

MARKETS AND PROFITABILITY

Market Analytics: Vinyls - 2022

December 2022



This Report was prepared by NexantECA, the Energy and Chemicals Advisory company ("NexantECA"). Except where specifically stated in this Report, the information contained herein is prepared on the basis of information that is publicly available and, contains no confidential third party technical information to the best knowledge and belief of NexantECA. The information has not been independently verified or otherwise examined to determine its accuracy, completeness or financial feasibility. Neither NexantECA, Subscriber nor any person acting on behalf of either shall have any liabilities for any loss or damage arising from or connected to the use of any information contained in this Report. NexantECA does not represent or warrant that any assumed conditions will come to pass.

The Report is for Subscriber's internal use only and shall be kept strictly confidential. The Report should not be otherwise reproduced, distributed or used without first obtaining prior written consent by NexantECA. Each Subscriber agrees to use reasonable effort to protect the confidential nature of the Report.

Copyright © by NexantECA (BVI) Ltd. 2022. All rights reserved.



Contents

1	Executive Summary	1
1.1	Introduction.....	1
1.2	Vinyl Market Overview	4
2	The Vinyls Industry	9
2.1	The Supply Chain.....	9
2.2	Industry Integration.....	11
2.3	The Use of Vinyls	13
2.4	Sustainability	14
2.5	Market Coverage.....	15
3	Ethylene Dichloride (EDC).....	16
3.1	Key Developments	16
3.2	Demand.....	16
3.3	Supply	18
3.3.1	Competitive Landscape.....	18
3.3.2	Capacity	21
3.3.2.1	North America	21
3.3.2.2	South America.....	21
3.3.2.3	Western Europe	22
3.3.2.4	Central Europe	22
3.3.2.5	Eastern Europe	23
3.3.2.6	Middle East	23
3.3.2.7	Africa	23
3.3.2.8	Asia Pacific.....	24
3.4	Supply, Demand and Trade	28
4	Vinyl Chloride Monomer (VCM)	31
4.1	Key Developments	31
4.2	Demand.....	31
4.3	Supply	33
4.3.1	Competitive Landscape.....	33
4.3.2	Capacity	36
4.3.2.1	North America	36
4.3.2.2	South America.....	36
4.3.2.3	Western Europe	37
4.3.2.4	Central Europe	37
4.3.2.5	Eastern Europe	37
4.3.2.6	Middle East	38
4.3.2.7	Africa	38
4.3.2.8	Asia Pacific.....	38
4.4	Supply, Demand and Trade	43
5	Polyvinyl Chloride (PVC)	45



5.1	Global	45
5.1.1	Key Developments	45
5.1.2	Demand	45
5.1.3	Supply	49
5.1.4	Supply, Demand and Trade	52
5.2	North America	54
5.2.1	Key Developments	54
5.2.2	Demand	54
5.2.3	Supply	56
5.2.4	Supply, Demand and Trade	57
5.3	South America	60
5.3.1	Key Development	60
5.3.2	Demand	60
5.3.3	Supply	62
5.3.4	Supply, Demand and Trade	63
5.4	Western Europe	65
5.4.1	Key Developments	65
5.4.2	Demand	65
5.4.3	Supply	68
5.4.4	Supply, Demand and Trade	68
5.5	Central Europe	71
5.5.1	Key Developments	71
5.5.2	Demand	71
5.5.3	Supply	73
5.5.4	Supply, Demand and Trade	73
5.6	Eastern Europe	75
5.6.1	Key Developments	75
5.6.2	Demand	75
5.6.2.1	Russia	75
5.6.2.2	Other Eastern Europe	77
5.6.3	Supply	78
5.6.3.1	Russia	78
5.6.3.2	Other Eastern Europe	78
5.6.4	Supply, Demand and Trade	78
5.6.4.1	Russia	78
5.6.4.2	Other Eastern Europe	79
5.7	Middle East	82
5.7.1	Key Developments	82
5.7.2	Demand	82
5.7.3	Supply	85
5.7.4	Supply, Demand and Trade	85
5.8	Africa	88
5.8.1	Key Developments	88
5.8.2	Demand	88



