,3,6 (r) 10,350 t/r	Kurume, Fukuoka	1931	EH,1EH	1,074u	1,2,8,9 (r,b)	10,400 u/d
Shimonoseki, Yamaguchi 1970 1D,11D 793u 6 (r,b) 250 t/d Tochigi, Tochigi 1971 EP,1EP 990u 1,2,3 (r) 18,100 u Tokyo 1960 EM,1EM 208u ,8 (r,b) 220 t/m Tosu, Saga 1970 EJ,1EJ 784u 1,2 (r) 19,450 u Inoue Rubber Co. Ltd. Imous Rubber Co. Imous Rubber Co. 4.0 mil u Nippon Giant Tire Co. Ltd. (Goodyear Tire & Rubber Co.) .5 (r,b) 4.0 mil u Nippon Giant Tire Co. Ltd. (Goodyear Tire & Rubber Co.) .6 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. Izumiotsu, Osaka 1944 VW,1VW 362u 1,2,4,6,7 (r,b) 750 t/m Miyakonojo, Miyazaki 1976 V4,1V4 1,465u 1,2,3,6 (r) 10,350 t/r Nagoya, Aichi 1961 EU,1EU 1,221u 1,2,3,6 (r) 10,350 t/r Shirakawa, Fukishima 1974 U2,1U2 1,576u 1,2,3 (r) 80,400 t Sendai, Miyagi 1965 CX,1CX 1,184u 1,2,3 (r) 80,400	Nasu, Tochigi	1962	EN,1EN	800u	1,2,4,5,7 (r,b)	22,650 u/d
Tochigi, Tochigi 1971 EP,1EP 990u 1,2,3 (r) 18,100 u Tokyo 1960 EM,1EM 208u ,8 (r,b) 220 t/m Tosu, Saga 1970 EJ,1EJ 784u 1,2 (r) 19,450 u Inoue Rubber Co. Ltd. Inoue Rubber Co. Ltd. Inoue Rubber Co. Ltd. Inoue Rubber Co. Ltd. 4.0 mil u Nippon Giant Tire Co. Ltd. (Goodyear Tire & Rubber Co.) 5 (r,b) 4.0 mil u Tatsuno 1972 - 270u ,6 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. Izamiotsu, Osaka 1944 VW,1VW 362u 1,2,4,6,7 (r,b) 750 t/m Miyakonojo, Miyazaki 1976 V4,1V4 1,465u 1,2,3,4 (r,b) 9,350 t/r Nagoya, Aichi 1961 EU,1EU 1,221u 1,2,5,9 (r,b) 6,150 t/r Siriakawa, Fukishima 1974 U2,1U2 1,576u 1,2,3,6 (r) 10,350 t/r Sendai, Miyagi 1965 CX,1CX 1,184u 1,2,3 (r) 80,400 t Sendai, Miyagi 1965 CX,1CX	Shimonoseki, Yamaguchi	1970	1D,11D	793u	,6 (r,b)	250 t/d
Tokyo 1960 EM, 1EM 208u ,8 (r,b) 220 t/m Tosu, Saga 1970 EJ, 1EJ 784u 1,2 (r) 19,450 u Inoue Rubber Co. Ltd. Iseda 1961 CJ, 1CJ 784u 1,2 (r) 19,450 u Inoue Rubber Co. Ltd. Iseda 1961 CJ, 1CJ .5 (r,b) 4.0 mil u Nippon Giant Tire Co. Ltd. (Goodyear Tire & Rubber Co.) Tatsuno 1972 - 270u .6 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. Izumiotsu, Osaka 1944 VW, 1VW 362u 1,2,4,6,7 (r,b) 750 t/m Miyakonojo, Miyazaki 1976 V4, 1V4 1,465u 1,2,3,4 (r,b) 9,350 t/r Nagoya, Aichi 1961 EU,1EU 1,221u 1,2,5,9 (r,b) 6,150 t/r Shirakawa, Fukishima 1974 U2,1U2 1,576u 1,2,3,6 (r) 10,350 t Toyo Tire Corp. Isona, Mie 1979 N3,1N3 1,485u 1,2,3 (r) 80,400 t Yokohama Rubber Co. Ltd. Isona, Miyagi 1965 CX,1CX </td <td>Tochigi, Tochigi</td> <td>1971</td> <td>EP,1EP</td> <td>990u</td> <td>1,2,3 (r)</td> <td>18,100 u/d</td>	Tochigi, Tochigi	1971	EP,1EP	990u	1,2,3 (r)	18,100 u/d
Tosu, Saga 1970 EJ,1EJ 784u 1,2 (r) 19,450 u Inoue Rubber Co. Ltd. 1961 CJ,1CJ ,5 (r,b) 4.0 mil u Nippon Giant Tire Co. Ltd. (Goodyear Tire & Rubber Co.) 784u 1,2 (r) 19,450 u Tatsuno 1972 270u ,6 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. 1972 270u ,6 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. 1972 270u ,6 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. 1972 270u ,6 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. 1972 270u ,6 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. 1974 V4,1V4 1,465u 1,2,4,6,7 (r,b) 9,350 t/r Miyakonojo, Miyazaki 1976 V4,1V4 1,465u 1,2,3,6 (r) 10,350 t Nagoya, Aichi 1971 U2,1U2 1,576u 1,2,3,6 (r) 10,350 t Toyo Tire Corp. Kuwana, Mie 1979 N3,1N	Токуо	1960	EM,1EM	208u	,8 (r,b)	220 t/m
Inoue Rubber Co. Ltd. 1961 CJ,1CJ ,5 (r,b) 4.0 mil u Nippon Giant Tire Co. Ltd. (Goodyear Tire & Rubber Co.) Tatsuno 1972 270u ,6 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. 1972 270u ,6 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. 1974 VW,1VW 362u 1,2,4,6,7 (r,b) 750 t/m Miyakonojo, Miyazaki 1976 V4,1V4 1,465u 1,2,3,4 (r,b) 9,350 t/r Nagoya, Aichi 1961 EU,1EU 1,221u 1,2,3,6 (r) 10,350 t Shirakawa, Fukishima 1974 U2,1U2 1,576u 1,2,3 (r) 80,400 t Sendai, Miyagi 1965 CX,1CX 1,184u 1,2,9 (r) 74,400 t Yokohama Rubber Co. Ltd. 7 35 t/d Mie, Mie 1944 FB,1FB 824u 1,2,3 (r) 5.9 mil u	Tosu, Saga	1970	EJ,1EJ	784u	1,2 (r)	19,450 u/d
Ikeda 1961 CJ,1CJ ,5 (r,b) 4.0 mil u Nippon Giant Tire Co. Ltd. (Goodyear Tire & Rubber Co.) Tatsuno 1972 270u ,6 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. Izumiotsu, Osaka 1944 VW,1VW 362u 1,2,4,6,7 (r,b) 750 t/m Miyakonojo, Miyazaki 1976 V4,1V4 1,465u 1,2,3,4 (r,b) 9,350 t/r Nagoya, Aichi 1961 EU,1EU 1,221u 1,2,3,6 (r) 10,350 t/r Shirakawa, Fukishima 1974 U2,1U2 1,576u 1,2,3,6 (r) 10,350 t Toyo Tire Corp. Kuwana, Mie 1979 N3,1N3 1,485u 1,2,3 (r) 80,400 t Sendai, Miyagi 1965 CX,1CX 1,184u 1,2,9 (r) 74,400 t Yokohama Rubber Co. Ltd. 7 35 t/d Mie, Mie 1944 FB,1FB 824u 1,2,3 (r) 5.9 mil u	Inoue Rubber Co. Ltd.					
Nippon Giant Tire Co. Ltd. (Goodyear Tire & Rubber Co.) Tatsuno 1972 270u ,6 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. Izumiotsu, Osaka 1944 VW,1VW 362u 1,2,4,6,7 (r,b) 750 t/m Miyakonojo, Miyazaki 1976 V4,1V4 1,465u 1,2,3,4 (r,b) 9,350 t/r Nagoya, Aichi 1961 EU,1EU 1,221u 1,2,5,9 (r,b) 6,150 t/r Shirakawa, Fukishima 1974 U2,1U2 1,576u 1,2,3,6 (r) 10,350 t Toyo Tire Corp. Kuwana, Mie 1979 N3,1N3 1,485u 1,2,3 (r) 80,400 t Sendai, Miyagi 1965 CX,1CX 1,184u 1,2,9 (r) 74,400 t Yokohama Rubber Co. Ltd. 7 35 t/d Mie, Mie 1944 FB,1FB 824u 1,2,3 (r) 5.9 mil u	lkeda	1961	CJ,1CJ		,5 (r,b)	4.0 mil u/y
Tatsuno 1972 270u ,6 (r,b) 110 u/d Sumitomo Rubber Industries Ltd. Izumiotsu, Osaka 1944 VW,1VW 362u 1,2,4,6,7 (r,b) 750 t/m Miyakonojo, Miyazaki 1976 V4,1V4 1,465u 1,2,3,4 (r,b) 9,350 t/r Nagoya, Aichi 1961 EU,1EU 1,221u 1,2,5,9 (r,b) 6,150 t/r Shirakawa, Fukishima 1974 U2,1U2 1,576u 1,2,3,6 (r) 10,350 t/r Toyo Tire Corp. Kuwana, Mie 1979 N3,1N3 1,485u 1,2,3 (r) 80,400 tr Sendai, Miyagi 1965 CX,1CX 1,184u 1,2,9 (r) 74,400 tr Aichi 7 35 t/d Mie, Mie 1944 FB,1FB 824u 1,2,3 (r) 5.9 mil u	Nippon Giant Tire Co. Ltd. (Goodyear Tire &	Rubbe	r Co.)			
