

GLOBAL MARKETS FOR SUGARS AND SWEETENERS IN PROCESSED FOODS AND BEVERAGES



FOD018E
June 2015

Shalini Shahani Dewan
Project Analyst

ISBN: 1-62296-099-8



BCC Research
49 Walnut Park, Building 2
Wellesley, MA 02481 USA
866-285-7215 (toll-free within the USA),
or (+1) 781-489-7301
www.bccresearch.com
information@bccresearch.com

TABLE OF CONTENTS

TOPIC	PAGE NO.
CHAPTER 1 INTRODUCTION	2
STUDY OBJECTIVES	2
REASONS FOR DOING THIS STUDY	2
CONTRIBUTIONS OF THE STUDY AND FOR WHOM	2
SCOPE OF THE STUDY	3
METHODOLOGY	3
INFORMATION SOURCES	3
ANALYST'S CREDENTIALS	3
RELATED BCC RESEARCH REPORTS	4
BCC RESEARCH WEBSITE	4
DISCLAIMER	5
CHAPTER 2 EXECUTIVE SUMMARY	7
<i>SUMMARY TABLE GLOBAL MARKET FOR SUGARS AND NON-SUGAR SWEETENERS, THROUGH 2019 (\$ MILLIONS)</i>	8
<i>SUMMARY FIGURE GLOBAL MARKET FOR SUGARS AND NON-SUGAR SWEETENERS, 2012-2019 (\$ MILLIONS)</i>	8
CHAPTER 3 OVERVIEW	10
DEFINITIONS	10
SUGAR	11
SUGAR TYPES, PROPERTIES AND FUNCTIONS	11
<i>TABLE 1 SOME FUNCTIONS AND ADVANTAGES OF DIFFERENT TYPES OF SUGARS</i>	11
White (Refined) Sugar	12
Properties of White Sugar	12
Flavor Enhancement	12
Texturizing, Bulking and Blending	12
Mouth Feel	12
Humectancy and Preservative Action	13
Fermentation	13
Color and Browning (Caramelization)	13
Caloric Impact	13
Brown Sugars and Molasses	13
Properties of Brown Sugar and Molasses	14
Flavor Enhancement	14
Texturizing, Bulking and Blending	14
Mouth Feel	14
Humectancy and Preservative Action	14
Fermentation	14
Color and Browning Attributes	14
Caloric Impact	15
Invert Sugar	15
Properties of Invert Sugar	15
Flavor Enhancement	15
Texturizing, Bulking and Blending	15
Mouth Feel	15

TOPIC	PAGE NO.
Humectancy and Preservative Action	16
Fermentation	16
Color and Browning Attributes	16
Caloric Impact	16
SWEETENERS OTHER THAN SUGAR OR NON-SUGAR SWEETENERS	16
NUTRITIVE/CALORIC SWEETENERS	16
Natural Nutritive/Caloric Sweeteners	17
Nutritive Sweeteners from Starch	17
Maltodextrin	17
Various Glucose Syrup/Corn Syrups (DE 30-70)	18
Corn Syrup	18
Glucose Syrup	18
Dextrose (DE 100)	19
High Fructose Corn Syrup (HFCS)	19
<i>TABLE 2 DIFFERENCES BETWEEN HFCS AND SUGARS</i>	20
Sugar Alcohols	20
Forms of Sugar Alcohol	21
Properties of Sugar Alcohol	22
<i>TABLE 3 TYPES OF SUGAR ALCOHOLS AND THEIR SWEETNESS RELATIVE TO SUCROSE</i>	22
Metabolism and Digestion of Caloric Sweeteners	23
Limitations of Caloric Sweeteners	23
Benefits of Caloric Sweeteners	24
NON-NUTRITIVE/NON-CALORIC SWEETENERS	25
Need for Non-caloric Sweeteners	25
Diabetes Mellitus	25
Reactive Hypoglycemia	25
Assistance in Weight Loss	25
Dental Care	26
Low-cost Alternative	26
Benefits of Non-nutritive Sweeteners	26
Pre-absorption Benefits	26
Post-absorption Benefits	26
Limitations of Non-sugar Sweeteners	27
Ideal Non-sugar Sweeteners	27
Types of Non-sugar Sweeteners	27
Artificial Sweeteners	27
<i>TABLE 4 HISTORY OF ARTIFICIAL SWEETENERS</i>	28
Aspartame	29
Acesulfame Potassium	29
Saccharin	29
Cyclamate	30
Sucralose	30
Neotame	30
Alitame	31
Advantame	31
Non-nutritive Natural Sweeteners	31
Stevia	32

TOPIC	PAGE NO.
Other Natural Non-nutritive Sweeteners	32
Thaumatococcus	32
Glycyrrhizin	32
Tagatose	32
Monatin	33
Luo Han Guo	33
Brazzein	33
CHAPTER 4 REGULATORY ASPECTS	35
U.S. REGULATORY ENVIRONMENT FOR SWEETENERS	35
FDA APPROVAL PROCESS	36
GRAS (GENERALLY RECOGNIZED AS SAFE)	36
TABLE 5 FDA-ESTABLISHED ACCEPTABLE DAILY INTAKE OF SELECTED ARTIFICIAL SWEETENERS	36
GRAS Notice Inventory	37
TABLE 6 LIST OF GRAS NOTICES, 2010-JULY 2014	37
Code of Federal Regulations (CFR)	39
TABLE 7 FEDERAL REGULATIONS GOVERNING SUGAR AND OTHER CALORIC SWEETENERS	40
LEGISLATION RELEVANT TO NON-CALORIC SWEETENERS	41
TABLE 8 CURRENT REGULATIONS FOR NON-CALORIC SWEETENERS	42
TABLE 9 HIS WITH INTERIM GRAS STATUS PENDING	43
TABLE 10 BANNED HIGH-INTENSITY SWEETENERS	44
LEGISLATION RELEVANT TO LABELING	45
Other Regulations Regarding Sugar and Sweeteners	46
EUROPEAN UNION REGULATORY ENVIRONMENT FOR SWEETENERS	46
LEGISLATION RELEVANT TO REDUCED-CALORIE FOODS	47
JAPANESE REGULATORY ENVIRONMENT FOR SWEETENERS	47
INDIAN REGULATORY ENVIRONMENT FOR SWEETENERS	48
TABLE 11 MAXIMUM LIMIT OF ARTIFICIAL SWEETENERS AS GIVEN BY PFA (RULE-47)	48
TABLE 12 NUTRITIVE SWEETENERS' REGULATIONS	48
TABLE 13 NON-NUTRITIVE SWEETENERS' REGULATIONS	49
TABLE 14 NATURAL NON-NUTRITIVE SWEETENERS' REGULATIONS	51
CHAPTER 5 NEW DEVELOPMENTS	54
INNOVATION AND RESEARCH	54
STRONGER DEMAND FROM CONSUMERS	54
LIFTING OF REGULATIONS	55
TABLE 15 LIST OF RECENT MAJOR NEW PRODUCT DEVELOPMENTS	55
CHAPTER 6 CONSUMPTION AND PRODUCTION OF SUGAR	60
TABLE 16 GLOBAL SUGAR PRODUCTION AND CONSUMPTION BY COUNTRY, 2013 (%)	62
FIGURE 1 GLOBAL SUGAR PRODUCTION AND CONSUMPTION BY COUNTRY, 2013 (%)	62
CHAPTER 7 GLOBAL MARKET FOR SUGAR AND NON-SUGAR SWEETENERS	64
GLOBAL SUGAR AND NON-SUGAR SWEETENERS MARKET	64

