

North American Nonwovens Industry Outlook, 2019-2024 Wipes Chapter

A Review and Forecast of the North American Nonwovens
Supply and Demand for 2014, 2019 and 2024



**Association of the
Nonwoven Fabrics Industry**

ADVANCING ENGINEERED MATERIAL SOLUTIONS

P.O. Box 1288, Cary, North Carolina 27512-1288, U.S.A.

1100 Crescent Green, Suite 115, Cary, North Carolina 27518, U.S.A.

Tel: (919) 459-3700

Web: www.inda.org

Copyright© 2020 INDA, Association of the Nonwoven Fabrics Industry.

All rights reserved. This material may not be reproduced, in whole or in part, in any medium whatsoever, without the express written permission of INDA, Association of the Nonwoven Fabrics Industry.

INDA is a registered trademark of INDA, Association of the Nonwoven Fabrics Industry.

Foreword

This is INDA's eleventh report analyzing the nonwovens industry of North America. This report presents detailed supply and demand data for the North American nonwovens industry for 2014 and 2019, and a forecast for 2024. Specifically, the goals of the report were to:

- Provide baseline economic and demographic trends, as they are significant drivers of demand within the North American nonwovens industry;
- Develop industry consumption figures by sales, units, square meters, and tonnage for nonwoven materials in 11 end use markets and their numerous subcategories (262) for 2014 and 2019, and provide a forecast for 2024;
- Explain industry trends within the end-use markets;
- Provide an overall picture of the North American supply side by analyzing the key metrics of capacity (1990–2019), production including operating rates (2009–2019), and trade flow data (2009–2019); and
- Define and clarify end use market segmentation and production processes to provide greater precision in categorizing the industry.

INDA has undertaken this study to fulfill the element of its mission to **provide credible statistics to its members and the overall industry**. This information is intended to assist those in the nonwovens industry in making better business decisions. While no study is perfect, INDA has devoted considerable time, knowledge, reach, and resources to make this the most accurate and **most comprehensive analysis** of the total North American nonwovens industry.

It is INDA's intention to continue to improve the quality of data and industry information with each report. Your comments are welcome on information you would like included in future reports of the nonwoven industry in North America. Please feel free to contact either of us regarding any aspect of this report.



Dave Rousse, President
INDA, Association of the Nonwoven Fabrics Industry
drousse@inda.org
919.459.3730



Brad Kalil, Director of Market Research and Statistics
INDA, Association of the Nonwoven Fabrics Industry
bkalil@inda.org
919.459.3734

TABLE OF CONTENTS

I. Executive Summary	I
II. Economic and Population Drivers	7
A. North American Economic Growth.....	8
1. United States.....	9
2. Canada.....	11
3. Mexico.....	12
4. Country Comparison.....	13
B. North American Population.....	16
1. Age Cohorts	18
Babies and Toddlers (Age 0 – 4 Years).....	18
Females Age 13 – 51	21
The Elderly (65+).....	22
Population Pyramids	24
III. North American Nonwoven Demand	26
A. Disposable Applications Demand.....	34
2. Wipes	43
Consumer Wipes	50
Baby	54
Home Care	57
Personal Care.....	65
Industrial and Institutional Wipes	72
Industrial/Commercial: General	76
Industrial: Specialty	79
Institutional: Food Service and Hospitality.....	83
Institutional: Healthcare/Medical.....	86

IV. North American Nonwovens Supply..... 91

A. Capacity..... 91

 1. Historical Perspective..... 92

 2. Previous Years’ Comparisons 94

B. Production 101

 1. Historical Perspective..... 101

 2. Previous Years’ Comparisons 105

 3. Production by End-Use Market 109

 4. Production by Raw Material Usage..... 110

 Spunlaid Resins 111

 Staple Fiber Based 113

C. Trade Flows..... 115

 1. United States Trade 117

 2. North American Intra-Region Trade..... 120

 Mexico 120

 Canada 123

 3. North America Inter-Region Trade 127

 Exports 127

 Imports 132

D. Overall North American Trade Flows..... 138

 1. Intra-Region Trade..... 138

 2. Inter-Region Trade 139

V. Final Thoughts and Outlook Summary 140

VI. Appendix..... 141

A. Methodology..... 141

 1. Demand Model..... 141

2. Supply Model.....	144
B. Nonwoven Material Definitions	145
1. Nonwoven Definition	145
2. Forming Processes	145
Drylaid.....	145
Spunlaid	147
Wetlaid	148
Airlaid Short Fiber.....	148
C. Nonwoven End Use Classifications and Definitions	149
1. Disposables	149
2. Durables.....	152

