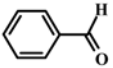
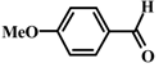
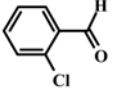
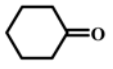
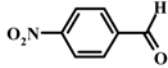
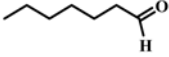
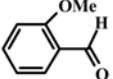
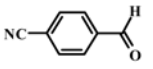
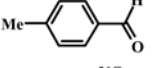
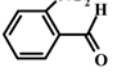
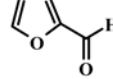
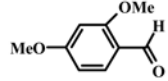
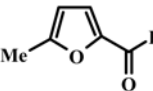
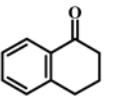
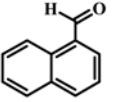
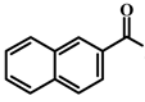
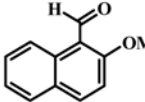
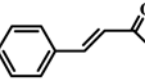


Table 2. Cyanosilylation of aldehydes and ketones catalyzed by $K_5CoW_{12}O_{40} \cdot 3H_2O$

Entry	Compound	Time (h)	Yield ^a (%)	Selectivity ^b %
1		3	88	93
2		1	94	100
3		4	84	100
4		2	96	96
5		4	76	100
6		2	89	95
7		2	95	96
8		4.5	70	100
9		4	81	98
10		5	72	100
11		4.5	88	100
12		1.5	93	100
13		1.4	95	100
14		4	54	100
15		1.5	76	100
16		7	78	100
17		7	85	100
18		3	82	94

^aGC yield of cyanohydrin trimethylsilyl ethers, Products characterized by ¹H NMR and IR.⁸ ^bRatio of cyanohydrin trimethylsilyl ethers product to total products.

Experimental Section

$K_5CoW_{12}O_{40} \cdot 3H_2O$ was prepared according to literature^{7a}. Typical experimental procedure: A mixture of carbonyl compound (1.0 mmol), $K_5CoW_{12}O_{40} \cdot 3H_2O$ (0.05 mmol) and TMSCN (1.2 mmol) in dried acetonitrile (4 mL) was stirred at room temperature for the time indicated in Table 1. The reaction was monitored by GC with decane as a gas chromatography internal standard. After completion of the reaction, the catalyst was filtered off and further purification was done by silica gel chromatography. The products were characterized from their IR and NMR spectral data.⁸

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- Some Spectral Data:
2-Hydroxyphenyl acetonitril (Table 1, Entry 1): IR (neat), ν (cm⁻¹): 3417.7 (OH), 2249 (CN). ¹H NMR (CDCl₃), δ (ppm): 2.90 (bs, 1H), 5.55 (s, 1H), 7.40-7.60 (m, 5H). ¹³C NMR (CDCl₃), δ (ppm): 63.5, 118.8, 126.6, 129.1, 129.8, 135.2.
2-Hydroxy(4-methoxyphenyl) acetonitril (Table 1, Entry 2): IR (neat), ν (cm⁻¹): 3417.66 (OH), 2250.80 (CN). ¹H NMR (CDCl₃), δ (ppm): 3.08 (d, *J* = 6.8 Hz, 1H), 3.83 (s, 3H), 5.47 (d, *J* = 6.8 Hz, 1H), 6.95 (m, 2H), 7.44 (m, 2H). ¹³C NMR (CDCl₃), δ (ppm): 55.04, 63.2, 114.5, 118.9, 127.5, 128.3, 160.6.

2-Hydroxy(2-chlorophenyl) acetonitril (Table 1, Entry 3): IR (neat), ν (cm^{-1}): 3504.5 (OH), 2232.2 (CN). ^1H NMR (CDCl_3), δ (ppm): 2.75 (s, 1H), 5.46 (s, 1H), 7.33 (m, 3H), 7.46 (s, 1H). ^{13}C NMR (CDCl_3), δ (ppm): 63.5, 118.8, 126.6, 129.1, 129.8, 135.2.

1-Hydroxy-1-cyanocyclohexane (Table 1, Entry 4): ^1H NMR (CDCl_3), δ (ppm): 1.03-1.45 (m, 5H), 1.61-1.95 (m, 6H), 2.86 (d, $J = 6.4$ Hz, 1H), 4.27 (t, $J = 6.3$ Hz, 1H). ^{13}C NMR (CDCl_3), δ (ppm): 25.3, 25.4, 25.9, 27.8, 28.1, 42.1, 66.2, 119.3.

2-Hydroxy(4-nitrophenyl) acetonitril (Table 1, Entry 5): ^1H NMR (CDCl_3), δ (ppm): 3.42 (s, 1H), 5.54 (s, 1H), 7.70 (m, 2H), 7.75 (m, 2H). ^{13}C NMR (CDCl_3), δ (ppm): 63.26, 116.54, 116.76, 119.14, 129.10, 131.51, 162.59, 165.07.

2-Hydroxy(4-cyanophenyl) acetonitril (Table 1, Entry 8): ^1H NMR (CDCl_3), δ (ppm): 3.70 (d, $J = 6.5$ Hz, 1H), 5.64 (d, $J = 6.5$ Hz, 1H), 7.73 (m, 4H). ^{13}C NMR (CDCl_3), δ (ppm): 62.5, 113.3,

117.9, 118.0, 127.2, 132.9, 140.1.

2-Hydroxy(4-methylphenyl) acetonitril (Table 1, Entry 9): IR (neat), ν (cm^{-1}): 3415.7 (OH), 2246.9 (CN). ^1H NMR (CDCl_3), δ (ppm): 2.38 (s, 3H), 3.28 (bs, 1H), 5.48 (s, 1H), 7.24 (d, $J = 8.2$ Hz, 2H), 7.41 (2H, d, $J = 8.2$ Hz). ^{13}C NMR (CDCl_3), δ (ppm): 21.2, 63.3, 119.0, 126.6, 129.8, 132.3, 139.9.

2-Hydroxy(2,4-methoxyphenyl) acetonitril (Table 1, Entry 12): ^1H NMR (CDCl_3), δ (ppm): 3.73 (d, $J = 7.0$ Hz, 1H), 3.94 (s, 3H), 5.59 (d, $J = 7.0$ Hz, 1H), 6.90 (m, 2H), 7.40 (m, 2H).

2-Hydroxy(1-naphtyl) acetonitril (Table 1, Entry 15): ^1H NMR (CDCl_3), δ (ppm): 3.41 (d, $J = 6.9$ Hz, 1H), 6.15 (d, $J = 6.9$ Hz, 1H), 8.20-7.40 (m, 7H).

2-Hydroxy(2-naphtyl) acetonitril (Table 1, Entry 16): ^1H NMR (CDCl_3), δ (ppm): 2.97 (bs, 1H), 5.72 (bs, 1H), 7.50 (m, 3H), 7.90 (m, 4H).