TOPIC	PAGE NO.
<i>TABLE 17 GLOBAL MARKET FOR SUGARS AND NON-SUGAR SWEETENERS , THROUGH 2019 (\$ MILLIONS)</i>	65
<i>FIGURE 2 GLOBAL MARKET FOR SUGARS AND NON-SUGAR SWEETENERS , 2012-2019 (\$ MILLIONS)</i>	65
MARKET SHARE	65
<i>TABLE 18 GLOBAL MARKET FOR SUGARS AND NON-SUGAR SWEETENERS , THROUGH 2019 (%)</i>	66
<i>FIGURE 3 GLOBAL MARKET FOR SUGARS AND NON-SUGAR SWEETENERS, 2013 (%)</i>	66
MARKET ANALYSIS FOR SUGAR	66
SUGAR SWEETENER BY TYPE	67
WHITE REFINED SUGAR	68
BROWN SUGAR	68
INVERT SUGAR	68
GLOBAL SUGAR MARKET BY TYPE	68
<i>TABLE 19 GLOBAL MARKET FOR SUGARS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	68
<i>FIGURE 4 GLOBAL MARKET FOR SUGARS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	69
MARKET SHARE	69
<i>TABLE 20 GLOBAL MARKET SHARE OF SUGAR BY TYPE, 2013 (%)</i>	69
<i>FIGURE 5 GLOBAL MARKET SHARE OF SUGAR BY TYPE, 2013 (%)</i>	69
MARKET BY REGION	70
<i>TABLE 21 GLOBAL MARKET FOR SUGAR BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	70
<i>FIGURE 6 GLOBAL MARKET FOR SUGAR BY REGION, 2012-2019 (\$ MILLIONS)</i>	71
Market Share	71
<i>TABLE 22 GLOBAL MARKET SHARE OF SUGAR, BY REGION , 2013 (%)</i>	71
<i>FIGURE 7 GLOBAL MARKET SHARE OF SUGAR, BY REGION , 2013 (%)</i>	71
North America	72
Market Overview	72
Market Revenue	73
<i>TABLE 23 NORTH AMERICAN MARKET FOR SUGARS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	73
<i>FIGURE 8 NORTH AMERICAN MARKET FOR SUGARS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	73
Europe	74
Market Overview	74
Market Revenue	75
<i>TABLE 24 EUROPEAN MARKET FOR SUGARS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	75
<i>FIGURE 9 EUROPEAN MARKET FOR SUGARS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	76
Emerging Markets	76
Market Overview	76
Market Revenue	77
<i>TABLE 25 EMERGING MARKETS FOR SUGARS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	77
<i>FIGURE 10 EMERGING MARKETS FOR SUGARS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	77
MARKET ANALYSIS FOR NON-SUGAR SWEETENERS	78
NON-SUGAR SWEETENERS BY TYPE	79
GLOBAL NON-SUGAR SWEETENERS MARKET BY TYPE	79
<i>TABLE 26 GLOBAL MARKET FOR NON-SUGAR SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	79

TOPIC	PAGE NO.
<i>FIGURE 11 GLOBAL MARKET FOR NON-SUGAR SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	79
MARKET SHARE	80
<i>TABLE 27 GLOBAL MARKET SHARE OF NON-SUGAR SWEETENERS BY TYPE, 2013 (%)</i>	80
<i>FIGURE 12 GLOBAL MARKET SHARE OF NON-SUGAR SWEETENERS BY TYPE, 2013 (%)</i>	80
CALORIC SWEETENER MARKET	81
Market by Type of Caloric Sweeteners	81
High Fructose Corn Syrup (HFCS)	81
<i>TABLE 28 FORMS OF HFCS</i>	82
Other Nutritive Sweeteners	82
Market Overview	82
Market Revenue	84
<i>TABLE 29 GLOBAL MARKET FOR CALORIC SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	84
<i>FIGURE 13 GLOBAL MARKET FOR CALORIC SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	84
Market Share	85
<i>TABLE 30 GLOBAL MARKET SHARE OF CALORIC SWEETENERS BY TYPE, 2013 (%)</i>	85
<i>FIGURE 14 GLOBAL MARKET SHARE OF CALORIC SWEETENERS BY TYPE, 2013 (%)</i>	85
Market by Region	86
<i>TABLE 31 GLOBAL MARKET FOR CALORIC SWEETENERS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	87
<i>FIGURE 15 GLOBAL MARKET FOR CALORIC SWEETENERS BY REGION, 2012-2019 (\$ MILLIONS)</i>	87
North America	87
Market Overview	88
Market Revenue	88
<i>TABLE 32 NORTH AMERICAN MARKET FOR CALORIC SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	89
<i>FIGURE 16 NORTH AMERICAN MARKET FOR CALORIC SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	89
Europe	89
Market Overview	90
Market Revenue	91
<i>TABLE 33 EUROPEAN MARKET FOR CALORIC SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	91
<i>FIGURE 17 EUROPEAN MARKET FOR CALORIC SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	91
Emerging Markets	92
Market Overview	92
Market Revenue	92
<i>TABLE 34 EMERGING MARKETS FOR CALORIC SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	93
<i>FIGURE 18 EMERGING MARKETS FOR CALORIC SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	93
HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS	93
Market by Type of High-Intensity or Non-caloric/Non-nutritive Sweeteners	94

TOPIC	PAGE NO.
Artificial Sweeteners	94
Aspartame	94
Sucralose	94
Neotame	95
Saccharin	95
Cyclamate	96
Acesulfame-K	96
Natural Sweeteners	96
Stevia	96
Others	97
Market Overview	97
Market Revenue	98
<i>TABLE 35 GLOBAL MARKET FOR HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	99
<i>FIGURE 19 GLOBAL MARKET FOR HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	99
Market Share	100
<i>TABLE 36 GLOBAL MARKET SHARE OF NON-SUGAR SWEETENERS BY TYPE, 2013 (%)</i>	100
<i>FIGURE 20 GLOBAL MARKET SHARE OF NON-SUGAR SWEETENERS BY TYPE, 2013 (%)</i>	100
Market by Region	101
<i>TABLE 37 GLOBAL MARKET OF HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	101
<i>FIGURE 21 GLOBAL MARKET OF HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY REGION, 2012-2019 (\$ MILLIONS)</i>	101
North America	102
Market Overview	102
Market Revenue	104
<i>TABLE 38 NORTH AMERICAN MARKET FOR HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	104
<i>FIGURE 22 NORTH AMERICAN MARKET FOR HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	105
Europe	105
Market Overview	105
Market Revenue	106
<i>TABLE 39 EUROPEAN MARKET FOR HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	107
<i>FIGURE 23 EUROPEAN MARKET FOR HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	107
Emerging Markets	108
Market Overview	108
Market Revenue	110
<i>TABLE 40 EMERGING MARKETS FOR HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	111