Sumitomo Rubber Industries Ltd. Izumiotsu, Osaka 1944 VW,1VW 362u 1,2,4,6,7 (r,b) 750 t/m Miyakonojo, Miyazaki 1976 V4,1V4 1,465u 1,2,3,4 (r,b) 9,350 t/r Nagoya, Aichi 1961 EU,1EU 1,221u 1,2,5,9 (r,b) 6,150 t/r Shirakawa, Fukishima 1974 U2,1U2 1,576u 1,2,3,6 (r) 10,350 t Toyo Tire Corp. 1979 N3,1N3 1,485u 1,2,3 (r) 80,400 t Sendai, Miyagi 1965 CX,1CX 1,184u 1,2,9 (r) 74,400 t Yokohama Rubber Co. Ltd. 7 35 t/d Mie, Mie 1944 FB,1FB 824u 1,2,3 (r) 5.9 mil u	Tatsuno	1972		270u	,6 (r,b)	110 u/d
Izumiotsu, Osaka 1944 VW, IVW 362u 1,2,4,6,7 (r,b) 750 t/m Miyakonojo, Miyazaki 1976 V4, IV4 1,465u 1,2,3,4 (r,b) 9,350 t/r Nagoya, Aichi 1961 EU, IEU 1,221u 1,2,5,9 (r,b) 6,150 t/r Shirakawa, Fukishima 1974 U2,1U2 1,576u 1,2,3,6 (r) 10,350 t Toyo Tire Corp. Troyo Tire Corp. Toyo Tire Corp. Toyo Tire Corp. 1979 N3,1N3 1,485u 1,2,3 (r) 80,400 t Sendai, Miyagi 1965 CX,1CX 1,184u 1,2,9 (r) 74,400 t Yokohama Rubber Co. Ltd. 7 35 t/d Mie, Mie 1944 FB,1FB 824u 1,2,3 (r) 5.9 mil u Mishima, Shizuoka 1946 FC,1EC 542u 12.9 (rb) 13.9 mil	Sumitomo Rubber Industries Ltd.					
Miyakonojo, Miyazaki 1976 V4,1V4 1,465u 1,2,3,4 (r,b) 9,350 t/r Nagoya, Aichi 1961 EU,1EU 1,221u 1,2,5,9 (r,b) 6,150 t/r Shirakawa, Fukishima 1974 U2,1U2 1,576u 1,2,3,6 (r) 10,350 t/r Toyo Tire Corp. 1979 N3,1N3 1,485u 1,2,3 (r) 80,400 tr Sendai, Miyagi 1965 CX,1CX 1,184u 1,2,9 (r) 74,400 tr Yokohama Rubber Co. Ltd. 7 35 t/d Mie, Mie 1944 FB,1FB 824u 1,2,3 (r) 5.9 mil u Mishima, Shizuoka 1946 FC,1EC 542u 1,2 9 (rb) 13 9 mil	Izumiotsu, Osaka	1944	VW,1VW	362u	1,2,4,6,7 (r,b)	750 t/m
Nagoya, Aichi 1961 EU,1EU 1,221u 1,2,5,9 (r,b) 6,150 t/r Shirakawa, Fukishima 1974 U2,1U2 1,576u 1,2,3,6 (r) 10,350 t Toyo Tire Corp. Euxilian 1979 N3,1N3 1,485u 1,2,3 (r) 80,400 t Sendai, Miyagi 1965 CX,1CX 1,184u 1,2,9 (r) 74,400 t Yokohama Rubber Co. Ltd. Image: Component of the sendar of the send	Miyakonojo, Miyazaki	1976	V4,1V4	1,465u	1,2,3,4 (r,b)	9,350 t/m
Shirakawa, Fukishima 1974 U2,1U2 1,576u 1,2,3,6 (r) 10,350 t Toyo Tire Corp.	Nagoya, Aichi	1961	EU,1EU	1,221u	1,2,5,9 (r,b)	6,150 t/m
Toyo Tire Corp. Kuwana, Mie 1979 N3,1N3 1,485u 1,2,3 (r) 80,400 t Sendai, Miyagi 1965 CX,1CX 1,184u 1,2,9 (r) 74,400 t Yokohama Rubber Co. Ltd. Aichi 7 35 t/d Mie, Mie 1944 FB,1FB 824u 1,2,3 (r) 5.9 mil u Mishima, Shizuoka 1946 FC 1FC 542u 1.2.9 (rb) 13.9 mil	Shirakawa, Fukishima	1974	U2,1U2	1,576u	1,2,3,6 (r)	10,350 t/m
Kuwana, Mie 1979 N3,1N3 1,485u 1,2,3 (r) 80,400 t Sendai, Miyagi 1965 CX,1CX 1,184u 1,2,9 (r) 74,400 t Yokohama Rubber Co. Ltd. 7 35 t/d Mie, Mie 1944 FB,1FB 824u 1,2,3 (r) 5.9 mil u Mishima, Shizuoka 1946 FC 1FC 542u 1.2.9 (rb) 13.9 mil	Toyo Tire Corp.					
Sendai, Miyagi 1965 CX,1CX 1,184u 1,2,9 (r) 74,400 tr Yokohama Rubber Co. Ltd. 7 35 t/d Aichi 7 35 t/d Mie, Mie 1944 FB,1FB 824u 1,2,3 (r) 5.9 mil u Mishima, Shizuoka 1946 FC 1FC 542u 1.2.9 (rb) 13.9 mil u	Kuwana, Mie	1979	N3,1N3	1,485u	1,2,3 (r)	80,400 t/y
Yokohama Rubber Co. Ltd. Aichi 7 35 t/d Mie, Mie 1944 FB,1FB 824u 1,2,3 (r) 5.9 mil u Mishima, Shizuoka 1946 FC 1FC 542u 1 2.9 (rb) 13.9 mil u	Sendai, Miyagi	1965	CX,1CX	1,184u	1,2,9 (r)	74,400 t/y
Aichi 7 35 t/d Mie, Mie 1944 FB,1FB 824u 1,2,3 (r) 5.9 mil u Mishima, Shizuoka 1946 FC 1FC 542u 1.2.9 (rb) 13.9 mil u	Yokohama Rubber Co. Ltd.					
Mie, Mie 1944 FB,1FB 824u 1,2,3 (r) 5.9 mil u Mishima, Shizuoka 1946 FC,1FC 542u 1.2.9 (rb) 13.9 mil	Aichi				7	35 t/d
Mishima Shizuoka 1946 FC 1FC 542u 1 2 9 (rb) 13 9 mil	Mie, Mie	1944	FB,1FB	824u	1,2,3 (r)	5.9 mil u/y
	Mishima, Shizuoka	1946	FC,1FC	542u	1,2,9 (r,b)	13.9 mil u/v

Company/plant location	Year	TOD	Employees	Tire	Estimated
Onomichi Hiroshima	1974	87 187	(u=unionizeu)	6 7 (r h)	36 t/d
Shinshiro. Aichi	1964	PD.1PD	1.044u	1.2 (r)	16.9 mil u/v
KA	ZAK	HSTAN	1,0110	.,= (.)	
Kazakhstan government					
Chimkent	1981		6,147	1,3,4	4.5 mil u/y
	MAL/	AYSIA			
Continental Tyre Malaysia Sdn. Bhd. ((Continen	tal A.G.)			
Alor Setar, Kedah	1979	Y6,1Y6	1,000u	1,2,5 (r,b)	3.0 mil u/y
Petaling Jaya, Selangor	1963	B2,46	500u	4,6,7 (r,b)	100,000 u/y
Friendship Rubber Industry M Sdn. Bh	d.	-			
Batang Kali, Selangor	1993	7K,17K	75	5,7 (b)	3,000 u/d
Golden Horse Rubber Sdn. Bhd. (Qingda	o Fullrur	n Tyre Corp. Ltd.)			1
Selangor	2019	02H		1,2,3 (r)	3.5 mil u/y
Goodyear Malaysia Bhd. (Goodyear Tire & I		ј0.) То 1то	6000	10046	5.0 miluty
	1972	10,110	0000	(r,b)	5.0 mii u/y
Toyo Tire Malaysia Sdn. Bhd. (Toyo Tire C	orp.)				
Taiping, Perak	2013	CM,1CM	1,510u	1,2 (r)	9.8 mil u/y
	AYA	MAR			
Tri-Star Tyre Factory (Myanmar Economic Co	orp.)				1
Yangon City		YN,1YN		2,3,7 (r,b)	2.5 mil u/y
	PAKI	STAN			
Atlas Tyres (Pvt.) Ltd.	1.	1	[1
	1985		250u	1,2,4,5	1,000 u/d
Gnandhara Tyre & Rubber Co. Ltd.	1060		1.2/6	100//~~	2 E milut
Karaciii	1963	HU, THU	1,3460	1,2,3,4 (F,D)	2.5 mii u/y
			200	12 (rb)	2 700 µ/d
Service Industries Ltd.	1	<u> </u>	200	1,2 (1,5)	2,100 0/0
Gujarat, Punjab	1971	E8,1E8	2,200u	1,5,7 (b)	18.5 mil u/y
Service Long March Tyres Pvt. Ltd. (Se	rvice Ind	lustries Ltd.)			<u>,</u>
Nooriabad	2022			3 (r)	740,000 u/y
PI	HILIF	PPINES			
Yokohama Tire Philippines Inc. (Yokohar	na Rubb	er Co. Ltd.)			
Clark Special Economic Zone	1996	4U,14U	1,917	1,2 (r)	12.5 mil u/y
\$0	UTH	KOREA			
Dong Ah Tire & Rubber Co. Ltd.	1	1		1	r
Yangsan	1987			7	
Hankook Tire & Technology Co. Ltd.					