5.8.3	Supply	90
5.8.4	Supply, Demand and Trade	91
5.9	Asia Pacific.....	92
5.9.1	Key Developments	92
5.9.2	Demand.....	92
5.9.2.1	China	93
5.9.2.2	North-East Asia	95
5.9.2.3	South-East Asia	95
5.9.2.4	South Asia.....	96
5.9.2.5	Other South Asia.....	97
5.9.2.6	Australasia	97
5.9.3	Supply	100
5.9.3.1	China	100
5.9.3.2	North-East Asia	101
5.9.3.3	South-East Asia	102
5.9.3.4	South Asia.....	103
5.9.3.5	Australasia	104
5.9.4	Supply, Demand and Trade	104
5.9.4.1	China.....	105
5.9.4.2	North-East Asia	106
5.9.4.3	South-East Asia	106
5.9.4.4	South Asia.....	107
5.9.4.5	Australasia	108

Appendices

A	Methodology	111
A.1	Market Dynamics Forecasting Methodology	111
A.1.1	Capacity Availability and Forecasting	111
A.1.2	End-Use Consumption Forecasting	111
A.1.2.1	End-Use Sector Growth	112
A.1.2.2	Penetration (New Application Growth).....	112
A.1.2.3	Short-term Influences.....	113
A.1.3	Monomer Consumption Forecasting	113
B	The Vinyls Industry	114
B.1	Technology	114



Figures

Figure 1	Vinyls Value Chain	9
Figure 2	Vinyls Production, Acetylene-based.....	10
Figure 3	Global Trade of EDC, VCM and PVC, 2022.....	11
Figure 4	Global PVC Top Ten Capacity, Level of Integration	12
Figure 5	Global EDC Demand, 2022-e.....	17
Figure 6	Global GDP Growth vs. EDC Consumption Growth	17
Figure 7	Global EDC Consumption by Region	18
Figure 8	Global EDC Capacity Share by Marketer in 2022-e.....	19
Figure 9	Global EDC Capacity Additions.....	19
Figure 10	Global EDC Capacity.....	20
Figure 11	Global EDC Supply and Demand	28
Figure 12	Regional EDC Net Exports/Imports	30
Figure 13	Global VCM Demand, 2022-e	32
Figure 14	Global GDP Growth vs. VCM Consumption Growth	32
Figure 15	Global VCM Consumption by Region.....	33
Figure 16	Global VCM Capacity Share by Marketer in 2022-e	34
Figure 17	Global VCM Capacity Additions	34
Figure 18	Global VCM Capacity	35
Figure 19	Global VCM Supply and Demand	43
Figure 20	Global VCM Net Exports (Imports)	44
Figure 21	Global PVC Consumption by Type, 2022-e	47
Figure 22	Global GDP Growth vs PVC Consumption Growth.....	48
Figure 23	Global PVC Consumption by Region	49
Figure 24	Global PVC Capacity Share by Marketer in 2022-e.....	51
Figure 25	Global PVC Capacity Additions	51
Figure 26	Global PVC Capacity	51
Figure 27	Global PVC Supply and Demand	53
Figure 28	Global PVC Net Exports/(Imports)	53
Figure 29	North America PVC Consumption by End-Use	55
Figure 30	North America PVC Supply, Demand and Trade	58
Figure 31	United States PVC Supply, Demand and Trade	59
Figure 32	South America PVC Consumption, 2022-e	61
Figure 33	South America PVC Supply, Demand and Trade	64
Figure 34	Western Europe PVC Consumption, 2022-e.....	67
Figure 35	Western Europe PVC Supply, Demand and Trade	70
Figure 36	Central Europe PVC Consumption, 2022-e	72
Figure 37	Central Europe PVC Supply, Demand and Trade.....	74
Figure 38	Russia PVC Consumption, 2022-e.....	76
Figure 39	Other Eastern Europe PVC Consumption, 2022-e	77
Figure 40	Russia PVC Supply, Demand and Trade	79
Figure 41	Other Eastern Europe PVC Supply, Demand and Trade	80
Figure 42	Total Eastern Europe PVC Supply, Demand and Trade	81