LIST OF FIGURES

II. Economic and Population Drivers

II-1	Relative Sizes of North American Economies, 2019	8
II-2	Annual Growth of Real GDP in the United States, 2015–2024.....	9
II-3	Annual Growth of Real GDP in Canada, 2015–2024.....	11
II-4	Annual Growth of Real GDP in Mexico, 2015–2024.....	13
II-5	North American Real GDP Annual Growth by Country, 2015–2024.....	14
II-6	Relative Sizes of North American Populations, 2019.....	16
II-7	North American Population by Country, Historical and Forecast.....	17
II-8	Total Number of U.S. and Canada Births, Actual 1950-2019	19
II-9	Total Number of Babies and Toddlers (0–4 Years) by Country, Historical and Forecast.....	21
II-10	Total Number Females (13–51 Years) by Country, Historical and Forecast	22
II-11	Total Population and Elderly (65+ Years) by Country, Historical and Forecast....	23
II-12	U.S./Canada Population Pyramid, 2014	24
II-13	Mexico Population Pyramid, 2014.....	24
II-14	U.S./Canada Population Pyramid, 2019	25
II-15	Mexico Population Pyramid, 2019.....	25
II-16	U.S./Canada Population Pyramid, 2024f.....	25
II-17	Mexico Population Pyramid, 2024f.....	25

III. North American Nonwoven Demand

III-1	North American Nonwovens Market, Dollar Sales, 2019.....	27
III-2	North American Nonwovens Market, Square Meters, 2019	28
III-3	North American Nonwovens Market, Tonnage, 2019	28
III-4	North American Nonwoven Material Consumption, 2019	29
III-5	North American Nonwoven Material Consumption, Historical and Forecast.....	30
III-6	North American Nonwovens Square Meters Usage Market Sizes and Growth.....	32

III-7	North American Nonwovens Tonnage Usage Market Sizes and Growth	33
-------	--	----

IIIA. Disposable Applications Demand

IIIA-1	North American Disposable Nonwovens Market, End-Use Dollar Sales, Historical and Forecast.....	34
IIIA-2	North American Disposable Nonwovens Market, End-Use Unit Sales, Historical and Forecast.....	37
IIIA-3	Disposable Nonwoven Material Consumption by End-Use, 2019	38
IIIA-4	Disposable Nonwoven Material Consumption, Historical and Forecast	40
IIIA-5	North American Disposable Nonwovens Square Meter Usage Market Sizes and Growth by End-Use.....	41
IIIA-6	North American Disposable Nonwovens Tonnage Usage Market Sizes and Growth by End-Use.....	42
IIIA-7	North American Wipes Market Dollar Sales to End Users, 2019	44
IIIA-8	North American Wipes Market Unit Sales to End Users, 2019.....	44
IIIA-9	North American Wipes Market, Segment Dollar Sales, Historical and Forecast ...	47
IIIA-10	North American Wipes Market, Segment Unit Sales, Historical and Forecast.....	48
IIIA-11	Wipes Nonwoven Material Consumption, Historical and Forecast.....	49
IIIA-12	North American Consumer Wipes Market, Category Dollar Sales, Historical and Forecast.....	51
IIIA-13	North American Consumer Wipes Market, Category Unit Sales, Historical and Forecast.....	52
IIIA-14	Consumer Wipes Nonwoven Material Consumption by Category, 2019.....	54
IIIA-15	North American Baby Wipes Market, Category Unit Sales, Historical and Forecast.....	56
IIIA-16	Baby Wipes Nonwoven Material Consumption, Historical and Forecast	57
IIIA-17	North American Home Care Wipes Market, Category Unit Sales, Historical and Forecast.....	59
IIIA-18	Home Care Wipes Nonwoven Material Consumption, Historical and Forecast.....	61
IIIA-19	North American Personal Care Wipes Market, Category Unit Sales, Historical and Forecast.....	66