Decision Decision	1070	T7 1T7	0.110	1 2 2 0 (r)	16.5 miluty
Daejeon, Daejeon Geumsan, Chungchengnam-do	1979	T7,1T7	2,113u 2 033u	1,2,3,9 (r)	16.5 mil u/y 20.1 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd.	1979 1997	T7,1T7 5M,15M	2,113u 2,033u	1,2,3,9 (r) 1,2,3 (r)	16.5 mil u/y 20.1 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan	1979 1997 	T7,1T7 5M,15M A4,1A4	2,113u 2,033u 484	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5,	16.5 mil u/y 20.1 mil u/y 543,280 u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan	1979 1997 	T7,1T7 5M,15M A4,1A4	2,113u 2,033u 484	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b)	16.5 mil u/y 20.1 mil u/y 543,280 u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.)	1979 1997 	T7,1T7 5M,15M A4,1A4	2,113u 2,033u 484	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b)	16.5 mil u/y 20.1 mil u/y 543,280 u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumbo Tire Co. Loc. (Oinadao Doublector Co.)	1979 1997 1973	T7,1T7 5M,15M A4,1A4 J0,1J0	2,113u 2,033u 484 110u	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b)	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung	1979 1997 1973 1973 0up)	T7,1T7 5M,15M A4,1A4 J0,1J0	2,113u 2,033u 484 110u	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b)	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangiu	1979 1997 1973 1973 DUP) 1989 1972	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2.1H2	2,113u 2,033u 484 110u 1,761u 1,884u	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r)	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 14.4 mil u/y 12.5 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek	1979 1997 1973 1973 1973 1989 1972 2003	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127	2,113u 2,033u 484 110u 1,761u 1,884u 136u	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2 (r)	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 14.4 mil u/y 12.5 mil u/y 2.2 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp.	1979 1997 1973 1973 1989 1972 2003	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127	2,113u 2,033u 484 110u 1,761u 1,884u 136u	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2 (r)	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 14.4 mil u/y 12.5 mil u/y 2.2 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do	1979 1997 1973 1973 1973 1989 1972 2003	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127	2,113u 2,033u 484 110u 1,761u 1,884u 136u 896	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2 (r) 7 (b)	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 14.4 mil u/y 12.5 mil u/y 2.2 mil u/y 5,000 t/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.)	1979 1997 1973 1973 500 1972 2003	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127	2,113u 2,033u 484 110u 1,761u 1,884u 136u 896	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2 (r) 7 (b)	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 2,500 u/d 14.4 mil u/y 12.5 mil u/y 2.2 mil u/y 5,000 t/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.) Changnyeong-gun	1979 1997 1997 1973 ••••••••••••••••••••••••••••••••••••	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127 UA,1UA	2,113u 2,033u 484 110u 1,761u 1,884u 136u 896 1,220u	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2 (r) 7 (b) 1,9 (r)	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 14.4 mil u/y 12.5 mil u/y 2.2 mil u/y 5,000 t/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.) Changnyeong-gun Yangsan	1979 1997 1973 1973 1979 1989 1972 2003 2003 2003 2012 1986	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127 UA,1UA 8E,18E	2,113u 2,033u 484 110u 1,761u 1,884u 136u 896 1,220u 1,986u	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2 (r) 7 (b) 1,9 (r) 1,9 (r) 1,2,9 (r)	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 2,500 u/d 14.4 mil u/y 12.5 mil u/y 2.2 mil u/y 5,000 t/y 10.7 mil u/y 16.7 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.) Changnyeong-gun Yangsan	1979 1997 1973 1973 1972 2003 2003 2012 1986 RI L	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127 UA,1UA 8E,18E ANKA	2,113u 2,033u 484 110u 1,761u 1,884u 136u 896 1,220u 1,986u	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2 (r) 7 (b) 1,9 (r) 1,2,9 (r)	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 2,500 u/d 12.5 mil u/y 12.5 mil u/y 2.2 mil u/y 5,000 t/y 10.7 mil u/y 16.7 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.) Changnyeong-gun Yangsan S Asian Tyres (Pvt). Ltd. (Ceat Ltd.)	1979 1997 1973 1973 1979 1989 1972 2003 2003 2012 1986 RIL	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127 UA,1UA 8E,18E ANKA	2,113u 2,033u 484 110u 1,761u 1,761u 1,884u 136u 896 1,220u 1,986u	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2 (r) 7 (b) 1,9 (r) 1,2,9 (r) 1,2,9 (r) 1,2,9 (r)	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 14.4 mil u/y 12.5 mil u/y 2.2 mil u/y 5,000 t/y 10.7 mil u/y 16.7 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.) Changnyeong-gun Yangsan S Asian Tyres (Pvt). Ltd. (Ceat Ltd.) Kelaniya	1979 1997 1997 1997 1973 000 1973 2003 2012 1986 RILL 2013	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127 UA,1UA 8E,18E ANKA	2,113u 2,033u 484 110u 1,761u 1,761u 1,884u 136u 896 1,220u 1,986u 84	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2 (r) 7 (b) 1,2 (r) 1,2 (r) 1,2,9 (r) 1,2,9 (r) 1,2,9 (r) 1,2,9 (r)	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 2,500 u/d 12.5 mil u/y 12.5 mil u/y 2.2 mil u/y 10.7 mil u/y 16.7 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.) Changnyeong-gun Yangsan S Asian Tyres (Pvt). Ltd. (Ceat Ltd.) Kelaniya Camso-Loadstar Pvt. Ltd. (Michelin)	 1979 1997 1997 1997 1973 □□□□ 1973 □□□ 1989 1972 2003 □□ 2012 1986 RIL 2013 	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127 UA,1UA 8E,18E ANKA	2,113u 2,033u 484 110u 1,761u 1,761u 1,884u 136u 896 1,220u 1,986u 84	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2 (r) 7 (b) 1,9 (r) 1,2,9 (r) 1,2,9 (r) 1,2,5 (r,b) 7 (b)	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 12.5 mil u/y 12.5 mil u/y 2.2 mil u/y 10.7 mil u/y 16.7 mil u/y 10.7 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.) Changnyeong-gun Yangsan S Asian Tyres (Pvt). Ltd. (Ceat Ltd.) Kelaniya Camso-Loadstar Pvt. Ltd. (Michelin) Colombo Ceat LTD	1979 1997 1997 1997 1973 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127 UA,1UA 8E,18E ANKA	2,113u 2,033u 484 110u 1,761u 1,884u 136u 896 1,220u 1,986u 84 84	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2 (r) 7 (b) 1,2,9 (r) 1,2,9 (16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 14.4 mil u/y 12.5 mil u/y 2.2 mil u/y 2.2 mil u/y 10.7 mil u/y 16.7 mil u/y 10.7 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.) Changnyeong-gun Yangsan S Asian Tyres (Pvt). Ltd. (Ceat Ltd.) Kelaniya Camso-Loadstar Pvt. Ltd. (Michelin) Colombo Ceat LTD. * Associated Ceat Pvt. Ltd. / Kalatura	1979 1997 1997 1997 1973 □□□□□ 1973 2012 1986 RIIL 2013 2008	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127 UA,1UA 8E,18E ANKA	2,113u 2,033u 484 110u 1,761u 1,761u 1,884u 136u 896 1,220u 1,986u 1,986u 84 84	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2 (r) 7 (b) 1,2,9 (r) 1,2,9 (16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 12.5 mil u/y 12.5 mil u/y 2.2 mil u/y 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.) Changnyeong-gun Yangsan S Asian Tyres (Pvt). Ltd. (Ceat Ltd.) Kelaniya Camso-Loadstar Pvt. Ltd. (Michelin) Colombo Ceat LTD. * Associated Ceat Pvt. Ltd. / Kalatura * Ceat Kelani International Tyres (Pvt) Ltd. /	 1979 1997 1997 1997 1997 1973 2003 2012 1986 RILL 2013 2008 1993 1999 	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127 UA,1UA 8E,18E ANKA 12,112 	2,113u 2,033u 484 110u 1,761u 1,761u 1,884u 136u 896 1,220u 1,986u 1,220u 1,986u 84 84	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2,9 (r) 1,2 (r) 1,9 (r) 1,2,9 (r) 1,2,9 (r) 1,2,5 (r,b) 7 (b) 5 2,3,4,7 (r,b)	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 14.4 mil u/y 12.5 mil u/y 2.2 mil u/y 5,000 t/y 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.) Changnyeong-gun Yangsan S Asian Tyres (Pvt). Ltd. (Ceat Ltd.) Kelaniya Camso-Loadstar