Figure 43	Middle East PVC Consumption, 2022-e.....	83
Figure 44	Middle East PVC Supply, Demand and Trade	87
Figure 45	Africa PVC Consumption, 2022-e	89
Figure 46	Africa PVC Supply, Demand and Trade.....	91
Figure 47	Asia Pacific PVC Consumption, 2022-e.....	98
Figure 48	Asia Pacific PVC Consumption by End-Use	98
Figure 49	Asia Pacific PVC Supply, Demand and Trade	108
Figure 50	China PVC Supply, Demand and Trade.....	109
Figure 51	End-Use Consumption Drivers	112
Figure 52	Monomer Consumption Drivers	113
Figure 53	VCM via C ₂ H ₂ /HCl Process.....	116
Figure 54	VCM via C ₂ H ₄ /Cl ₂ Chlorination/Oxychlorination Process	118
Figure 55	Suspension Polymerisation Process: Reaction and Slurry Stripping	119
Figure 56	Suspension Polymerisation: Solids Drying and Handling	120

Tables

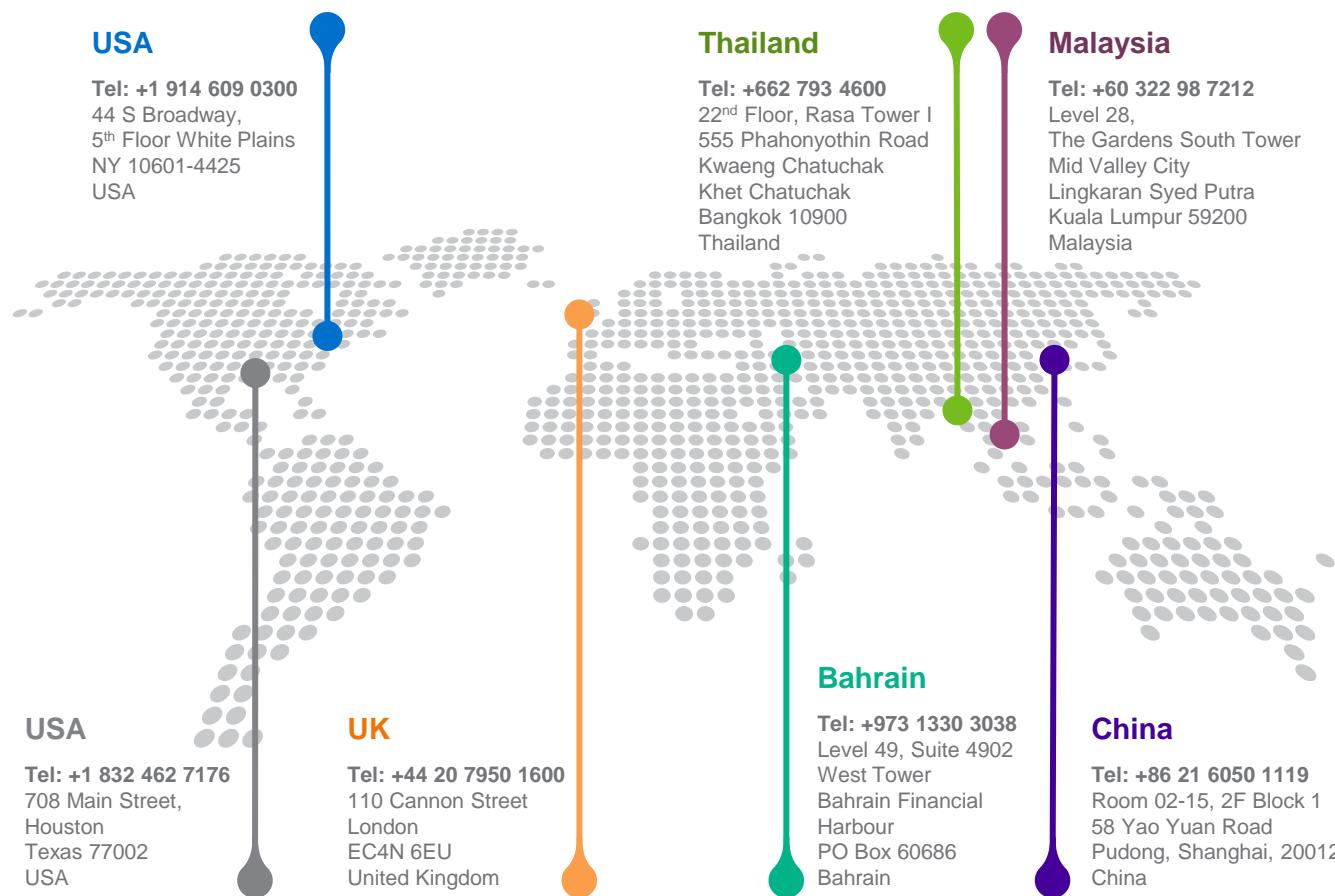
Table 1	Global EDC Consumption by Derivative	17
Table 2	Global EDC Consumption by Region	18
Table 3	Global EDC Supply and Demand	29
Table 4	Global VCM Consumption by End-Use	32
Table 5	Global VCM Consumption by Region.....	33
Table 6	Global VCM Supply and Demand	44
Table 7	Global PVC Consumption by End-Use.....	47
Table 8	Global PVC Consumption by Region	49
Table 9	Global PVC Supply and Demand	53
Table 10	North America PVC Consumption, 2022-e.....	55
Table 11	North America PVC Consumption by Country	55
Table 12	North America PVC Supply, Demand and Trade	58
Table 13	United States PVC Supply, Demand and Trade	59
Table 14	South America PVC Consumption by End-Use	61
Table 15	South America PVC Consumption by Country.....	61
Table 16	South America PVC Supply, Demand and Trade	64
Table 17	Western Europe PVC Consumption by End-Use	67
Table 18	Western Europe PVC Supply, Demand and Trade	70
Table 19	Central Europe PVC Consumption by End-Use.....	72
Table 20	Central Europe PVC Supply, Demand and Trade.....	74
Table 21	Russian PVC Consumption by End-Use	76
Table 22	Other Eastern Europe PVC Consumption by End-Use	77
Table 23	Russia PVC Supply, Demand and Trade	79
Table 24	Other Eastern Europe PVC Supply, Demand and Trade	80
Table 25	Total Eastern Europe PVC Supply, Demand and Trade	81
Table 26	Middle East PVC Consumption by End-Use	83
Table 27	Middle East PVC Consumption by Country.....	84
Table 28	Middle East PVC Supply, Demand and Trade	87



