

Chlorinated Methanes

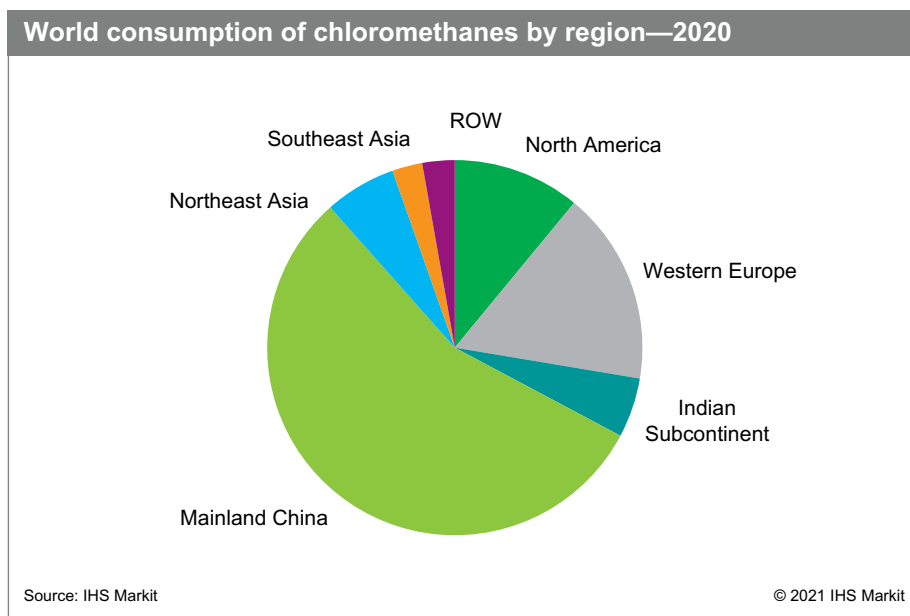
June 2021

Abstract

Chlorinated methanes include methyl chloride (CH_3Cl), methylene chloride (CH_2Cl_2), chloroform (CHCl_3), and carbon tetrachloride (CCl_4). Total global consumption of chlorinated methanes in 2020 is estimated at nearly 7.6 million metric tons. Consumption is forecast to grow at an average annual rate of 2.9% during 2020–25.

Chlorinated methanes find applications both as chemical feedstocks and are also used extensively for their excellent solvent properties in industrial and pharmaceutical processes.

The following table presents world consumption of chlorinated methanes by region:



Growth in consumption will be driven primarily by mainland China, which accounts for 56% of global consumption of all chlorinated methanes. Demand for methyl chloride, chloroform, and carbon tetrachloride is primarily driven by demand for downstream chemical derivatives such as silicones, methyl cellulose ethers, and fluorocarbons. Methylene chloride is similarly seeing growth in demand for the manufacture of R-32, an effective low-cost fluorocarbon with relatively low global warming potential, but also has extensive uses as a solvent in pharmaceutical and chemical processing.

For more detailed information, see the table of contents, shown below.

IHS Markit's Chemical Economics Handbook – *Chlorinated Methanes* is the comprehensive and trusted guide for anyone seeking information on this industry. This latest report details global and regional information, including

Contacts

IHS Markit Customer Care • CustomerCare@ihsmarkit.com





Global summary;
regional coverage



Producers with
annual capacities
and plant sites



Production figures
and trends



Consumption and
forecasts by end use
application



Manufacturing
processes and
environmental issues



Trade – imports
and exports

Key Benefits

IHS Markit's Chemical Economics Handbook – *Chlorinated Methanes* has been compiled using primary interviews with key suppliers, organizations and leading representatives from the industry in combination with IHS Markit's unparalleled access to upstream and downstream market intelligence, expert insights into industry dynamics, trade and economics.