Pvt. Ltd. (Michelin) Colombo Ceat LTD. * Associated Ceat Pvt. Ltd. / Kalatura * Ceat Kelani International Tyres (Pvt.) Ltd. / Kelaniya	1979 1997 1997 1997 1973 1972 2003 2012 1986 2112 1986 2013 2008 1993 1999	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127 UA,1UA 8E,18E ANKA 12,112 	2,113u 2,033u 484 110u 1,761u 1,761u 1,884u 136u 896 1,220u 1,986u 1,986u 84 84 1,000	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2,9 (r) 1,2 (r) 7 (b) 1,2,9 (r) 1,2,9 (16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 12.5 mil u/y 12.5 mil u/y 12.5 mil u/y 12.7 mil u/y 10.7 mil u/y 16.7 mil u/y 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.) Changnyeong-gun Yangsan S Asian Tyres (Pvt). Ltd. (Ceat Ltd.) Kelaniya Camso-Loadstar Pvt. Ltd. (Michelin) Colombo Ceat LTD. * Associated Ceat Pvt. Ltd. / Kalatura * Ceat Kelani International Tyres (Pvt.) Ltd. / Kelaniya Eu-Retec (Pvt.) Ltd. (Continental A.G.)	1979 1997 1997 1997 1973 □ 1973 2003 2003 2012 1986 RILL 2003 2013 2008 1999	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127 UA,1UA 8E,18E ANKA 12,112 	2,113u 2,033u 484 110u 1,761u 1,884u 136u 896 1,220u 1,986u 1,986u 84 84	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2 (r) 7 (b) 1,9 (r) 1,2,9 (r)	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 12.5 mil u/y 12.5 mil u/y 12.5 mil u/y 12.5 mil u/y 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y 2.2 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.) Changnyeong-gun Yangsan S Asian Tyres (Pvt). Ltd. (Ceat Ltd.) Kelaniya Camso-Loadstar Pvt. Ltd. (Michelin) Colombo Ceat LTD. * Associated Ceat Pvt. Ltd. / Kalatura * Ceat Kelani International Tyres (Pvt.) Ltd. / Kelaniya Eu-Retec (Pvt.) Ltd. (Continental A.G.) Kalutara	1979 1997 1997 1997 1973 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127 UA,1UA 8E,18E ANKA 12,112 61,161	2,113u 2,033u 484 110u 1,761u 1,884u 136u 896 1,220u 1,986u 1,220u 1,986u 84 84 1,000	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2 (r) 7 (b) 1,2 (r) 1,2 (r) 1,2,9 (r)	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 12.5 mil u/y 12.5 mil u/y 12.5 mil u/y 10.7 mil u/y 16.7 mil u/y 16.7 mil u/y 10 t/d 10 t/d
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.) Changnyeong-gun Yangsan S Asian Tyres (Pvt). Ltd. (Ceat Ltd.) Kelaniya Camso-Loadstar Pvt. Ltd. (Michelin) Colombo Ceat LTD. * Associated Ceat Pvt. Ltd. / Kalatura * Ceat Kelani International Tyres (Pvt.) Ltd. / Kelaniya Eu-Retec (Pvt.) Ltd. (Continental A.G.) Kalutara Ferentino Tyre Corp. Pvt. Ltd.	1979 1997 1997 1997 1973 2003 2003 2012 1986 RI IL 2013 1993 1999 1999	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127 UA,1UA 8E,18E ANKA 12,112 61,161	2,113u 2,033u 484 110u 1,761u 1,761u 1,884u 136u 896 1,220u 1,986u 1,986u 84 84 84 1,000	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2 (r) 7 (b) 1,2,9 (r) 1,2,9 (16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 12.5 mil u/y 12.5 mil u/y 2.2 mil u/y 12.5 mil u/y 2.2 mil u/y 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y 2.5 t/d
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.) Changnyeong-gun Yangsan S Asian Tyres (Pvt). Ltd. (Ceat Ltd.) Kelaniya Camso-Loadstar Pvt. Ltd. (Michelin) Colombo Ceat LTD. * Associated Ceat Pvt. Ltd. / Kalatura * Ceat Kelani International Tyres (Pvt.) Ltd. / Kelaniya Eu-Retec (Pvt.) Ltd. (Continental A.G.) Kalutara Ferentino Tyre Corp. Pvt. Ltd. Horana Global Bubber Inductions Dut Ltd.	1979 1997 1997 1997 1997 1973 2003 2003 2012 1986 2013 2013 2008 1999 1999 2021	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127 UA,1UA 8E,18E ANKA 12,112 61,161 062	2,113u 2,033u 484 110u 1,761u 1,761u 1,884u 136u 896 1,220u 1,986u 1,220u 1,986u 84 84 1,000	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,2,9 (r) 1,2,9 (r) 1,2 (r) 1,2 (r) 1,2,9 (r) 1,2	16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 12.5 mil u/y 12.5 mil u/y 2.2 mil u/y 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y 2.2 mil u/y 2.2 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gro Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.) Changnyeong-gun Yangsan S Asian Tyres (Pvt). Ltd. (Ceat Ltd.) Kelaniya Camso-Loadstar Pvt. Ltd. (Michelin) Colombo Ceat LTD. * Associated Ceat Pvt. Ltd. / Kalatura * Ceat Kelani International Tyres (Pvt.) Ltd. / Kelaniya Eu-Retec (Pvt.) Ltd. (Continental A.G.) Kalutara Ferentino Tyre Corp. Pvt. Ltd. Horana Global Rubber Industries Pvt. Ltd. Badaloama	1979 1997 1997 1973 1973 2012 1986 2012 1986 2013 2013 1993 1999 2008 2013 2013 2013 2013 2013 2013 2013 2013 2013 2014 2005 2015 2016 2017	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127 UA,1UA 8E,18E ANKA 12,112 61,161 062	2,113u 2,033u 484 110u 1,761u 1,761u 1,884u 136u 896 1,220u 1,986u 1,986u 84 84 1,000 636u 600	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,3 (r) 1,2,9 (r) 1,2,9 (r) 1,2 (r) 7 (b) 1,2,9 (r) 1,2,9 (16.5 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 12,500 u/d 12.5 mil u/y 2,2 mil u/y 2,2 mil u/y 10.7 mil u/y 16.7 mil u/y 10.7 mil u/y 10.7 mil u/y 25,000 t/y 25,000 t/y 10.7 mil u/y 10.7 mil u/y 25,000 t/y 10.7 mil u/y 10.7 mil u/y 20.10 t/d 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y 2.2 mil u/y 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y 2.2 mil u/y 2.2 mil u/y 10.7 mil u/y 10.7 mil u/y 2.2 mil u/y 2.2 mil u/y 2.2 mil u/y 10.7 mil u/y 2.2 mil u/y 2.2 mil u/y 2.2 mil u/y 10.7 mil u/y 10.7 mil u/y
Daejeon, Daejeon Geumsan, Chungchengnam-do Hung A Co. Ltd. Yangsan Korea Inoue Kasei (Inoue Rubber Co.) Masang Kumho Tire Co. Inc. (Qingdao Doublestar Gra Goksung Gwangju Pyungtaek Nexen Corp. Gyeongsangnam-do Nexen Tire Corp. (Nexen Corp.) Changnyeong-gun Yangsan S Asian Tyres (Pvt). Ltd. (Ceat Ltd.) Kelaniya Camso-Loadstar Pvt. Ltd. (Michelin) Colombo Ceat LTD. * Associated Ceat Pvt. Ltd. / Kalatura * Ceat Kelani International Tyres (Pvt.) Ltd. / Kelaniya Eu-Retec (Pvt.) Ltd. (Continental A.G.) Kalutara Ferentino Tyre Corp. Pvt. Ltd. Horana Global Rubber Industries Pvt. Ltd. Badalgama Colombo	1979 1997 1997 1973 1973 1973 1973 2003 2003 2012 1986 2012 1986 2013 2008 213 2008 213 2008 2019 2008 2008 2008 2008 2008 2009 2008 2009 2008 2009 2008 2009 20017 20021	T7,1T7 5M,15M A4,1A4 J0,1J0 Y0,1Y0 H2,1H2 27,127 UA,1UA 8E,18E ANKA 12,112 61,161 062	2,113u 2,033u 484 110u 1,761u 1,761u 1,884u 136u 896 1,220u 1,986u 1,986u 84 1,000 636u 600 600	1,2,3,9 (r) 1,2,3 (r) 1,2,3,4,5, 6,7,8 (r,b) 5 (b) 1,2,9 (r) 1,2,9 (r)	16.5 mil u/y 20.1 mil u/y 20.1 mil u/y 543,280 u/y 2,500 u/d 12.5 mil u/y 12.5 mil u/y 22 mil u/y 10.7 mil u/y 10.7 mil u/y 10.7 mil u/y 10 t/d 25 t/d 25 t/d 400.000 u/y

Company/ plant location	Year opened	DOT code(s)	Employees (u=unionized)	Tire types*	Estimated capacity*
Laugfs Corp. (Rubber) Ltd.					
Millawa	2005			5,7 (b)	
Sun-Tyre & Wheel Systems (TVS Group)		·			•
Colombo			700	7	320,000 u/v
Colombo			700	7	320,000 u/v
Trelleborg Wheel Systems Lanka Ltd.	l (Yokoha	i ma Rubber Co. Lto	d.)	1	1
Colombo	1993	35 135	313	47(b)	29 000 t/v
		NAN	010	1,1 (5)	20,000 0 9
Acros Bubber Industry Co. Ltd. (Usilli Ma					
Acme Rubber Industry Co. Ltd. (UIIIII MC	lors)		1	04570	1
Pridrostono Toimon Oc. Ltd. (Pridrostono	Corp.)	10,110]	2,4,0,7,9	
Bridgestone Talwan Co. Ltd. (Bridgestone	Corp.)	00.400	1.570		
Hsin-Chu	1982	C8,1C8	573u	1,2 (r,b)	11,800 u/d
Cheng Shin Rubber Ind. Co. Ltd. / Max	xis Int	ernational			
Yuanlin	1967	UY,1UY	4,798u	1,2,3,4,5, 7,9 (r,b)	48,844 u/d
Federal Corp. (Nankang Rubber Tire Corp.)					
Taoyuan	2015	01R	200	1,2,9 (r)	3.06 mil. u/y
Hwa Fong Rubber Industry Co. Ltd.			1	-,-,- (.)	1
Yuanlin	1974	X2.1X2	1.000	1.6.7 (r h)	787.455 11/1
Kenda Rubber Industrial Co. Ltd			.,	.,.,, (,,0)	I, 100 a/y
Yuan-l in	1962	K3 1K3	486	1234	787 500 11/1
	1302		100	5,7 (b)	/ 0/ ,300 u/y
Yun-Lin	1985	K3,1K3	547	1,2,4,5,	3.4 mil u/y
	L			/ (I,U)	
Nankang Kubber Tire Corp. Ltd.	1070		705.	10()	10.000
Hsin Fung	1973	08,108	725u	1,2 (r)	16,000 u/d
Seven Stars Rubber Co. Ltd.			1	I = =	I
Pib-Tou	1980	JL,1JL	200	5,7 (b)	3.6 mil u/y
Tech Rubber Co. Ltd.	<u> </u>		1	1	
Fang-Yuann	1987	K9,1K9	200	2,3,4,5,7 (b)	3.6 mil u/y
Union Rubber Tyre Mfg. Co. Ltd.			1	1	1
Pushin-Hsiang	1959	1A,11A	200	4,5,7 (b)	
	HAI	LAND			
BRIDGESTONE CORP.					