Table 29	Africa PVC Consumption by End-Use	89
Table 30	Africa PVC Consumption by Country	89
Table 31	Africa PVC Supply, Demand and Trade	92
Table 32	Asia Pacific PVC Consumption by Country	99
Table 33	Asia Pacific PVC Supply, Demand and Trade	108
Table 34	China PVC Supply, Demand and Trade.....	109



NexantECA partners with clients to help them navigate the big global energy, chemicals and materials issues of tomorrow. We provide independent advice through our consulting, subscriptions and reports, and training businesses using expertise developed in markets, economics and technology through our fifty years of operation. We are entirely dedicated to supporting sustainable development of the industry and provide expert advice with efficiency, speed, and agility.



Disclaimer

This Report was prepared by NexantECA, the Energy and Chemicals Advisory company. Except where specifically stated otherwise in this Report, the information contained here is prepared on the basis of information that is publicly available, and contains no confidential third-party technical information to the best knowledge of NexantECA. Aforesaid information has not been independently verified or otherwise examined to determine its accuracy, completeness or financial feasibility. Neither NexantECA, Client nor any person acting on behalf of either assumes any liabilities with respect to the use of or for damages resulting from the use of any information contained in this Report. NexantECA does not represent or warrant that any assumed conditions will come to pass.

Copyright © by NexantECA (BVI) Ltd. 2022. All rights reserved.