TOPIC	PAGE NO.
<i>FIGURE 24 EMERGING MARKETS FOR HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	112
SUGAR ALCOHOLS	112
Market by Type of Sugar Alcohol	112
Sorbitol	113
Xylitol	113
Mannitol	113
Maltitol	114
Other Sugar Alcohols	114
Market Overview	115
Market Revenue	116
<i>TABLE 41 GLOBAL MARKET FOR SUGAR ALCOHOLS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	117
<i>FIGURE 25 GLOBAL MARKET FOR SUGAR ALCOHOLS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	117
Market Share	117
<i>TABLE 42 GLOBAL MARKET SHARE OF SUGAR ALCOHOLS BY TYPE, 2013 (%)</i>	118
<i>FIGURE 26 GLOBAL MARKET SHARE OF SUGAR ALCOHOLS BY TYPE, 2013 (%)</i>	118
Market by Region	118
<i>TABLE 43 GLOBAL MARKET FOR SUGAR ALCOHOLS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	119
<i>FIGURE 27 GLOBAL MARKET FOR SUGAR ALCOHOLS BY REGION, 2012-2019 (\$ MILLIONS)</i>	119
North America	120
Market Overview	120
Market Revenue	120
<i>TABLE 44 NORTH AMERICAN MARKET FOR SUGAR ALCOHOLS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	121
<i>FIGURE 28 NORTH AMERICAN MARKET FOR SUGAR ALCOHOLS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	121
Europe	122
Market Overview	122
Market Revenue	123
<i>TABLE 45 EUROPEAN MARKET FOR SUGAR ALCOHOLS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	123
<i>FIGURE 29 EUROPEAN MARKET FOR SUGAR ALCOHOLS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	123
Emerging Markets	124
Market Overview	124
Market Revenue	125
<i>TABLE 46 EMERGING MARKETS FOR SUGAR ALCOHOLS BY TYPE, THROUGH 2019 (\$ MILLIONS)</i>	126
<i>FIGURE 30 EMERGING MARKETS FOR SUGAR ALCOHOLS BY TYPE, 2012-2019 (\$ MILLIONS)</i>	126
CHAPTER 8 MARKET BY APPLICATION	128
MARKET BY APPLICATIONS FOR SUGAR	128
MARKET REVENUE	128
<i>TABLE 47 GLOBAL MARKET FOR SUGAR BY APPLICATION, THROUGH 2019 (\$ MILLIONS)</i>	129

TOPIC	PAGE NO.
<i>FIGURE 31 GLOBAL MARKET FOR SUGAR BY APPLICATION, 2012-2019 (\$ MILLIONS)</i>	130
MARKET SHARE	130
<i>TABLE 48 GLOBAL MARKET SHARE OF SUGAR BY APPLICATION, 2013 (%)</i>	130
<i>FIGURE 32 GLOBAL MARKET SHARE OF SUGAR BY APPLICATION, 2013 (%)</i>	131
Beverages	131
Market Revenue	131
<i>TABLE 49 GLOBAL MARKET FOR SUGARS USED IN BEVERAGES BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	132
<i>FIGURE 33 GLOBAL MARKET FOR SUGARS USED IN BEVERAGES BY REGION, 2012-2019 (\$ MILLIONS)</i>	132
Tabletop Sugar	133
Market Revenue	133
<i>TABLE 50 GLOBAL MARKET FOR TABLETOP SUGARS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	133
<i>FIGURE 34 GLOBAL MARKET FOR TABLETOP SUGARS BY REGION, 2012-2019 (\$ MILLIONS)</i>	134
Baked Goods and Cereals	134
Market Revenue	135
<i>TABLE 51 GLOBAL MARKET FOR SUGAR USED IN BAKED GOODS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	135
<i>FIGURE 35 GLOBAL MARKET FOR SUGAR USED IN BAKED GOODS BY REGION, 2012-2019 (\$ MILLIONS)</i>	135
Candy/Confectionery	136
Market Revenue	137
<i>TABLE 52 GLOBAL MARKET FOR SUGAR USED IN CONFECTIONERY BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	137
<i>FIGURE 36 GLOBAL MARKET FOR SUGAR USED IN CONFECTIONERY BY REGION, 2012-2019 (\$ MILLIONS)</i>	137
Frozen Desserts	138
Market Revenue	138
<i>TABLE 53 GLOBAL MARKET FOR SUGAR USED IN FROZEN DESSERTS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	138
<i>FIGURE 37 GLOBAL MARKET FOR SUGAR USED IN FROZEN DESSERTS BY REGION, 2012-2019 (\$ MILLIONS)</i>	138
Canned/Bottled Foods	139
Market Revenue	139
<i>TABLE 54 GLOBAL MARKET FOR SUGARS USED IN CANNED AND BOTTLED FOODS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	140
<i>FIGURE 38 GLOBAL MARKET FOR SUGARS USED IN CANNED AND BOTTLED FOODS BY REGION, 2012-2019 (\$ MILLIONS)</i>	140
Other Foods	140
Market Revenue	141
<i>TABLE 55 GLOBAL MARKET FOR SUGARS USED IN OTHER FOODS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	141
<i>FIGURE 39 GLOBAL MARKET FOR SUGARS USED IN OTHER FOODS BY REGION, 2012-2019 (\$ MILLIONS)</i>	142
MARKET BY APPLICATIONS FOR NON-SUGAR SWEETENERS	142
CALORIC SWEETENERS BY APPLICATION	142
Market Overview	143
Market Revenue	144