* Bridgestone Specialty Tire Manufacturing (Thai-	2019			6 (r)	35 t/d
* Bridgestone Tire Manufacturing (Theiland) Co	2004	32 131	1 9130	2 (r)	10.380 u/d
Ltd. / Chonburi	2004	02,101	1,9100	<u> (()</u>	10,300 u/u
* Thai Bridgestone Co. Ltd. / Nong Khae, Saraburi	1995	1V,11V	2,648u	1,2 (r)	38,500 u/d
* Thai Bridgestone Co. Ltd. / Ransit, Saraburi	1969	A7,1A7	1,443u	1,2,3,4,	5,247 u/d
				6,7 (r,b)	
Continental Tyres (Thailand) Co. Ltd. (Continer	ital A.G.)		4.0.0	
Pluak Daeng, Rayong	2019	036	760	1,2 (r)	2.8 mil u/y
Deestone Co. Ltd.	L	[I
Samutsakorn	1976	2B,12B,8M,18M	1,138	2,3,4,5, 6,7 (b)	25,200 t/y
General Rubber (Thailand) Co. Ltd. (lia	I Nasu Ge	neral Science Tech	noloav Co. I ta	.)	I
Amphur Muang Bayong	2019	045	2.000	3 (r)	6.0 mil 11/v
Goodyear Thailand Ltd. (Goodyear Tire & D	ubber C)	12,000	[~ (')	
Bangkok	1062		6000	128 (rb)	7 000 u/d
	1900	141,1141	0000	י,ב,ט (ו,ש)	1,000 u/u
Dhathum Thani	1005	06 106	400	2347/b	
	Holding	00,100	400	2,3,4,7 (D)	I
Revense				27/->	0.6 mil u.t.
nayong	2017	UZJ		3,7 (ľ)	2.6 mil u/y
riwa Fong Rubber (Thailand) Public Co		LHW2 FONG Rubbe	er industry Co.	L(0.)	
Amphor Muana			1	0.5.7	05 000
	2005	57,157		3,5,7	65,000 u/d
Inoue Rubber (Thailand) Co. Ltd. (Inoue	2005 Rubber	57,157 Co. Ltd.)		3,5,7	65,000 u/d
Inoue Rubber (Thailand) Co. Ltd. (Inoue Bangkok	2005 Rubber 1970	57,157 Co. Ltd.) W0,1W0	 700u	3,5,7	65,000 u/d 7.2 mil u/y
Inoue Rubber (Thailand) Co. Ltd. (Inoue Bangkok Linglong International Tire (Thailand)	2005 Rubber 1970 (Shando	57,157 Co. Ltd.) W0,1W0 ing Linglong Tyre	 700u Co. Ltd.)	3,5,7	65,000 u/d 7.2 mil u/y
Inoue Rubber (Thailand) Co. Ltd. (Inoue Bangkok Linglong International Tire (Thailand) Suanlaung	2005 Rubber 1970 (Shando 2013	57,157 Co. Ltd.) W0,1W0 ng Linglong Tyre YC,1YC	 700u Co. Ltd.)	3,5,7 1,2,3 (r)	65,000 u/d 7.2 mil u/y 13.2 mil u/y
Inoue Rubber (Thailand) Co. Ltd. (Inoue Bangkok Linglong International Tire (Thailand) Suanlaung Maxxis International (Thailand) Co. Lt	2005 Rubber 1970 (Shando 2013 d. (Che	57,157 Co. Ltd.) WO,1WO Ing Linglong Tyre YC,1YC ng Shin Rubber In	 700u Co. Ltd.) d. Co. Ltd.)	3,5,7	65,000 u/d 7.2 mil u/y 13.2 mil u/y
Inoue Rubber (Thailand) Co. Ltd. (Inoue Bangkok Linglong International Tire (Thailand) Suanlaung Maxxis International (Thailand) Co. Lt Rayong	2005 Rubber 1970 (Shando 2013 d. (Che 2003	57,157 Co. Ltd.) W0,1W0 ng Linglong Tyre YC,1YC ng Shin Rubber In 20,120	 700u Co. Ltd.) d. Co. Ltd.) 2,303u	3,5,7 1,2,3 (r)	65,000 u/d 7.2 mil u/y 13.2 mil u/y 42,260 u/d
Inoue Rubber (Thailand) Co. Ltd. (Inoue Bangkok Linglong International Tire (Thailand) Suanlaung Maxxis International (Thailand) Co. Lt Rayong Michelin Siam Group Co. Ltd. (Michelin)	2005 Rubber 1970 (Shando 2013 d. (Che 2003	57,157 Co. Ltd.) W0,1W0 Ing Linglong Tyre YC,1YC Ing Shin Rubber In 20,120	 700u Co. Ltd.) d. Co. Ltd.) 2,303u	3,5,7 1,2,3 (r) 1,2,3 (r)	65,000 u/d 7.2 mil u/y 13.2 mil u/y 42,260 u/d
Inoue Rubber (Thailand) Co. Ltd. (Inoue Bangkok Linglong International Tire (Thailand) Suanlaung Maxxis International (Thailand) Co. Lt Rayong Michelin Siam Group Co. Ltd. (Michelin) Laem Chabang	2005 Rubber 1970 (Shando 2013 d. (Che 2003	57,157 Co. Ltd.) W0,1W0 Ing Linglong Tyre YC,1YC Ing Shin Rubber In 20,120	 700u Co. Ltd.) d. Co. Ltd.) 2,303u 1,937u	3,5,7 1,2,3 (r) 1,2,3 (r) 1,2,3 (r)	65,000 u/d 7.2 mil u/y 13.2 mil u/y 42,260 u/d 17,000 u/d
Inoue Rubber (Thailand) Co. Ltd. (Inoue Bangkok Linglong International Tire (Thailand) Suanlaung Maxxis International (Thailand) Co. Lt Rayong Michelin Siam Group Co. Ltd. (Michelin) Laem Chabang Nong Khae	2005 Rubber 1970 (Shando 2013 d. (Che 2003 1990 1992	57,157 Co. Ltd.) W0,1W0 Ing Linglong Tyre YC,1YC Ing Shin Rubber In 20,120 0C,10C 3L,13L	 700u Co. Ltd.) d. Co. Ltd.) 2,303u 1,937u 1,799u	3,5,7 1,2,3 (r) 1,2,3 (r) 1,2 (r) 3,8 (r,b)	65,000 u/d 7.2 mil u/y 13.2 mil u/y 42,260 u/d 17,000 u/d 70,900 t/y
Inoue Rubber (Thailand) Co. Ltd. (Inoue Bangkok Linglong International Tire (Thailand) Suanlaung Maxxis International (Thailand) Co. Lt Rayong Michelin Siam Group Co. Ltd. (Michelin) Laem Chabang Nong Khae Phrapadaeng	2005 Rubber 1970 (Shandc 2013 d. (Che 2003 1990 1992 1962	57,157 Co. Ltd.) W0,1W0 Ing Linglong Tyre YC,1YC Ing Shin Rubber In 20,120 OC,10C 3L,13L W8,1W8	 700u Co. Ltd.) d. Co. Ltd.) 2,303u 1,937u 1,799u 1,370u	3,5,7 1,2,3 (r) 1,2,3 (r) 1,2 (r) 1,2 (r) 3,8 (r,b) 1,2,3 (r,b)	65,000 u/d 7.2 mil u/y 13.2 mil u/y 42,260 u/d 17,000 u/d 70,900 t/y 53,600 t/y

IRE TYPES: 1-passenger; 2-light truck/van; 3-medium truck/bus; 4-agricultural; 5-motorcycle; 6-01R; 7-industrial; 8-aircraft; 9-racing TIRE CONSTRUCTION: r-Radial; b-Bias-ply PLANT CAPACITIES: u/d-Units per day; u/y-Units per year; t/d-Metric tons per day; t/m-Metric tons per month Names in parentheses following company names indicate the parent company.

Company/ plant location	Year opened	DOT code(s)	Employees (u=unionized)	Tire types*	Estimated capacity*
Otani Tire Co. Ltd.					
* Otani Radial Co. Ltd. / Nakhon Pathom	2017	16,1E5		1,2,3 (r)	2,500 u/d
* Otani Tire Co. Ltd. / Nakhon Pathom	1989	E6,1E5	599	2,3,4,6 (b)	2,000 u/d
Prinx Chengshan Tire (Thailand) Co. L	. td. (Pri	nx Chengshan Tire	e Co. Ltd.)		•
Chonburi	2020	04N		3 (r)	8,000 u/d
S.R. Tyres Co. Ltd.				-	
Bangkok		7W,17W		2,4,5,6,7, (b)	
Sentury Tire (Thailand) Co. Ltd. (Qingda	o Sentur	ry Tire Co. Ltd.)	.	·	
Rayong	2015	TB,1TB	729	1,2 (r)	10 mil u/y
Siam Rubber Ltd.					
Samutsakorn	1967	0A	400	1,2,3,4, 6 (r,b)	540,000 u/y
Sumitomo Rubber (Thailand) Ltd. (Sumi	itomo Ri	ubber Industries Li	td.)		
Amati City	2006	R8,1R8	6,988	1,2,4,5,	14,550 t/m
				7 (r)	
Svizz One Corp. Ltd. (Deestone Co. Ltd.)	2007	KA 1KA		10(-)	20,000,/d
Thei Sin Publics Inductive Co. Ltd	2007	NA, INA		1,2 (1)	20,000 u/u
Samatsakorn	1963	15 215		123457	
ounatsakom	1300	10, 210		(b)	
Vee Rubber Corp. Ltd. & Subsidiary Co	o .				