This report can help you:

- Identify trends and driving forces influencing chemical markets
- Forecast and plan for future demand
- Understand the impact of competing materials
- Identify and evaluate potential customers and competitors
- Evaluate producers
- Track changing prices and trade movements
- Analyze the impact of feedstocks, regulations, and other factors on chemical profitability

Contents

Executive summary	10
Summary	11
Methyl chloride	12
Methylene chloride	13
Chloroform	14
Carbon tetrachloride	14
Introduction	16
Manufacturing processes	17
Methanol hydrochlorination	17
Thermal chlorination of methane	17
Oxychlorination of methane	18
Carbon tetrachloride by chlorination of C1-C3 hydrocarbons	18
Carbon tetrachloride by chlorination of carbon disulfide	19
Methanolysis of chloromethylsilanes	19
Environmental issues	20
Supply and demand by region	23
United States	23
– Producing companies	23
– Salient statistics	24
– Chlorinated methanes	24
– Methyl chloride	25
– Methylene chloride	26
– Chloroform	27
– Carbon tetrachloride	28
– Consumption	29
– Methyl chloride	30
– Chlorosilanes in silicone production	31
– Cellulose ethers	32
– Quaternary ammonium compounds	32
– Agriculture	32
– Halogenated butyl rubber	33
– Other	33
– Methylene chloride	33
– Adhesives	35
– Paint removers	35
– Fluorocarbons	36
– Chemical processing	37
– Pharmaceuticals	37
– Metal cleaning	37
– Aerosols	38

– Foam blowing	38
– Other	39
– Chloroform	39
– Carbon tetrachloride	40
– Price	41
– Trade	42
Canada	42
– Consumption	43
– Methyl chloride	43
– Methylene chloride	43
– Chloroform	44
– Carbon tetrachloride	44
– Trade	44
Mexico	44
– Producing companies	44
– Consumption	44
– Methyl chloride	45
– Methylene chloride	45
– Chloroform	46
– Carbon tetrachloride	46
– Trade	46
South America	46
– Producing companies	46
– Salient statistics	46
– Methyl chloride	46
– Methylene chloride	47
– Chloroform	48
– Carbon tetrachloride	48
– Consumption	48
– Trade	49
– Methyl chloride	49
– Methylene chloride	50
– Chloroform	51
– Carbon tetrachloride	51
Western Europe	51
– Producing companies	52
– Salient statistics	53
– Methyl chloride	53
– Methylene chloride	53
– Chloroform	54
– Carbon tetrachloride	55
– Consumption	55
– Methyl chloride	56

– Methyl chlorosilanes for silicone production	57
– Cellulose ethers	57
– Quaternary ammonium chlorides	57
– Agriculture	58
– Halogenated butyl rubber	58
– Methylene chloride	58
– Adhesives	59
– Paint stripping	59
– Pharmaceuticals	59
– Chemicals processing	59
– Metal degreasing	59
– Foam blowing	59
– Aerosols	59
– Fluorocarbons	60
– Chloroform	60
– Carbon tetrachloride	61
– Price	61
– Trade	62
– Methyl chloride	62
– Methylene chloride	63
– Chloroform	64
– Carbon tetrachloride	65
Central Europe	66
– Producing companies	66
– Salient statistics	66
– Methyl chloride	66
– Methylene chloride	67
– Chloroform	68
– Carbon tetrachloride	69
– Consumption	69
– Methyl chloride	69
– Methylene chloride	69
– Chloroform	70
– Carbon tetrachloride	70
– Trade	70
– Methyl chloride	70
– Methylene chloride	71
– Chloroform	72
– Carbon tetrachloride	73
CIS and Baltic States	73
– Producing companies	73
– Salient statistics	73
– Methyl chloride	74

– Methylene chloride	74
– Chloroform	75
– Carbon tetrachloride	76
– Consumption	76
– Methyl chloride	76
– Methylene chloride	76
– Chloroform	77
– Carbon tetrachloride	78
– Trade	78
– Methyl chloride	78
– Methylene chloride	79
– Chloroform	80
– Carbon tetrachloride	81
Middle East	81
– Producing companies	82
– Salient statistics	82
– Methyl chloride	82
– Methylene chloride	82
– Chloroform	83
– Carbon tetrachloride	84
– Consumption	84
– Trade	86
Africa	87
– Producing companies	87
– Salient statistics	88
– Methyl chloride	88
– Methylene chloride	88
– Chloroform	89
– Carbon tetrachloride	90
– Consumption	90
– Trade	91
Indian Subcontinent	92
– Producing companies	92
– Salient statistics	93
– Methyl chloride	93
– Methylene chloride	94
– Chloroform	95
– Carbon tetrachloride	96
– Consumption	97
– Methyl chloride	98
– Methylene chloride	99
– Chloroform	100
– Carbon tetrachloride	100