TOPIC	PAGE NO.
<i>TABLE 56 GLOBAL MARKET FOR CALORIC SWEETENERS BY APPLICATION, THROUGH 2019 (\$ MILLIONS)</i>	144
<i>FIGURE 40 GLOBAL MARKET FOR CALORIC SWEETENERS BY APPLICATION, 2012-2019 (\$ MILLIONS)</i>	144
Market Share	145
<i>TABLE 57 GLOBAL MARKET SHARE OF CALORIC SWEETENERS BY APPLICATION, 2013 (%)</i>	145
<i>FIGURE 41 GLOBAL MARKET SHARE OF CALORIC SWEETENERS BY APPLICATION, 2013 (%)</i>	145
Beverages	146
Market Revenue	146
<i>TABLE 58 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN BEVERAGES BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	147
<i>FIGURE 42 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN BEVERAGES BY REGION, 2012-2019 (\$ MILLIONS)</i>	147
Candy/Confectionery	148
Market Revenue	148
<i>TABLE 59 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN CONFECTIONARY BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	148
<i>FIGURE 43 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN CONFECTIONARY BY REGION, 2012-2019 (\$ MILLIONS)</i>	149
Baked Goods and Cereals	149
Market Revenue	150
<i>TABLE 60 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN BAKED PRODUCTS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	150
<i>FIGURE 44 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN BAKED PRODUCTS BY REGION, 2012-2019 (\$ MILLIONS)</i>	150
Frozen Desserts	151
Market Revenue	151
<i>TABLE 61 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN FROZEN DESSERTS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	152
<i>FIGURE 45 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN FROZEN DESSERTS BY REGION, 2012-2019 (\$ MILLIONS)</i>	152
Other Foods	152
Market Revenue	153
<i>TABLE 62 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN OTHER PRODUCTS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	153
<i>FIGURE 46 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN OTHER PRODUCTS BY REGION, 2012-2019 (\$ MILLIONS)</i>	154
MARKET BY APPLICATION OF NON-CALORIC/ HIGH-INTENSITY SWEETENERS	154
Market Overview	154
Market Revenue	156
<i>TABLE 63 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS BY APPLICATION, THROUGH 2019 (\$ MILLIONS)</i>	157
<i>FIGURE 47 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS BY APPLICATION, 2012-2019 (\$ MILLIONS)</i>	157
Market Share	157

TOPIC	PAGE NO.
<i>TABLE 64 GLOBAL MARKET SHARE OF NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS BY APPLICATION, 2013 (%)</i>	158
<i>FIGURE 48 GLOBAL MARKET SHARE OF NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS BY APPLICATION, 2013 (%)</i>	158
Beverages	158
Market Revenue	159
<i>TABLE 65 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN BEVERAGES BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	159
<i>FIGURE 49 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN BEVERAGES BY REGION, 2012-2019 (\$ MILLIONS)</i>	159
Candy/Confectionary	160
Market Revenue	160
<i>TABLE 66 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH INTENSITY SWEETENERS USED IN CONFECTIONERY BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	161
<i>FIGURE 50 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN CONFECTIONERY BY REGION, 2012-2019 (\$ MILLIONS)</i>	161
Tabletop Sweeteners	162
Market Revenue	163
<i>TABLE 67 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN TABLETOP SWEETENERS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	163
<i>FIGURE 51 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN TABLETOP SWEETENERS BY REGION, 2012-2019 (\$ MILLIONS)</i>	164
Frozen Desserts	164
Market Revenue	164
<i>TABLE 68 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN FROZEN DESSERTS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	164
<i>FIGURE 52 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN FROZEN DESSERTS BY REGION, 2012-2019 (\$ MILLIONS)</i>	165
Other Foods	165
Market Revenue	166
<i>TABLE 69 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN OTHER NON-SUGAR PRODUCTS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	166
<i>FIGURE 53 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN OTHER NON-SUGAR PRODUCTS BY REGION, 2012-2019 (\$ MILLIONS)</i>	166
MARKET BY APPLICATION OF SUGAR ALCOHOLS	167
Market Overview	167
Market Revenue	168
<i>TABLE 70 GLOBAL MARKET FOR SUGAR ALCOHOLS BY APPLICATION, THROUGH 2019 (\$ MILLIONS)</i>	168

TOPIC	PAGE NO.
<i>FIGURE 54 GLOBAL MARKET FOR SUGAR ALCOHOLS BY APPLICATION, 2012-2019 (\$ MILLIONS)</i>	168
Market Share	169
<i>TABLE 71 GLOBAL MARKET SHARE OF SUGAR ALCOHOL BY APPLICATION, 2013 (%)</i>	169
<i>FIGURE 55 GLOBAL MARKET SHARE OF SUGAR ALCOHOL BY APPLICATION, 2013 (%)</i>	169
Beverages	170
Market Revenue	170
<i>TABLE 72 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN BEVERAGES BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	171
<i>FIGURE 56 GLOBAL MARKET OF SUGAR ALCOHOLS USED IN BEVERAGES BY REGION, 2012-2019 (\$ MILLIONS)</i>	171
Candy/Confectionery	171
Market Revenue	172
<i>TABLE 73 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN CONFECTIONARY PRODUCTS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	172
<i>FIGURE 57 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN CONFECTIONARY PRODUCTS BY REGION, 2012-2019 (\$ MILLIONS)</i>	173
Baked Goods and Cereals	173
Market Revenue	173
<i>TABLE 74 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN BAKED PRODUCTS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	174
<i>FIGURE 58 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN BAKED PRODUCTS BY REGION, 2012-2019 (\$ MILLIONS)</i>	174
Frozen Desserts	174
Market Revenue	175
<i>TABLE 75 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN FROZEN DESSERTS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	175
<i>FIGURE 59 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN FROZEN DESSERTS BY REGION, 2012-2019 (\$ MILLIONS)</i>	176
Other Foods	176
Market Revenue	176
<i>TABLE 76 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN OTHER PRODUCTS BY REGION, THROUGH 2019 (\$ MILLIONS)</i>	177
<i>FIGURE 60 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN OTHER PRODUCTS BY REGION, 2012-2019 (\$ MILLIONS)</i>	177
CHAPTER 9 PATENT ANALYSIS	179
PATENTS BY YEAR	179
<i>TABLE 77 NUMBER OF PATENTS BY YEAR, 2010-2014</i>	180
<i>FIGURE 61 NUMBER OF PATENTS BY YEAR, 2010-2014</i>	180
PATENTS BY TYPE	180
<i>TABLE 78 NUMBER OF PATENTS BY TYPE, 2010-2014</i>	180
<i>FIGURE 62 NUMBER OF PATENTS BY TYPE, 2010-2014</i>	181
PATENTS BY COMPANY	181
CALORIC SWEETENERS	181
<i>TABLE 79 NUMBER OF PATENTS FOR CALORIC SWEETENERS BY COMPANY, 2010-2014</i>	181
<i>TABLE 80 NUMBER OF PATENTS FOR SUGAR ALCOHOLS BY TYPE, 2010-2014</i>	182
NON-CALORIC SWEETENERS	182