Muang Smutsakorn	1977	6M,16M,4A, 14A,5A 15A	5,235	1,2,3,5 (r,b)	12.0 mil u/y
Yokohama Tire Manufacturing (Thaila	nd) Co	. Ltd. (Yokoham	I 1a Rubber Co. I	_td.)	I
Amata City, Ravong	2005	47,147	1,967	1,2,3 (r)	4.35 mil u/v
Zhongce Rubber (Thailand) Co. Ltd. (H	langzhou	I Zhonace Rubber	Co. Ltd.)	, <u>, , , , , , , , , , , , , , , , , , </u>	
Rayong	2015	00K	2,800u	1,2,3,5,	14.5 mil u/y
				6,7 (r,b)	
U	ZBE	KISTAN			
Birinchi Rezinotexnika Zavodi L.L.C. (P.J.S.C.	Tatneft)	1	.	,
Angren	2018			1,2,4	3.2 m u/y
	VIET	NAM			
A.C.T.R. Co. Ltd. (Sailun Group - Goodyear Tir	e & Rub	ber Co.)	1	.	,
Phuoc Dong, Tay Ninh	2020	04B		3 (r)	2.0 mil u/y
Bridgestone Tire Manufacturing Vietn	am L.	L.C. (Bridgestone	Corp.)		
Hai Phong City	2014	1T,11T	943	1,2 (r)	11,436 u/d
Camso Vietnam Co. Ltd. (Michelin)	0010	1	100	7	1
Casting (Couthorn Dubbar Industry 1.5.C.)	2016		160	/	
Rinh Loi Ho Chi Minh	1076	MD1MD	1140	23 (b)	3 300 t/y
Dong Nai Dong Nai	1976	MN 1MN	2860	245 (rb)	12 200 t/y
Tan Liven, Binh Duong	2014	00B	8040	123 (r)	19 150 t/v
Cheng Shin Rubber (Vietnam) Ind. Co.	Ltd. (Chena Shin Rubbe	r Ind. Co. Ltd.)	.,_;• (.)	
Nhon Trach	2006	5N,15N	1,813	1,2,3,4,5,	6,890 u/d
				7 (b)	
Da Nang Rubber Co.	1	1	1	1	
DaNang	2006	MF,1MF	4 000	1,2,3,5 (b)	850,000 u/y
DaNang	2013	KT, 1KT	1,000	,3 (r)	600,000 u/y
Goodtime Rubber Co. Ltd.	0004	10 110	1	0.5.7	1
An Tinn Village	2001	16,116		2,5,7	
Thoue Rubber Vietnam Co. Ltd. (Inoue Ri	upper Co		1 000	5	1
Inann Lam	Croup C		1,000	5	
Trang Ban Tay Ninh	2021	J. LIU.)		3 (r)	2.0 mil 11/4
Kenda Rubber (Vietnam) Co. Ltd. (Kend		I er Industrial Co. Ltv	l ()	U (1)	2.0 min u/y
Thong Nhat, Dong Nai	1997	8Y.18Y	1.233	5.7 (b)	14.6 mil µ/v
Trang Born, Dong Nai	2017	02T	875	1,2	108.332 u/d
Kumho Tire (Vietnam) Co. Ltd. (Kumho T	Tire Co. I	_td.)	1	I '	.,
Ben Cat	2008	K2,1K2	751	1,2 (r)	4.4 mil u/v
Sailun (Vietnam) Co. Ltd. (Sailun Jinyu Tvr	e Co. Lt	d.)		<u> </u>	<u>, </u>
Phuoc Dong	2013	YJ,1YJ	4,500	1,2,3,6 (r)	11.4 mil u/y
Sao Vang Rubber Co.			•		•
Hanoi	1960			1,2,4,5	300,000 u/y
Yokohama Tyre Vietnam Co. (Yokohama F	Rubber (Co. Ltd.)	1		
Ho Chi Minh City	1997	5G,15G	126	2,5,7 (b)	2,160 t/y
Thuan An District	2007	2P,12P	514	2,7 (b)	1.3 mil u/y
AFRICA					
	ALG	ERIA			
Saterex-Iris E.u.r.I					
Setif	2019	033		1 (r)	2.0 mil u/v
	1	1	1	N /	

	opened	code(s)	(u=unionized)	types*	capacity*
	EG	үрт			
exandria Tire Co. S.A.E (Prometeon Tyre	Group s	s.r.l.)			
lexandria	1995	9M,19M	1,200	3 (r)	850,000 u/y
yramids Tires	0000	050	5.000	0457(++)	r
rt-Sald	2020	053	5,600	2,4,5,7 (r,D)	
	1965	OM 10M	3 2200	1234 (rb)	40 t/d
SO		AFRICA	3,2200	1,2,3,4 (1,0)	40 00
ridgestone South Africa Holdings (Pt	v.) Lto	. (Bridgestone Co	rn)		
rits	1971	E9,1E9,8T,18T	729u	1,2,3 (r)	6,533 u/d
ontinental Tyre SA (Pty.) Ltd. (Continent	tal A.G.)	, , ,		,,,,,,	
qeberha	1950	1L,11L	1,000u	1,2,3,4,6 (r,b)	2.0 mil u/y
oodyear South Africa Ltd. (Goodyear Tire	e & Rub	ber Co.)			
litenhage	1947	NW,1NW	1,000u	1,2,6,7 (r,b)	10,000 u/d
umitomo Rubber South Africa (Pty.) L	.td. (Si	umitomo Rubber Iı	ndustries Ltd.)	I	i
adysmith	2013	D7,1D7	1,615u	1,2,3 (r)	1,700 t/m
	TUN	IISIA			
FIP - Societe Tunisienne des Industri	ies du	Pneumatique	•	1	
lenzel-Bourguib	1967				160,222 u/y
l'saken	1985			1,2,3	481,000 u/y
IIDDLE EAST					
	IR	AN			
borz Tire Mfg. Co.				1	
ehran	1958		1,640	1,2,3,4,7 (r,b)	30,000 t/y
tawheel Tire Industrial Complex (Raz	Group)	75.0	4004111	40.000
raebii	1996		750u	1,2,3,4 (r,b)	40,000 t/y
rucuil	2020	l		۷,3 (Г)	300,000 U/S
rerman Kerman	1993		352	12347(rb)	103 000 t/v
vehoolan. Kurdistan	2017		354	1 (r)	36.000 u/v
ena Tire & Rubber Manufacturing Co	. Ltd.	<u>I</u>		()	
hiraz	1973		1,968u	1,2,3,4 (r,b)	49,200 t/y
an Tire Co.		•			
ehran	1963	BP		1,2,3,4 (r,b)	28,000 t/y
an Yasa Tire & Rubber Co.		1	[
asa	1969		1,300	5 (b)	8,000 t/y
avir Tire & Rubber Co.	4007	1		4.0.0 (1)	05.000.1/
arjand	1997			1,2,3 (r,b)	25,000 t/y
	1				
ars Tire Co.	1983	X4		123(h)	40 000 t/v
ars Tire Co. avah azd Tire Co.	1983	X4		1,2,3 (b)	40,000 t/y
ars Tire Co. avah azd Tire Co. azd	1983 1994	X4	325	1,2,3 (b)	40,000 t/y 16,000 t/y
ars Tire Co. Savah azd Tire Co. Yazd	1983 1994 ISR	X4 AEL	325	1,2,3 (b) 1,2,5 (b)	40,000 t/y 16,000 t/y
ars Tire Co. avah azd Tire Co. azd Iliance Tire Co. (1992) Ltd. (Yokohama F	1983 1994 ISR Rubber (X4 AEL Co. Ltd.)	325	1,2,3 (b) 1,2,5 (b)	40,000 t/y 16,000 t/y
ars Tire Co. avah azd Tire Co. azd liance Tire Co. (1992) Ltd. (Yokohama P adera	1983 1994 ISR Rubber 0 1952	X4 AEL Co. Ltd.) CD,1CD	325 585u	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b)	40,000 t/y 16,000 t/y 42,000 t/y
ars Tire Co. avah azd Tire Co. azd I liance Tire Co. (1992) Ltd. (Yokohama F ladera	1983 1994 ISR Rubber (1952 TUR	X4 AEL Co. Ltd.) CD,1CD	325 585u	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b)	40,000 t/y 16,000 t/y 42,000 t/y
ars Tire Co. iavah azd Tire Co. iazd I liance Tire Co. (1992) Ltd. (Yokohama F Iadera Inlas Anadolu Lastik Sanayi Ve Ticard	1983 1994 ISR Rubber (1952 TUR et A.S	X4 AEL Co. Ltd.) CD,1CD KEY S.	325 585u	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b)	40,000 t/y 16,000 t/y 42,000 t/y
ars Tire Co. avah azd Tire Co. azd Iliance Tire Co. (1992) Ltd. (Yokohama F ladera Inlas Anadolu Lastik Sanayi Ve Ticard Folu/Duzce	1983 1994 ISR Rubber (1952 TUR et A.S 1974	X4 AEL Co. Ltd.) CD,1CD KEY S. KL,RJ,67	325 585u 300u	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b) ,4,5,7 (r,b)	40,000 t/y 16,000 t/y 42,000 t/y 5,000 u/d
ars Tire Co. avah azd Tire Co. azd Iliance Tire Co. (1992) Ltd. (Yokohama F adera Inlas Anadolu Lastik Sanayi Ve Ticard olu/Duzce Illas ve Kauçuk San. Tic. A.S.	1983 1994 ISR Rubber (1952 TUR et A.S 1974	X4 AEL Co. Ltd.) CD,1CD KEY S. KL,RJ,67	325 585u 300u	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b) ,4,5,7 (r,b)	40,000 t/y 16,000 t/y 42,000 t/y 5,000 u/d