IIIA-20	Personal Care Wipes Nonwoven Material Consumption, Historical and Forecast.....	68
IIIA-21	North American Industrial/Institutional Wipes Market, Category Unit Sales, 2019	72
IIIA-21	North American Industrial/Institutional Wipes Market, Category Dollar Sales Historical and Forecast.....	74
IIIA-22	North American Industrial/Institutional Wipes Market, Category Unit Sales, Historical and Forecast.....	74
IIIA-23	Industrial/Institutional Wipes Nonwoven Material Consumption by Category, 2019	76
IIIA-24	North American General Industrial/Commercial Wipes Market, Unit Sales, Historical and Forecast.....	77
IIIA-25	General Industrial/Commercial Wipes Nonwoven Material Consumption, Historical and Forecast.....	78
IIIA-26	North American Specialty Industrial Wipes Market, Category Unit Sales, Historical and Forecast.....	81
IIIA-27	Specialty Industrial Wipes Nonwoven Material Consumption, Historical and Forecast.....	82
IIIA-28	North American Institutional Food Service & Hospitality Wipes Market Unit Sales, Historical and Forecast	83
IIIA-29	Food Service & Hospitality Wipes Nonwoven Material Consumption, Historical and Forecast	86
IIIA-30	North American Institutional Healthcare/Medical Wipes Market, Category Unit Sales, Historical and Forecast.....	88
IIIA-63	Institutional Healthcare/Medical Wipes Nonwoven Material Consumption Historical and Forecast.....	90

IV. North American Nonwoven Supply

IV-1	Capacity by Process, Tonnes, 2019	91
IV-2	Capacity by Region, Tonnes, 2019	91
IV-3	North American Capacity by Process, Tonnes, 1990–2019, 5-Year Periods	93
IV-4	North American Capacity by Process, Tonnes, 2010–2019, Yearly	95
IV-5	Capacity by Detailed Process, Tonnes, 2019	96
IV-6	North American Capacity by Detailed Process, Tonnes, 2010–2019.....	98

IV-7	North American Capacity, Production and Operating Rate, Tonnes 2005, 2010, 2015, 2019	102
IV-8	North American Capacity, Production and Operating Rate by Process, Tonnes, 2005, 2010, 2015, 2019	104
IV-9	North American Capacity, Production and Operating Rate, Tonnes, 2013–2019	106
IV-10	North American Capacity, Production and Operating Rate by Process, Tonnes, 2017–2019	108
IV-11	North American Production by End-Use Market 2019, Tonnes	109
IV-12	Share of Resin and Staple Fiber Used in North America Production, 2019, Tonnes	110
IV-13	Types of Synthetic Polymers Used in North America Production, 2019, Tonnes	111
IV-14	North America Spunlaid Resin Consumption, 2019, Tonnes	112
IV-15	North America Staple Fiber Consumption, 2019, Tonnes	113
IV-16	U.S. Nonwoven Material Imports and Exports, 1989–2019, Tonnes	118
IV-17	U.S. Nonwoven Material Imports and Exports 1996 to 2019, Dollars.....	119
IV-18	United States – Mexico Nonwoven Material Trade, 2009–2019, Tonnes	121
IV-19	United States – Mexico Nonwoven Material Trade 2009 to 2019, Dollars	122
IV-20	U.S. Nonwoven Roll Material to Mexico by Weight, Tonnes, 2009–2019	123
IV-21	U.S. Nonwoven Material Imports from Mexico by Weight, Tonnes, 2009–2019..	123
IV-22	United States – Canada Nonwoven Material Trade, 2009–2019, Tonnes	124
IV-23	United States – Canada Nonwoven Material Trade, 2009–2019, Dollars	125
IV-24	U.S. Nonwoven Material Exports to Canada by Weight,2009–2019, Tonnes.....	126
IV-25	U.S. Nonwoven Material Imports from Canada by Weight,2009–2019, Tonnes..	126
IV-26	North American Nonwoven Material Exports by Region Destination, Tonnes, 2009–2019	128
IV-27	North American Nonwoven Material Exports by Detailed Region Destination, Tonnes, 2009-2019.....	129
IV-28	Top 10 Export Countries for North American Nonwoven Material, Tonnes, 2009–2019	131