TOPIC	PAGE NO.
<i>TABLE 81 NUMBER OF PATENTS FOR NON-CALORIC SWEETENERS BY COMPANY, 2010-2014</i>	182
<i>TABLE 82 NUMBER OF PATENTS FOR NON-CALORIC SWEETENERS BY TYPE, 2010-2014</i>	183
BLEND OF CALORIC AND NON-CALORIC SWEETENERS	183
<i>TABLE 83 NUMBER OF PATENTS FOR A BLEND OF CALORIC AND NON-CALORIC SWEETENERS BY COMPANY, 2010-2014</i>	183
<i>TABLE 84 NUMBER OF PATENTS FOR A BLEND OF CALORIC AND NON-CALORIC SWEETENERS BY TYPE, 2010-2014</i>	184
PATENTS BY COUNTRY	184
CALORIC SWEETENERS	184
<i>TABLE 85 NUMBER OF PATENTS FOR CALORIC SWEETENERS BY COUNTRY, 2010-2014</i>	184
<i>TABLE 86 NUMBER OF PATENTS FOR CALORIC SWEETENERS BY COUNTRY, 2010-2014 (NUMBER/%)</i>	184
<i>FIGURE 63 NUMBER OF PATENTS FOR CALORIC SWEETENERS BY COUNTRY, 2010-2014 (%)</i>	185
NON-CALORIC SWEETENERS	185
<i>TABLE 87 NUMBER OF PATENTS FOR NON-CALORIC SWEETENERS BY COUNTRY, 2010-2014</i>	185
<i>TABLE 88 NUMBER OF PATENTS FOR NON-CALORIC SWEETENERS BY COUNTRY, 2010-2014 (NUMBER/%)</i>	186
<i>FIGURE 64 NUMBER OF PATENTS FOR NON-CALORIC SWEETENERS BY COUNTRY, 2010-2014 (%)</i>	186
BLEND OF CALORIC AND NON-CALORIC SWEETENERS	186
<i>TABLE 89 NUMBER OF PATENTS FOR A BLEND OF CALORIC AND NON-CALORIC SWEETENERS BY COUNTRY, 2010-2014</i>	187
<i>TABLE 90 NUMBER OF PATENTS FOR A BLEND OF CALORIC AND NON-CALORIC SWEETENERS BY COUNTRY, 2010-2014 (NUMBER/%)</i>	187
<i>FIGURE 65 NUMBER OF PATENTS FOR A BLEND OF CALORIC AND NON-CALORIC SWEETENERS BY COUNTRY, 2010-2014 (%)</i>	187
PATENTS BY ASSIGNEE	187
CALORIC SWEETENERS	188
<i>TABLE 91 NUMBER OF PATENTS FOR CALORIC SWEETENERS BY ASSIGNEE, 2010-2014</i>	188
<i>FIGURE 66 NUMBER OF PATENTS FOR CALORIC SWEETENERS BY ASSIGNEE, 2010-2014</i>	188
NON-CALORIC SWEETENERS	188
<i>TABLE 92 NUMBER OF PATENTS FOR NON-CALORIC SWEETENERS BY ASSIGNEE, 2010-2014</i>	188
<i>FIGURE 67 NUMBER OF PATENTS FOR NON-CALORIC SWEETENERS BY ASSIGNEE, 2010-2014</i>	189
BLEND OF CALORIC AND NON-CALORIC SWEETENERS	189
<i>TABLE 93 NUMBER OF PATENTS FOR A BLEND OF CALORIC AND NON-CALORIC SWEETENERS BY ASSIGNEE, 2010-2014</i>	189
<i>FIGURE 68 NUMBER OF PATENTS FOR A BLEND OF CALORIC AND NON-CALORIC SWEETENERS BY ASSIGNEE, 2010-2014</i>	189
CHAPTER 10 CURRENT SITUATION AND MARKET PROSPECTS	192
SUGAR	192
MARKET DRIVERS	192

TOPIC	PAGE NO.
Functional Properties	192
Nutritional Benefits	193
NON-SUGAR SWEETENERS	194
MARKET DRIVERS	194
Obesity	194
Increasing Number of People with Diabetes	195
Increasing Health Awareness	195
Dental Health Gain	195
Materials of Natural Origin and Calorie Control	195
Securing Regulatory Approvals	196
Multiple Sweetener Blends	196
Developing an Attractive Range of Foods and Drinks Containing the New Materials	197
FUTURE PROSPECTS OF THE MARKET	197
CHAPTER 11 COMPANY PROFILES	200
A & Z FOOD ADDITIVES CO. LTD.	200
AJINOMOTO CO. INC.	200
ANHUI RUISEN BIO-TECH CO. LTD	201
ARCHER DANIELS MIDLAND COMPANY (ADM)	201
ATLANTIC CHEMICALS TRADING GMBH (ACT)	202
AUSTRALIA INC.	202
BECKMANN-KENKO GMBH	203
BEIJING FORBEST CHEMICAL CO. LTD.	203
CARGILL	203
CELANESE CORP.	204
COMMERCIAL BRIDGE INDUSTRY LTD.	204
CUMBERLAND PACKING CORP.	205
DANISCO A/S	205
FOODING GROUP LIMITED	206
FRAKEN BIOCHEM CO., LTD	206
GIRI HEALTH PRODUCT	207
GLG LIFE TECH CORP.	207
GOLDEN TIME ENTERPRISE (JIANGSU) CO. LTD.	208
HERMES SWEETENERS LTD	208
INGREDION INCORPORATED	208
JIAYE (FUZHOU) IMPORT & EXPORT CO. LTD.	209
JINTIAN ENTERPRISES (NANJING) CO. LTD.	209
JK SUCRALOSE INC.	210
KING WAY CORP.	210
MCNEIL NUTRITIONALS LLC (U.S.)	211
MERISANT WORLDWIDE INC.	211
NUTRASWEET COMPANY	212
PURECIRCLE	213
ROQUETTE	213
SANXINYUAN FOOD INDUSTRY CORP. LIMITED	214
SHANDONG TIANLI PHARMACEUTICAL CO. LTD.	214
SHANDONG XIANGCHI JIANYUAN BIO-TECH CO. LTD.	215

TOPIC	PAGE NO.
SPHERIX INC.	215
TATE & LYLE	216
TIANJIN HAITONG CHEMICAL INDUSTRIAL CO., LTD.	216
TNN DEVELOPMENT LIMITED	217
WHOLE EARTH SWEETENER CO. LLC	217
CHAPTER 12 APPENDIX: ABBREVIATIONS	219