ars Tire Co. avah azd Tire Co. azd Iliance Tire Co. (1992) Ltd. (Yokohama F ladera Inlas Anadolu Lastik Sanayi Ve Ticard olu/Duzce Illas ve Kauçuk San. Tic. A.S. ilecik	1983 1994 ISR Rubber (1952 TUR et A.S 1974	X4 AEL Co. Ltd.) CD,1CD KEY S. KL,RJ,67	325 585u 300u	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b) ,4,5,7 (r,b)	40,000 t/y 16,000 t/y 42,000 t/y 5,000 u/d 3.0 mil u/y
ars Tire Co. avah azd Tire Co. azd Iliance Tire Co. (1992) Ltd. (Yokohama F ladera Inlas Anadolu Lastik Sanayi Ve Ticare iolu/Duzce Illas ve Kauçuk San. Tic. A.S. iilecik	1983 1994 ISR Ubber (1952 TUR 1952 TUR 1974 2011 2011	X4 AEL Co. Ltd.) CD,1CD KEY S. KL,RJ,67 Ticaret A.S. (325 585u 300u Bridgestone Co	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b) ,4,5,7 (r,b) ,4,5,7 (b) prp.)	40,000 t/y 16,000 t/y 42,000 t/y 5,000 u/d 3.0 mil u/y
ars Tire Co. iavah azd Tire Co. iazd Iliance Tire Co. (1992) Ltd. (Yokohama F Iadera Ilias Anadolu Lastik Sanayi Ve Ticard Ilias ve Kauçuk San. Tic. A.S. iilecik risa Bridgestone Sabanci Lastik Sana ksaray zmit	1983 1994 ISR Rubber (1952 TUR et A.S 1974 2011 ayi ve 2018	X4 AEL Co. Ltd.) CD,1CD KEY S. KL,RJ,67 Ticaret A.S. (027 15,115	325 585u 300u Bridgestone Co 700u	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b) ,4,5,7 (r,b) ,4,5,7 (b) orp.) 1,2 (r) 1,2 4.6 (-b)	40,000 t/y 16,000 t/y 42,000 t/y 5,000 u/d 3.0 mil u/y 2.5 mil u/y
ars Tire Co. avah azd Tire Co. azd lliance Tire Co. (1992) Ltd. (Yokohama F ladera nlas Anadolu Lastik Sanayi Ve Ticaro iolu/Duzce illas ve Kauçuk San. Tic. A.S. iilecik risa Bridgestone Sabanci Lastik San ksaray zmit	1983 1994 ISR Rubber () 1952 TUR 1952 TUR 2011 2011 2011 2011 2018 1974	X4 AEL Co. Ltd.) CD,1CD KEY S. KL,RJ,67 Ticaret A.S. (027 L5,1L5	325 585u 300u Bridgestone Co 700u 1,504u	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b) 4,6,7 (r,b) ,4,5,7 (r,b) 1,2,7 (b) 1,2 (r) 1,2,3,4,6 (r,b)	40,000 t/y 16,000 t/y 42,000 t/y 5,000 u/d 3.0 mil u/y 2.5 mil u/y 33,700 u/d
ars Tire Co. avah azd Tire Co. azd lliance Tire Co. (1992) Ltd. (Yokohama F ladera nlas Anadolu Lastik Sanayi Ve Ticard rolu/Duzce illas ve Kauçuk San. Tic. A.S. ilecik risa Bridgestone Sabanci Lastik San iksaray zmit oodyear Lastikleri Turk A.S. (Goodyear daoazari	1983 1994 ISR Rubber (1952 TUR t A.S 1974 2011 2011 2018 1974 2018 1974 Tire & R 1960	X4 AEL Co. Ltd.) CD,1CD KEY KL,RJ,67 Ticaret A.S. (027 L5,1L5 ubber Co.) C0.C01	325 585u 300u Bridgestone Co 700u 1,504u 700u	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b) 4,6,7 (r,b) 4,5,7 (r,b) 1,2 (r) 1,2 (r) 1,2,3,4,6 (r,b) 1,2,4.6 (r,b)	40,000 t/y 16,000 t/y 42,000 t/y 42,000 t/y 5,000 u/d 3.0 mil u/y 2.5 mil u/y 33,700 u/d 17,000 u/d
ars Tire Co. avah azd Tire Co. azd liance Tire Co. (1992) Ltd. (Yokohama F ladera nlas Anadolu Lastik Sanayi Ve Ticard olu/Duzce lilas ve Kauçuk San. Tic. A.S. ilecik risa Bridgestone Sabanci Lastik Sana ksaray zmit bodyear Lastikleri Turk A.S. (Goodyear dapazari	1983 1994 ISR Rubber (1952 TUR et A.S 1974 2011 2011 2018 1974 2018 1974 1974 1960 1963	X4 AEL Co. Ltd.) CD,1CD KEY S. KL,RJ,67 Ticaret A.S. (027 L5,1L5 ubber Co.) C0,C01 PA,1PA	325 585u 300u 300u Bridgestone Co 700u 1,504u 1,504u 700u 700u	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b) 4,6,7 (r,b) ,4,5,7 (r,b) 1,2 (r) 1,2,3,4,6 (r,b) 1,2,4,6 (r,b) 3,4 (r,b)	40,000 t/y 16,000 t/y 42,000 t/y 5,000 u/d 3.0 mil u/y 2.5 mil u/y 33,700 u/d 17,000 u/d 3,000 u/d
ars Tire Co. avah azd Tire Co. azd liance Tire Co. (1992) Ltd. (Yokohama F adera nlas Anadolu Lastik Sanayi Ve Ticard olu/Duzce llas ve Kauçuk San. Tic. A.S. ilecik risa Bridgestone Sabanci Lastik Sana ksaray mit podyear Lastikleri Turk A.S. (Goodyear dapazari mit	1983 1994 ISR Ubber (1952 TUR 1952 TUR 2011 2011 2011 2011 2018 1974 1960 1963	X4 AEL Co. Ltd.) CD,1CD KEY KL,RJ,67 Ticaret A.S. (027 L5,1L5 ubber Co.) C0,C01 PA,1PA	325 325 585u 300u 300u Bridgestone Co 700u 1,504u 700u 700u 700u	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b) 4,6,7 (r,b) ,4,5,7 (r,b) 1,2,7 (r,b) 1,2,7 (r,b) 1,2,4,6 (r,b) 3,4 (r,b)	40,000 t/y 16,000 t/y 42,000 t/y 42,000 t/y 5,000 u/d 3.0 mil u/y 2.5 mil u/y 33,700 u/d 17,000 u/d 3,000 u/d
ars Tire Co. avah azd Tire Co. azd liance Tire Co. (1992) Ltd. (Yokohama F adera hlas Anadolu Lastik Sanayi Ve Ticard olu/Duzce llas ve Kauçuk San. Tic. A.S. ilecik risa Bridgestone Sabanci Lastik Sana ksaray mit podyear Lastikleri Turk A.S. (Goodyear dapazari mit	1983 1994 ISR Rubber () 1952 TUR et A.S 1974 2011 ayi ve 2018 1974 2018 1974 1960 1963	X4 A E L Co. Ltd.) CD,1CD K E Y S. KL,RJ,67 Ticaret A.S. (027 L5,1L5 ubber Co.) C0,C01 PA,1PA 48,148	325 385u 300u 300u Bridgestone Co 700u 1,504u 700u 700u 700u 700u 580	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b) 4,6,7 (r,b) 4,5,7 (r,b) 1,2 (r) 1,2 (r) 1,2,3,4,6 (r,b) 3,4 (r,b) 1,4 (r,b)	40,000 t/y 16,000 t/y 42,000 t/y 42,000 t/y 5,000 u/d 3,000 u/d 17,000 u/d 3,000 u/d 2.5 mil u/y 2.5 mil u/y
ars Tire Co. avah azd Tire Co. azd liance Tire Co. (1992) Ltd. (Yokohama F adera nlas Anadolu Lastik Sanayi Ve Ticaro olu/Duzce llas ve Kauçuk San. Tic. A.S. ilecik risa Bridgestone Sabanci Lastik Sana ksaray mit podyear Lastikleri Turk A.S. (Goodyear dapazari mit plsan Kocaeli Lastik Sanayi A.s. mit ZKA Lastik ve Kaucuk Sanayi Ticare	1983 1994 ISR 2015 1952 TUR 2011 2011 2011 2011 2011 1974 2011 1974 2011 2010 1963 2000 2000	X4 AEL Co. Ltd.) CD,1CD KEY S. KL,RJ,67 Ticaret A.S. (027 L5,1L5 ubber Co.) C0,C01 PA,1PA 48,148	325 325 585u 300u 300u 300u 300u 700u 1,504u 700u 700u 700u 700u 700u 700u	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b) 4,6,7 (r,b) ,4,5,7 (r,b) 1,2,7 (b) 1,2 (r) 1,2,3,4,6 (r,b) 1,2,4,6 (r,b) 3,4 (r,b) 1,4 (r,b)	40,000 t/y 16,000 t/y 42,000 t/y 42,000 t/y 5,000 u/d 3.0 mil u/y 2.5 mil u/y 33,700 u/d 17,000 u/d 3,000 u/d 2.5 mil u/y