IV-29	North American Nonwoven Material Imports by Region of Origin, Tonnes, 2009–2019	133
IV-30	North American Nonwoven Material Imports by Detailed Region of Origin, Tonnes, 2009–2019	134
IV-31	Top 10 Import Countries to North America for Nonwoven Material, Tonnes, 2009–2019	136
IV-32	North American Nonwoven Material Imports from China by Weight Category, Tonnes, 2009–2019.....	137
IV-33	2019 North American Nonwoven Material Intra-Region Trade Flow Map.....	138
IV-24	2019 North American Nonwoven Material Trade Flow by Region Map.....	139

LIST OF TABLES

II. Economic and Population Drivers

II-1	Annual Growth of Real GDP in North America by Country, Historical and Forecast.....	14
II-2	Annual Growth of Real GDP Comparison from Previous Report Forecast to Actual GDP	15

III. North American Nonwoven Demand

III-1	North American Nonwoven Market Nonwoven Material Consumption by Disposable and Durable, Historical and Forecast	28
-------	--	----

IIIA. Disposable Applications Demand

IIIA-1	North American Disposable Nonwoven Markets Sales and Units by End-Use, Historical and Forecast.....	35
IIIA-2	North American Disposable Nonwoven Markets Nonwoven Material Consumption by End-Use, Historical and Forecast	39
IIIA-3	North American Wipes Market Sales and Units by Segment, Historical and Forecast.....	46
IIIA-4	North American Wipes Market Nonwoven Material Consumption by Segment, Historical and Forecast	49
IIIA-5	North American Consumer Wipes Market Sales and Units by Category, Historical and Forecast.....	51
IIIA-6	North American Consumer Wipes Market Nonwoven Material Consumption by Category, Historical and Forecast.....	53
IIIA-7	North American Baby Wipes Market Sales and Units by Category, Historical and Forecast.....	55
IIIA-8	North American Baby Wipes Market Nonwoven Material Consumption by Category, Historical and Forecast.....	57
IIIA-9	North American Home Care Wipes Market Sales and Units by Category, Historical and Forecast.....	58
IIIA-10	North American Home Care Wipes Market Nonwoven Material Consumption by Category, Historical and Forecast.....	60
IIIA-11	North American Personal Care Wipes Market Sales and Units by Category, Historical and Forecast.....	65

IIIA-12	North American Personal Care Wipes Market Nonwoven Material Consumption by Category, Historical and Forecast.....	67
IIIA-13	North American Industrial/Institutional Wipes Market Sales and Units by Segment, Historical and Forecast.....	73
IIIA-14	North American Industrial/Institutional Wipes Market Nonwoven Material Consumption by Segment, Historical and Forecast	75
IIIA-15	North American Specialty Industrial Wipes Market Sales and Units by Category, Historical and Forecast.....	80
IIIA-16	North American Specialty Industrial Wipes Market Nonwoven Material Consumption by Category, Historical and Forecast.....	82
IIIA-17	North American Institutional Healthcare/Medical Wipes Market Sales and Units by Category, Historical and Forecast.....	87
IIIA-18	North American Institutional Healthcare/Medical Wipes Market Nonwoven Material Consumption by Category, Historical and Forecast.....	90

IV. North American Nonwoven Supply

IV-1	North American Capacity Annual Growth Rates by Process, 1990–2019, 5-Year Periods	94
IV-2	North American Capacity Annual Growth Rates by Process, 2011–2019.....	97
IV-3	North American Drylaid Capacity Annual Growth Rates, 2011–2019.....	99
IV-4	North American Spunlaid Capacity Annual Growth Rates, 2011–2019	99
IV-5	North American Annual Net Capacity Additions by Line Type, 2015–2019.....	100
IV-6	North American Capacity, Production, and U.S. GDP Growth Rates, Five-Year Periods, 2005–2019.....	101
IV-7	North American Production Annual Growth Rates by Process, Five-Year Periods, 2005–2019	103
IV-8	North American Capacity, Production, and U.S. GDP Growth Rates, 2013–2019	105
IV-9	North American Capacity and Production Growth Rates by Process, 2019	107
IV-10	Top 10 Countries for North American Exports Yearly Comparison, 2009, 2018, 2019	130
IV-11	Top 10 Countries Importing to North America Yearly Comparison, 2009, 2018, 2019	135