LIST OF TABLES

TABLE HEADING	PAGE NO.
SUMMARY TABLE GLOBAL MARKET FOR SUGARS AND NON-SUGAR SWEETENERS, THROUGH 2019 (\$ MILLIONS)	8
TABLE 1 SOME FUNCTIONS AND ADVANTAGES OF DIFFERENT TYPES OF SUGARS	11
TABLE 2 DIFFERENCES BETWEEN HFCS AND SUGARS	20
TABLE 3 TYPES OF SUGAR ALCOHOLS AND THEIR SWEETNESS RELATIVE TO SUCROSE	22
TABLE 4 HISTORY OF ARTIFICIAL SWEETENERS	28
TABLE 5 FDA-ESTABLISHED ACCEPTABLE DAILY INTAKE OF SELECTED ARTIFICIAL SWEETENERS	36
TABLE 6 LIST OF GRAS NOTICES, 2010-JULY 2014	37
TABLE 7 FEDERAL REGULATIONS GOVERNING SUGAR AND OTHER CALORIC SWEETENERS	40
TABLE 8 CURRENT REGULATIONS FOR NON-CALORIC SWEETENERS	42
TABLE 9 HIS WITH INTERIM GRAS STATUS PENDING	43
TABLE 10 BANNED HIGH-INTENSITY SWEETENERS	44
TABLE 11 MAXIMUM LIMIT OF ARTIFICIAL SWEETENERS AS GIVEN BY PFA (RULE-47)	48
TABLE 12 NUTRITIVE SWEETENERS' REGULATIONS	48
TABLE 13 NON-NUTRITIVE SWEETENERS' REGULATIONS	49
TABLE 14 NATURAL NON-NUTRITIVE SWEETENERS' REGULATIONS	51
TABLE 15 LIST OF RECENT MAJOR NEW PRODUCT DEVELOPMENTS	55
TABLE 16 GLOBAL SUGAR PRODUCTION AND CONSUMPTION BY COUNTRY, 2013 (%)	62
TABLE 17 GLOBAL MARKET FOR SUGARS AND NON-SUGAR SWEETENERS , THROUGH 2019 (\$ MILLIONS)	65
TABLE 18 GLOBAL MARKET FOR SUGARS AND NON-SUGAR SWEETENERS , THROUGH 2019 (%)	66
TABLE 19 GLOBAL MARKET FOR SUGARS BY TYPE, THROUGH 2019 (\$ MILLIONS)	68
TABLE 20 GLOBAL MARKET SHARE OF SUGAR BY TYPE, 2013 (%)	69
TABLE 21 GLOBAL MARKET FOR SUGAR BY REGION, THROUGH 2019 (\$ MILLIONS)	70
TABLE 22 GLOBAL MARKET SHARE OF SUGAR, BY REGION , 2013 (%)	71
TABLE 23 NORTH AMERICAN MARKET FOR SUGARS BY TYPE, THROUGH 2019 (\$ MILLIONS)	73
TABLE 24 EUROPEAN MARKET FOR SUGARS BY TYPE, THROUGH 2019 (\$ MILLIONS)	75
TABLE 25 EMERGING MARKETS FOR SUGARS BY TYPE, THROUGH 2019 (\$ MILLIONS)	77
TABLE 26 GLOBAL MARKET FOR NON-SUGAR SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)	79
TABLE 27 GLOBAL MARKET SHARE OF NON-SUGAR SWEETENERS BY TYPE, 2013 (%)	80
TABLE 28 FORMS OF HFCS	82
TABLE 29 GLOBAL MARKET FOR CALORIC SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)	84
TABLE 30 GLOBAL MARKET SHARE OF CALORIC SWEETENERS BY TYPE, 2013 (%)	85
TABLE 31 GLOBAL MARKET FOR CALORIC SWEETENERS BY REGION, THROUGH 2019 (\$ MILLIONS)	87
TABLE 32 NORTH AMERICAN MARKET FOR CALORIC SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)	89
TABLE 33 EUROPEAN MARKET FOR CALORIC SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)	91
TABLE 34 EMERGING MARKETS FOR CALORIC SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)	93

TABLE HEADING	PAGE NO.
TABLE 35 GLOBAL MARKET FOR HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)	99
TABLE 36 GLOBAL MARKET SHARE OF NON-SUGAR SWEETENERS BY TYPE, 2013 (%)	100
TABLE 37 GLOBAL MARKET OF HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY REGION, THROUGH 2019 (\$ MILLIONS)	101
TABLE 38 NORTH AMERICAN MARKET FOR HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)	104
TABLE 39 EUROPEAN MARKET FOR HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)	107
TABLE 40 EMERGING MARKETS FOR HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY TYPE, THROUGH 2019 (\$ MILLIONS)	111
TABLE 41 GLOBAL MARKET FOR SUGAR ALCOHOLS BY TYPE, THROUGH 2019 (\$ MILLIONS)	117
TABLE 42 GLOBAL MARKET SHARE OF SUGAR ALCOHOLS BY TYPE, 2013 (%)	118
TABLE 43 GLOBAL MARKET FOR SUGAR ALCOHOLS BY REGION, THROUGH 2019 (\$ MILLIONS)	119
TABLE 44 NORTH AMERICAN MARKET FOR SUGAR ALCOHOLS BY TYPE, THROUGH 2019 (\$ MILLIONS)	121
TABLE 45 EUROPEAN MARKET FOR SUGAR ALCOHOLS BY TYPE, THROUGH 2019 (\$ MILLIONS)	123
TABLE 46 EMERGING MARKETS FOR SUGAR ALCOHOLS BY TYPE, THROUGH 2019 (\$ MILLIONS)	126
TABLE 47 GLOBAL MARKET FOR SUGAR BY APPLICATION, THROUGH 2019 (\$ MILLIONS)	129
TABLE 48 GLOBAL MARKET SHARE OF SUGAR BY APPLICATION, 2013 (%)	130
TABLE 49 GLOBAL MARKET FOR SUGARS USED IN BEVERAGES BY REGION, THROUGH 2019 (\$ MILLIONS)	132
TABLE 50 GLOBAL MARKET FOR TABLETOP SUGARS BY REGION, THROUGH 2019 (\$ MILLIONS)	133
TABLE 51 GLOBAL MARKET FOR SUGAR USED IN BAKED GOODS BY REGION, THROUGH 2019 (\$ MILLIONS)	135
TABLE 52 GLOBAL MARKET FOR SUGAR USED IN CONFECTIONERY BY REGION, THROUGH 2019 (\$ MILLIONS)	137
TABLE 53 GLOBAL MARKET FOR SUGAR USED IN FROZEN DESSERTS BY REGION, THROUGH 2019 (\$ MILLIONS)	138
TABLE 54 GLOBAL MARKET FOR SUGARS USED IN CANNED AND BOTTLED FOODS BY REGION, THROUGH 2019 (\$ MILLIONS)	140
TABLE 55 GLOBAL MARKET FOR SUGARS USED IN OTHER FOODS BY REGION, THROUGH 2019 (\$ MILLIONS)	141
TABLE 56 GLOBAL MARKET FOR CALORIC SWEETENERS BY APPLICATION, THROUGH 2019 (\$ MILLIONS)	144
TABLE 57 GLOBAL MARKET SHARE OF CALORIC SWEETENERS BY APPLICATION, 2013 (%)	145
TABLE 58 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN BEVERAGES BY REGION, THROUGH 2019 (\$ MILLIONS)	147
TABLE 59 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN CONFECTIONARY BY REGION, THROUGH 2019 (\$ MILLIONS)	148
TABLE 60 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN BAKED PRODUCTS BY REGION, THROUGH 2019 (\$ MILLIONS)	150
TABLE 61 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN FROZEN DESSERTS BY REGION, THROUGH 2019 (\$ MILLIONS)	152