ars Tire Co. avah azd Tire Co. azd lliance Tire Co. (1992) Ltd. (Yokohama F adera hlas Anadolu Lastik Sanayi Ve Ticard olu/Duzce illas ve Kauçuk San. Tic. A.S. ilecik risa Bridgestone Sabanci Lastik Sana ksaray emit oodyear Lastikleri Turk A.S. (Goodyear dapazari emit olsan Kocaeli Lastik Sanayi A.s. emit ZKA Lastik ve Kaucuk Sanayi Ticare ocaeli	1994 1994 1994 1994 1994 1994 1994 1952 TUR 2017 2011 2018 1974 2018 1974 1960 1960 1963 2000 t A.S. 2005	X4 A E L Co. Ltd.) CD,1CD KEY KL,RJ,67 Ticaret A.S. (027 L5,1L5 ubber Co.) C0,C01 PA,1PA 48,148	325 325 585u 300u 300u 300u 1,504u 700u 700u 700u 700u 700u 580 580	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b) 4,6,7 (r,b) 4,5,7 (r,b) 1,2,7 (b) 1,2 (r) 1,2,3,4,6 (r,b) 1,2,4,6 (r,b) 3,4 (r,b) 2,4,6,7 (r,b)	40,000 t/y 16,000 t/y 42,000 t/y 42,000 t/y 5,000 u/d 5,000 u/d 2.5 mil u/y 17,000 u/d 3,000 u/d 2.5 mil u/y 2.5 mil u/y 2.25 mil u/y
ars Tire Co. avah azd Tire Co. azd Iliance Tire Co. (1992) Ltd. (Yokohama F ladera Iliance Tire Co. (1992) Ltd. (Yokohama F ladera Ilias Anadolu Lastik Sanayi Ve Ticard tolu/Duzce Illas ve Kauçuk San. Tic. A.S. Iliacik risa Bridgestone Sabanci Lastik Sana ksaray zmit codyear Lastikleri Turk A.S. (Goodyear dapazari zmit colsan Kocaeli Lastik Sanayi A.s. zmit ZKA Lastik ve Kaucuk Sanayi Ticare locaeli etlas Tyre Industry & Trade Co.	1983 1994 1SR Rubber () 1952 TUR et A.S 1974 2011 ayi ve 2018 1974 2018 1974 2018 1974 2018 1974 2010 2000 t A.S. 2005	X4 AEL Co. Ltd.) CD,1CD KEY KL,RJ,67 Ticaret A.S. (027 L5,1L5 ubber Co.) C0,C01 PA,1PA 48,148	325 585u 300u 300u Bridgestone Co 700u 1,504u 700u 700u 700u 580 1.146	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b) 4,6,7 (r,b) ,4,5,7 (r,b) 1,2 (r) 1,2,3,4,6 (r,b) 1,2,4,6 (r,b) 3,4 (r,b) 1,4 (r,b) 2,4,6,7 (r,b)	40,000 t/y 16,000 t/y 42,000 t/y 42,000 t/y 5,000 u/d 3,000 u/d 3,000 u/d 17,000 u/d 3,000 u/d 2.5 mil u/y 2.5 mil u/y 220 t/d
ars Tire Co. avah azd Tire Co. azd liance Tire Co. (1992) Ltd. (Yokohama F ladera nlas Anadolu Lastik Sanayi Ve Ticaro olu/Duzce lilas ve Kauçuk San. Tic. A.S. ilecik risa Bridgestone Sabanci Lastik Sanak ksaray mit oodyear Lastikleri Turk A.S. (Goodyear dapazari mit olsan Kocaeli Lastik Sanayi A.s. mit ZKA Lastik ve Kaucuk Sanayi Ticare ocaeli etlas Tyre Industry & Trade Co.	1983 1994 1SR 1952 TUR 1952 TUR 2011 2011 2011 2011 2018 1974 1960 1963 2000 t A.S. 2005	X4 AEL Co. Ltd.) CD,1CD KEY KL,RJ,67 Ticaret A.S. (027 L5,1L5 ubber Co.) C0,C01 PA,1PA 48,148 8S,18S	325 325 585u 300u 300u 300u 300u 700u 1,504u 700u 700u 700u 700u 580 580 580 1.146	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b) 4,6,7 (r,b) 4,5,7 (r,b) 1,2 (r) 1,2,3,4,6 (r,b) 1,2,4,6 (r,b) 3,4 (r,b) 1,4 (r,b) 1,2,3,4, 6,7 8 (r,b)	40,000 t/y 16,000 t/y 42,000 t/y 5,000 u/d 5,000 u/d 3,0 mil u/y 2.5 mil u/y 17,000 u/d 3,000 u/d 2.5 mil u/y 220 t/d 11.0 mil u/y
ars Tire Co. avah azd Tire Co. azd lliance Tire Co. (1992) Ltd. (Yokohama F adera hlas Anadolu Lastik Sanayi Ve Ticard olu/Duzce illas ve Kauçuk San. Tic. A.S. ilecik risa Bridgestone Sabanci Lastik San ksaray emit oodyear Lastikleri Turk A.S. (Goodyear dapazari emit olsan Kocaeli Lastik Sanayi A.s. emit ZKA Lastik ve Kaucuk Sanayi Ticare iocaeli etlas Tyre Industry & Trade Co. irsehir	1983 1994 1SR Ubber C 1952 TUR 2011 2011 2011 2018 1974 2018 1974 2018 1974 2018 1974 2018 1974 2010 t A.S. 2000 t A.S. 2005 1976	X4 A E L Co. Ltd.) CD,1CD K E Y S. KL,RJ,67 Ticaret A.S. (027 L5,1L5 ubber Co.) C0,C01 PA,1PA 48,148 48,148	325 385u 300u 300u 300u 300u 300u 300u 300u 30	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b) 4,6,7 (r,b) 4,5,7 (r,b) 1,2,7 (b) 1,2 (r) 1,2,3,4,6 (r,b) 1,2,4,6 (r,b) 3,4 (r,b) 2,4,6,7 (r,b) 1,2,3,4, 6,7,8 (r,b)	40,000 t/y 16,000 t/y 42,000 t/y 42,000 t/y 5,000 u/d 3,000 u/d 2.5 mil u/y 17,000 u/d 3,000 u/d 2.5 mil u/y 220 t/d 11.0 mil u/y
ars Tire Co. avah azd Tire Co. fazd filiance Tire Co. (1992) Ltd. (Yokohama F fadera nlas Anadolu Lastik Sanayi Ve Ticard olu/Duzce illas ve Kauçuk San. Tic. A.S. ilecik risa Bridgestone Sabanci Lastik Sana ksaray mit podyear Lastikleri Turk A.S. (Goodyear dapazari mit pisan Kocaeli Lastik Sanayi A.s. mit ZKA Lastik ve Kaucuk Sanayi Ticare ocaeli stlas Tyre Industry & Trade Co. irsehir pometeon Tyre - Turkei mit	1983 1994 1SR Rubber (C 1952 TUR 2011 2011 2011 2011 2018 1974 2018 1974 2018 1974 2018 1974 2010 2000 1963 2000 1963	X4 A E L Co. Ltd.) CD,1CD K E Y S. KL,RJ,67 Ticaret A.S. (027 L5,1L5 Ubber Co.) C0,C01 PA,1PA 48,148 8S,18S 9M,19M	325 385u 300u 300u 300u 300u 300u 300u 700u 700u 700u 700u 700u 700u 2,300u 1,146 2,300u	1,2,3 (b) 1,2,5 (b) 1,2,5 (b) 4,6,7 (r,b) 4,6,7 (r,b) ,4,5,7 (r,b) 1,2 (r) 1,2,3,4,6 (r,b) 1,2,4,6 (r,b) 3,4 (r,b) 1,2,4,6,7 (r,b) 1,2,3,4, 6,7,8 (r,b) 1,2,3,9 (r)	40,000 t/y 16,000 t/y 16,000 t/y 42,000 t/y 5,000 u/d 3.0 mil u/y 2.5 mil u/y 33,700 u/d 17,000 u/d 3,000 u/d 2.5 mil u/y 220 t/d 11.0 mil u/y 8.0 mil u/y
ars Tire Co. avah azd Tire Co. azd lliance Tire Co. (1992) Ltd. (Yokohama F adera nlas Anadolu Lastik Sanayi Ve Ticard olu/Duzce llas ve Kauçuk San. Tic. A.S. ilecik tisa Bridgestone Sabanci Lastik Sana ksaray mit podyear Lastikleri Turk A.S. (Goodyear dapazari mit polsan Kocaeli Lastik Sanayi A.s. mit ZKA Lastik ve Kaucuk Sanayi Ticare ocaeli etlas Tyre Industry & Trade Co. irsehir ometeon Tyre - Turkei mit umitomo Rubber AKO Lastik Sanayi	1983 1994 1994 1994 1994 1994 1994 1952 TUR 2017 2011 2011 2018 1974 2018 1974 1960 1960 1963 2000 t A.S. 2000 t A.S. 2000 t A.S. 2005 1976 1976	X4 AEL Co. Ltd.) CD,1CD KEY KL,RJ,67 Ticaret A.S. (Sum 85,185 9M,19M caret A.S. (Sum	325 325 585u 300u 300u 300u 300u 1,504u 700u 1,504u 700u 700u 700u 1,504u 300u 1,504u 300u 300u 300u 300u 300u 300u 300u 3	1,2,3 (b) 1,2,5 (b) 4,6,7 (r,b) 4,6,7 (r,b) 4,5,7 (r,b) 1,2 (r) 1,2,3,4,6 (r,b) 1,2,4,6 (r,b) 3,4 (r,b) 1,2,4,6 (r,b) 1,2,4,6 (r,b) 1,2,3,4,6 (r,b) 1,2,3,9 (r) 1,2,3,9 (r) 1,2,	40,000 t/y 16,000 t/y 42,000 t/y 42,000 t/y 5,000 u/d 3,000 u/d 2.5 mil u/y 2.5 mil u/y 2.5 mil u/y 2.20 t/d 11.0 mil u/y 8.0 mil u/y

t/d-Metric tons per day; t/m-Metric tons per month Names in parentheses following company names indicate the parent company.