Converting Volumetric Flow Rate (ml/min) to Linear Flow Rate (cm/hour)

$$\text{Linear flow rate (ml/min)} = \frac{\text{Volumetric flow rate (ml/min)} \times 60}{\text{Cross sectional area of column (cm}^2\text{)}}$$

$$= Z \times 60 \times \frac{4}{\pi \times d^2}$$

Z = volumetric flow rate in ml/min
d = column inner diameter in cm

Table for Converting Volumetric Flow Rates (ml/min) to Linear Flow Rates (cm/h) for Columns of Varying Internal Diameters (mm):

Choose the volumetric flow rate that you are using against the internal diameter of your column to find the equivalent flow rate in cm/h.

For example a WorkBeads™ 40 IEX 8mm pre-packed column (8mm internal diameter) will have a Linear Flow Rate of 238.85 cm/h at 2.0 ml/min.

	Internal Diameter of Column (mm)								
	5.0	8.0	10.0	12.5	16.0	26.0	50.0	100.0	180.0
0.1	30.57	11.94	7.64	4.89	2.99	1.13	0.31	0.08	0.02
0.2	61.15	23.89	15.29	9.78	5.97	2.26	0.61	0.15	0.05
0.3	91.72	35.83	22.93	14.68	8.96	3.39	0.92	0.23	0.07
0.5	152.87	59.71	38.22	24.46	14.93	5.65	1.53	0.38	0.12
1	305.73	119.43	76.43	48.92	29.86	11.31	3.06	0.76	0.24
1.5	458.60	179.14	114.65	73.38	44.79	16.96	4.59	1.15	0.35
2	611.46	238.85	152.87	97.83	59.71	22.61	6.11	1.53	0.47
3	917.20	358.28	229.30	146.75	89.57	33.92	9.17	2.29	0.71
4	1222.93	477.71	305.73	195.67	119.43	45.23	12.23	3.06	0.94
5	1528.66	597.13	382.17	244.59	149.28	56.53	15.29	3.82	1.18
10		1194.27	764.33	489.17	298.57	113.07	30.57	7.64	2.36
20			1528.66	978.34	597.13	226.13	61.15	15.29	4.72
30				1467.52	895.70	339.20	91.72	22.93	7.08
40					1194.27	452.27	122.29	30.57	9.44
50					1492.83	565.33	152.87	38.22	11.80
100						1130.67	305.73	76.43	23.59
200							611.46	152.87	47.18
300							917.20	229.30	70.77
500								382.17	117.95

Vol. Flow Rate (ml/min)