TABLE HEADING	PAGE NO.
TABLE 62 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN OTHER PRODUCTS BY REGION, THROUGH 2019 (\$ MILLIONS)	153
TABLE 63 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS BY APPLICATION, THROUGH 2019 (\$ MILLIONS)	157
TABLE 64 GLOBAL MARKET SHARE OF NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS BY APPLICATION, 2013 (%)	158
TABLE 65 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN BEVERAGES BY REGION, THROUGH 2019 (\$ MILLIONS)	159
TABLE 66 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH INTENSITY SWEETENERS USED IN CONFECTIONERY BY REGION, THROUGH 2019 (\$ MILLIONS)	161
TABLE 67 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN TABLETOP SWEETENERS BY REGION, THROUGH 2019 (\$ MILLIONS)	163
TABLE 68 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN FROZEN DESSERTS BY REGION, THROUGH 2019 (\$ MILLIONS)	164
TABLE 69 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN OTHER NON-SUGAR PRODUCTS BY REGION, THROUGH 2019 (\$ MILLIONS)	166
TABLE 70 GLOBAL MARKET FOR SUGAR ALCOHOLS BY APPLICATION, THROUGH 2019 (\$ MILLIONS)	168
TABLE 71 GLOBAL MARKET SHARE OF SUGAR ALCOHOL BY APPLICATION, 2013 (%)	169
TABLE 72 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN BEVERAGES BY REGION, THROUGH 2019 (\$ MILLIONS)	171
TABLE 73 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN CONFECTIONARY PRODUCTS BY REGION, THROUGH 2019 (\$ MILLIONS)	172
TABLE 74 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN BAKED PRODUCTS BY REGION, THROUGH 2019 (\$ MILLIONS)	174
TABLE 75 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN FROZEN DESSERTS BY REGION, THROUGH 2019 (\$ MILLIONS)	175
TABLE 76 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN OTHER PRODUCTS BY REGION, THROUGH 2019 (\$ MILLIONS)	177
TABLE 77 NUMBER OF PATENTS BY YEAR, 2010-2014	180
TABLE 78 NUMBER OF PATENTS BY TYPE, 2010-2014	180
TABLE 79 NUMBER OF PATENTS FOR CALORIC SWEETENERS BY COMPANY, 2010-2014	181
TABLE 80 NUMBER OF PATENTS FOR SUGAR ALCOHOLS BY TYPE, 2010-2014	182
TABLE 81 NUMBER OF PATENTS FOR NON-CALORIC SWEETENERS BY COMPANY, 2010-2014	182
TABLE 82 NUMBER OF PATENTS FOR NON-CALORIC SWEETENERS BY TYPE, 2010-2014	183
TABLE 83 NUMBER OF PATENTS FOR A BLEND OF CALORIC AND NON-CALORIC SWEETENERS BY COMPANY, 2010-2014	183
TABLE 84 NUMBER OF PATENTS FOR A BLEND OF CALORIC AND NON-CALORIC SWEETENERS BY TYPE, 2010-2014	184
TABLE 85 NUMBER OF PATENTS FOR CALORIC SWEETENERS BY COUNTRY, 2010-2014	184
TABLE 86 NUMBER OF PATENTS FOR CALORIC SWEETENERS BY COUNTRY, 2010-2014 (NUMBER/%)	184

TABLE HEADING	PAGE NO.
TABLE 87 NUMBER OF PATENTS FOR NON-CALORIC SWEETENERS BY COUNTRY, 2010-2014	185
TABLE 88 NUMBER OF PATENTS FOR NON-CALORIC SWEETENERS BY COUNTRY, 2010-2014 (NUMBER/%)	186
TABLE 89 NUMBER OF PATENTS FOR A BLEND OF CALORIC AND NON-CALORIC SWEETENERS BY COUNTRY, 2010-2014	187
TABLE 90 NUMBER OF PATENTS FOR A BLEND OF CALORIC AND NON-CALORIC SWEETENERS BY COUNTRY, 2010-2014 (NUMBER/%)	187
TABLE 91 NUMBER OF PATENTS FOR CALORIC SWEETENERS BY ASSIGNEE, 2010-2014	188
TABLE 92 NUMBER OF PATENTS FOR NON-CALORIC SWEETENERS BY ASSIGNEE, 2010-2014	188
TABLE 93 NUMBER OF PATENTS FOR A BLEND OF CALORIC AND NON-CALORIC SWEETENERS BY ASSIGNEE, 2010-2014	189

LIST OF FIGURES

FIGURE TITLE	PAGE NO.
SUMMARY FIGURE GLOBAL MARKET FOR SUGARS AND NON-SUGAR SWEETENERS, 2012-2019 (\$ MILLIONS)	8
FIGURE 1 GLOBAL SUGAR PRODUCTION AND CONSUMPTION BY COUNTRY, 2013 (%)	62
FIGURE 2 GLOBAL MARKET FOR SUGARS AND NON-SUGAR SWEETENERS , 2012-2019 (\$ MILLIONS)	65
FIGURE 3 GLOBAL MARKET FOR SUGARS AND NON-SUGAR SWEETENERS, 2013 (%)	66
FIGURE 4 GLOBAL MARKET FOR SUGARS BY TYPE, 2012-2019 (\$ MILLIONS)	69
FIGURE 5 GLOBAL MARKET SHARE OF SUGAR BY TYPE, 2013 (%)	69
FIGURE 6 GLOBAL MARKET FOR SUGAR BY REGION, 2012-2019 (\$ MILLIONS)	71
FIGURE 7 GLOBAL MARKET SHARE OF SUGAR, BY REGION , 2013 (%)	71
FIGURE 8 NORTH AMERICAN MARKET FOR SUGARS BY TYPE, 2012-2019 (\$ MILLIONS)	73
FIGURE 9 EUROPEAN MARKET FOR SUGARS BY TYPE, 2012-2019 (\$ MILLIONS)	76
FIGURE 10 EMERGING MARKETS FOR SUGARS BY TYPE, 2012-2019 (\$ MILLIONS)	77
FIGURE 11 GLOBAL MARKET FOR NON-SUGAR SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)	79
FIGURE 12 GLOBAL MARKET SHARE OF NON-SUGAR SWEETENERS BY TYPE, 2013 (%)	80
FIGURE 13 GLOBAL MARKET FOR CALORIC SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)	84
FIGURE 14 GLOBAL MARKET SHARE OF CALORIC SWEETENERS BY TYPE, 2013 (%)	85
FIGURE 15 GLOBAL MARKET FOR CALORIC SWEETENERS BY REGION, 2012-2019 (\$ MILLIONS)	87
FIGURE 16 NORTH AMERICAN MARKET FOR CALORIC SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)	89
FIGURE 17 EUROPEAN MARKET FOR CALORIC SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)	91
FIGURE 18 EMERGING MARKETS FOR CALORIC SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)	93
FIGURE 19 GLOBAL MARKET FOR HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)	99
FIGURE 20 GLOBAL MARKET SHARE OF NON-SUGAR SWEETENERS BY TYPE, 2013 (%)	100
FIGURE 21 GLOBAL MARKET OF HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY REGION, 2012-2019 (\$ MILLIONS)	101
FIGURE 22 NORTH AMERICAN MARKET FOR HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)	105
FIGURE 23 EUROPEAN MARKET FOR HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)	107
FIGURE 24 EMERGING MARKETS FOR HIGH-INTENSITY OR NON-CALORIC/NON-NUTRITIVE SWEETENERS BY TYPE, 2012-2019 (\$ MILLIONS)	112
FIGURE 25 GLOBAL MARKET FOR SUGAR ALCOHOLS BY TYPE, 2012-2019 (\$ MILLIONS)	117
FIGURE 26 GLOBAL MARKET SHARE OF SUGAR ALCOHOLS BY TYPE, 2013 (%)	118
FIGURE 27 GLOBAL MARKET FOR SUGAR ALCOHOLS BY REGION, 2012-2019 (\$ MILLIONS)	119
FIGURE 28 NORTH AMERICAN MARKET FOR SUGAR ALCOHOLS BY TYPE, 2012-2019 (\$ MILLIONS)	121
FIGURE 29 EUROPEAN MARKET FOR SUGAR ALCOHOLS BY TYPE, 2012-2019 (\$ MILLIONS)	123
FIGURE 30 EMERGING MARKETS FOR SUGAR ALCOHOLS BY TYPE, 2012-2019 (\$ MILLIONS)	126
FIGURE 31 GLOBAL MARKET FOR SUGAR BY APPLICATION, 2012-2019 (\$ MILLIONS)	130

