

## Analysis of Annual Valuation Multiples of Specialty Chemical and Commodity Chemical Transactions

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Enclosed is Scott-Macon's annual update of valuation multiples for specialty chemical and commodity chemical transactions. As shown in the enclosed charts, the median multiple of total enterprise value ("TEV") to latest twelve months EBITDA ("EBITDA multiple") for specialty chemical transactions closed in 2019 was 10.9x compared to 12.2x, 10.4 and 9.7x for specialty chemical transactions which closed in 2018, 2017 and 2016, respectively. The 10.9x EBITDA multiple was below the multiple of 12.2x for 2018 and above the median for the five year period 2014-2018 of 10.4x. The median multiple of TEV to latest twelve months sales ("sales multiple") for specialty chemical transactions which closed in 2019 of 2.4x was above the multiple of 2.3x for 2018 and the median for the five year period 2014-2018 of 1.7x.

The median EBITDA and sales multiples for commodity chemical transactions which closed in 2019 were 8.4x and 0.9x, respectively, compared to 9.6x and 1.4x, respectively, for commodity chemical transactions which closed in 2018 and the median EBITDA and sales multiples for the five year period 2014-2018 of 8.7x and 1.2x, respectively.

The median EBITDA multiple in 2019 was 13.6x for specialty chemical transactions closed with TEV's above \$1 billion compared to 9.8x for transactions with TEV's below \$1 billion. The median sales multiple in 2019 was 2.4x for specialty chemical transactions which closed with TEV's both above and below \$1 billion.

The total TEV of all specialty chemical transactions which closed in 2019 for which information has been disclosed and for which at least one valuation multiple can be calculated was \$80.5 billion, representing 30 transactions. This compares with the total TEV of specialty chemical transactions of \$152.6 billion representing 41 transactions and \$175.7 billion, representing 44 transactions in all of 2018 and 2017, respectively, and the median annual TEV of specialty chemical transactions for which at least one valuation multiple can be calculated which closed in the ten-year period 2009 – 2018 of \$35.7 billion and the median annual number of closed transactions in the same period of 43. The TEV of all commodity chemical transactions which closed in 2019 for which information has been disclosed and for which at least one valuation multiple can be calculated was \$27.9 billion, representing 27 transactions. Strategic buyers accounted for 83% of the number of specialty chemical transactions and for 74% of the number of commodity chemical transactions closed in 2019.

# COMPARISON OF MEDIAN CHEMICAL TRANSACTION MULTIPLES 2017–2019

	Sales			EBITDA		
	2017	2018	2019	2017	2018	2019
<b>Specialty Chemicals</b>						
All Closed Transactions	1.8x	2.3x	2.4x	10.4x	12.2x	10.9x
Over \$1 Billion	2.6x	3.5x	2.4x	13.5x	15.0x	13.6x
Under \$1 Billion	1.5x	1.9x	2.4x	7.7x	9.9x	9.8x
<b>Commodity Chemicals</b>						
All Closed Transactions	1.6x	1.4x	0.9x	8.7x	9.6x	8.4x
Over \$1 Billion	1.8x	3.1x	1.2x	8.7x	9.5x	8.6x
Under \$1 Billion	1.4x	1.2x	0.9x	8.7x	10.5x	8.3x

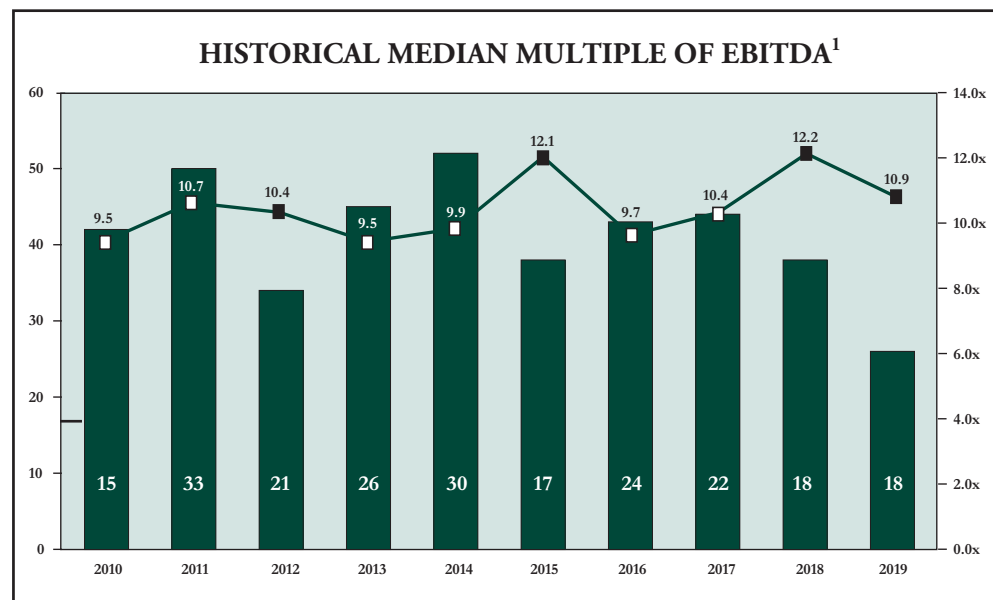
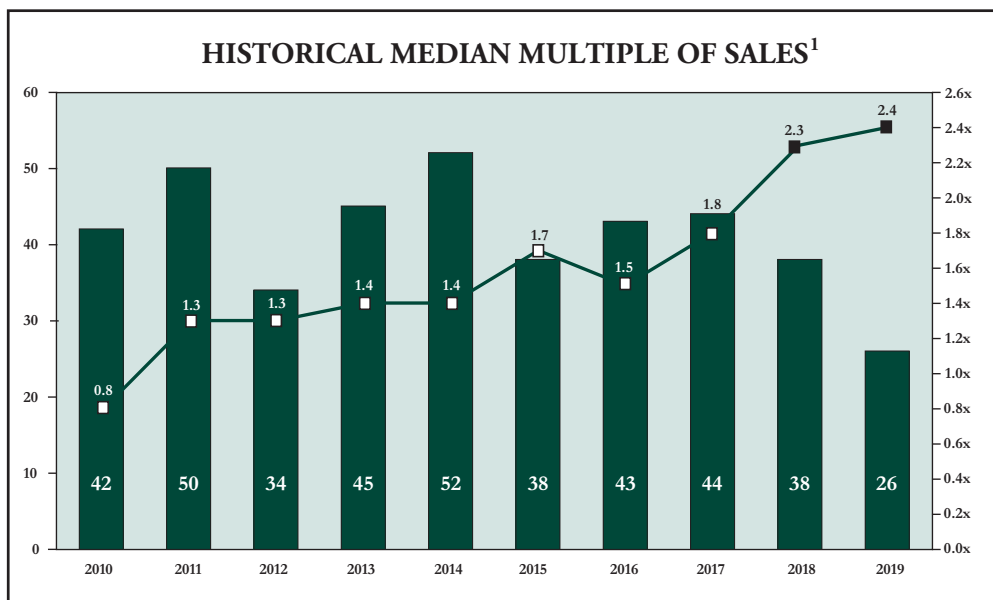
**SCOTT-MACON, LTD.**

800 Third Avenue, New York, NY 10022

(212) 755-8200

[www.scott-macon.com](http://www.scott-macon.com)

# SPECIALTY CHEMICAL TRANSACTION MULTIPLES 2010–2019



■ Number of Transactions    ■ Multiple

1) Transactions for 2019 and prior years include only those that were closed during the respective year. Whole numbers in the transaction bars refer to the number of data points used in the median calculation.

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