– Price	101
– Trade	101
– Methyl chloride	101
– Methylene chloride	102
– Chloroform	103
– Carbon tetrachloride	104
Mainland China	105
– Producing companies	105
– Salient statistics	108
– Methyl chloride	108
– Methylene chloride	109
– Chloroform	110
– Carbon tetrachloride	111
– Consumption	112
– Methyl chloride	113
– Methylene chloride	114
– Chloroform	116
– Carbon tetrachloride	116
– Emissive applications as reagents for laboratory and analytical uses	117
– Nonemissive use as raw materials	117
– Price	117
– Trade	119
– Methyl chloride	119
– Methylene chloride	119
– Chloroform	120
Northeast Asia	120
– Overview	120
– Producing companies	120
– Salient statistics	121
– Methyl chloride	122
– Methylene chloride	123
– Chloroform	123
– Carbon tetrachloride	124
– Consumption	125
– Methyl chloride	126
– Methylene chloride	128
– Chloroform	128
– Carbon tetrachloride	129
– Price	130
– Trade	130
– Methyl chloride	130
– Methylene chloride	131
– Chloroform	132

– Carbon tetrachloride	133
– Japan	134
– Producing companies	134
– Salient statistics	134
– Methyl chloride	134
– Methylene chloride	135
– Chloroform	136
– Carbon tetrachloride	137
– Consumption	138
– Methyl chloride	139
– Methylene chloride	140
– Chloroform	142
– Carbon tetrachloride	143
– Trade	144
– South Korea	144
– Producing companies	144
– Salient statistics	145
– Methyl chloride	145
– Methylene chloride	145
– Chloroform	146
– Carbon tetrachloride	147
– Consumption	147
– Trade	148
– Taiwan	148
– Producing companies	148
– Salient statistics	148
– Methyl chloride	149
– Methylene chloride	149
– Chloroform	150
– Carbon tetrachloride	151
– Consumption	151
– Trade	152
Southeast Asia	152
– Producing companies	152
– Salient statistics	153
– Methyl chloride	154
– Methylene chloride	155
– Chloroform and carbon tetrachloride	155
– Consumption	156
– Methyl chloride	157
– Methylene chloride	158
– Chloroform	159
– Carbon tetrachloride	159

– Price	159
– Trade	160
– Methyl chloride	160
– Methylene chloride	161
– Chloroform	162
– Carbon tetrachloride	163
Additional resources	164
Revisions	165
Data Workbook	166

IHS Markit Customer Care

CustomerCare@ihsmarkit.com

Asia and the Pacific Rim

Japan: +81 3 6262 1887

Asia Pacific: +604 291 3600

Europe, Middle East, and Africa: +44 (0) 1344 328 300

Americas: +1 800 447 2273

Disclaimer

The information contained in this report is confidential. Any unauthorized use, disclosure, reproduction, or dissemination, in full or in part, in any media or by any means, without the prior written permission of IHS Markit or any of its affiliates ("IHS Markit") is strictly prohibited. IHS Markit owns all IHS Markit logos and trade names contained in this report that are subject to license. Opinions, statements, estimates, and projections in this report (including other media) are solely those of the individual author(s) at the time of writing and do not necessarily reflect the opinions of IHS Markit. Neither IHS Markit nor the author(s) has any obligation to update this report in the event that any content, opinion, statement, estimate, or projection (collectively, "information") changes or subsequently becomes inaccurate. IHS Markit makes no warranty, expressed or implied, as to the accuracy, completeness, or timeliness of any information in this report, and shall not in any way be liable to any recipient for any inaccuracies or omissions. Without limiting the foregoing, IHS Markit shall have no liability whatsoever to any recipient, whether in contract, in tort (including negligence), under warranty, under statute or otherwise, in respect of any loss or damage suffered by any recipient as a result of or in connection with any information provided, or any course of action determined, by it or any third party, whether or not based on any information provided. The inclusion of a link to an external website by IHS Markit should not be understood to be an endorsement of that website or the site's owners (or their products/services). IHS Markit is not responsible for either the content or output of external websites. Copyright © 2021, IHS Markit®. All rights reserved and all intellectual property rights are retained by IHS Markit.