FIGURE TITLE	PAGE NO.
FIGURE 32 GLOBAL MARKET SHARE OF SUGAR BY APPLICATION, 2013 (%)	131
FIGURE 33 GLOBAL MARKET FOR SUGARS USED IN BEVERAGES BY REGION, 2012-2019 (\$ MILLIONS)	132
FIGURE 34 GLOBAL MARKET FOR TABLETOP SUGARS BY REGION, 2012-2019 (\$ MILLIONS)	134
FIGURE 35 GLOBAL MARKET FOR SUGAR USED IN BAKED GOODS BY REGION, 2012-2019 (\$ MILLIONS)	135
FIGURE 36 GLOBAL MARKET FOR SUGAR USED IN CONFECTIONERY BY REGION, 2012-2019 (\$ MILLIONS)	137
FIGURE 37 GLOBAL MARKET FOR SUGAR USED IN FROZEN DESSERTS BY REGION, 2012-2019 (\$ MILLIONS)	138
FIGURE 38 GLOBAL MARKET FOR SUGARS USED IN CANNED AND BOTTLED FOODS BY REGION, 2012-2019 (\$ MILLIONS)	140
FIGURE 39 GLOBAL MARKET FOR SUGARS USED IN OTHER FOODS BY REGION, 2012-2019 (\$ MILLIONS)	142
FIGURE 40 GLOBAL MARKET FOR CALORIC SWEETENERS BY APPLICATION, 2012-2019 (\$ MILLIONS)	144
FIGURE 41 GLOBAL MARKET SHARE OF CALORIC SWEETENERS BY APPLICATION, 2013 (%)	145
FIGURE 42 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN BEVERAGES BY REGION, 2012-2019 (\$ MILLIONS)	147
FIGURE 43 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN CONFECTIONARY BY REGION, 2012-2019 (\$ MILLIONS)	149
FIGURE 44 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN BAKED PRODUCTS BY REGION, 2012-2019 (\$ MILLIONS)	150
FIGURE 45 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN FROZEN DESSERTS BY REGION, 2012-2019 (\$ MILLIONS)	152
FIGURE 46 GLOBAL MARKET FOR CALORIC SWEETENERS USED IN OTHER PRODUCTS BY REGION, 2012-2019 (\$ MILLIONS)	154
FIGURE 47 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS BY APPLICATION, 2012-2019 (\$ MILLIONS)	157
FIGURE 48 GLOBAL MARKET SHARE OF NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS BY APPLICATION, 2013 (%)	158
FIGURE 49 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN BEVERAGES BY REGION, 2012-2019 (\$ MILLIONS)	159
FIGURE 50 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN CONFECTIONERY BY REGION, 2012-2019 (\$ MILLIONS)	161
FIGURE 51 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN TABLETOP SWEETENERS BY REGION, 2012-2019 (\$ MILLIONS)	164
FIGURE 52 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN FROZEN DESSERTS BY REGION, 2012-2019 (\$ MILLIONS)	165
FIGURE 53 GLOBAL MARKET FOR NON-CALORIC SWEETENERS/NON-NUTRITIVE SWEETENERS/HIGH-INTENSITY SWEETENERS USED IN OTHER NON-SUGAR PRODUCTS BY REGION, 2012-2019 (\$ MILLIONS)	166
FIGURE 54 GLOBAL MARKET FOR SUGAR ALCOHOLS BY APPLICATION, 2012-2019 (\$ MILLIONS)	168
FIGURE 55 GLOBAL MARKET SHARE OF SUGAR ALCOHOL BY APPLICATION, 2013 (%)	169

FIGURE TITLE	PAGE NO.
FIGURE 56 GLOBAL MARKET OF SUGAR ALCOHOLS USED IN BEVERAGES BY REGION, 2012-2019 (\$ MILLIONS)	171
FIGURE 57 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN CONFECTIONARY PRODUCTS BY REGION, 2012-2019 (\$ MILLIONS)	173
FIGURE 58 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN BAKED PRODUCTS BY REGION, 2012-2019 (\$ MILLIONS)	174
FIGURE 59 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN FROZEN DESSERTS BY REGION, 2012-2019 (\$ MILLIONS)	176
FIGURE 60 GLOBAL MARKET FOR SUGAR ALCOHOLS USED IN OTHER PRODUCTS BY REGION, 2012-2019 (\$ MILLIONS)	177
FIGURE 61 NUMBER OF PATENTS BY YEAR, 2010-2014	180
FIGURE 62 NUMBER OF PATENTS BY TYPE, 2010-2014	181
FIGURE 63 NUMBER OF PATENTS FOR CALORIC SWEETENERS BY COUNTRY, 2010-2014 (%)	185
FIGURE 64 NUMBER OF PATENTS FOR NON-CALORIC SWEETENERS BY COUNTRY, 2010-2014 (%)	186
FIGURE 65 NUMBER OF PATENTS FOR A BLEND OF CALORIC AND NON-CALORIC SWEETENERS BY COUNTRY, 2010-2014 (%)	187
FIGURE 66 NUMBER OF PATENTS FOR CALORIC SWEETENERS BY ASSIGNEE, 2010-2014	188
FIGURE 67 NUMBER OF PATENTS FOR NON-CALORIC SWEETENERS BY ASSIGNEE, 2010-2014	189
FIGURE 68 NUMBER OF PATENTS FOR A BLEND OF CALORIC AND NON-CALORIC SWEETENERS BY ASSIGNEE, 2010-2014	189